The Senate

Select Committee on Energy Planning and Regulation in Australia

Final Report

ISBN 978-1-76093-767-6 (Printed version)

Printed by the Senate Printing Unit, Parliament House, Canberra

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Abbreviations

ACCC	Australian Competition and Consumer Commission
ACL	Australian Consumer Law
ACOSS	Australian Council of Social Service
ACSL	Australian Council of Social Licence
ACTU	Australian Council of Trade Unions
AEMA	Australian Energy Market Agreement
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
APGA	Australian Pipelines and Gas Association
Capex	Capital expenditure
CCA	Climate Change Authority
CCRG	Consumer and Community Reference Group
CDPs	Candidate Development Paths
CEC	Clean Energy Council
CER	Consumer Energy Resources
CER Roadmap	National Consumer Energy Resources Roadmap – Powering Decarbonised Homes and Communities
CESS	Capital expenditure sharing scheme
CFDP	Counterfactual Development Pathway
CIS	Centre for Independent Studies
COAG	Council of Australian Governments
Consumer Panel	2026 ISP Consumer Panel

DCCEEW/The Department	Department of Climate Change, Energy, the Environment and Water
DER	Distributed Energy Resources
DNSPs	Distributed network service providers
DSN	Declared shared network
EAP	Energy Advisory Panel
EBSS	Efficiency benefit sharing scheme
ECA	Energy Consumers Australia
ECMC	Energy and Climate Change Ministerial Council
Edwards Review	Review of the Energy Security Board
EGA	Energy Grid Alliance
Energy Ministers	Federal Minister for Climate Change and Energy, and the state and territory ministers
ESB	Energy Security Board
ETU	Electrical Trades Union
EWOV	Energy and Water Ombudsman Victoria
FBPG	Forecasting Best Practice Guidelines
Finkel Review	Independent Review into the Future Security of the National Electricity Market
FOI	Freedom of Information
GW	Gigawatts
IASR	Input, Assumptions and Scenarios Report
IEEFA	Institute for Energy Economics and Financial Analysis
IESP	Independent Engineers, Scientists and Professionals
IPA	Institute of Public Affairs
ISP	Integrated System Plan

kWh	Kilowatt hour
NECF	National Energy Customer Framework
NEL	National Electricity Law
NEM	National Electricity Market
NEOs	National Energy Objectives
NER	National Electricity Rules
NERL	National Energy Retail Law
NERR	National Energy Retail Rules
NETCC	New Energy Tech Consumer Code
NGL	National Gas Law
NT Electricity Act	National Electricity (Northern Territory) (National Uniform Legislation) Act 2015
ODP	Optimal Development Path
PACR	Project Assessment Conclusions Report
PADR	Project Assessment Draft Report
PIRs	Post Implementation reviews
PV	Photovoltaic
REZ	Renewable Energy Zone
RIT-T	Regulatory Investment Test for Transmission
RoLR	Retailer of Last Resort
STPSIS	Service target performance incentive scheme
The Energy Council	Council of Australian Governments Energy Council
TNSPs	Transmission network service providers
TOOT analysis	Take-one-out-at-a-time analysis
UNSW	University of New South Wales

Vertigan review	Review of Governance Arrangements for Australian Energy Markets
VRE	Variable Renewable Energy
WAGGDA	Wallaloo and Gre Gre District Alliance
WEM	Western Australia's Wholesale Electricity Market
WRL	Western Renewables Link

List of recommendations

Recommendation 1

5.7 The committee recommends that the Australian Government request the Productivity Commission undertake an inquiry into the Australian energy network, with particular focus on:

- **the adequacy of the planning regime in delivering economically efficient outcomes, including a proposed economic test as part of, or separate to, the Regulatory Investment Test for Transmission (RIT-T);**
- **reviewing all current Actionable Projects within six months to ensure they provide sufficient economic value and are in the public interest;**
- **the impact of opportunities in the RIT-T to increase project costs;**
- **the apportionment of system charges including whether project overspend risk should be carried by consumers alone;**
- **transmission access and pricing reform;**
- **reviewing any conflicts of interest, and if required, the development of a plan of divestiture of the Australian Energy Market Operator (AEMO) subsidiaries;**
- **whether responsibility for planning should be the responsibility of states and territories rather than AEMO;**
- **whether conflicts of interest are arising from governments owning energy assets; and**
- **undertaking an assessment of the competitive landscape across the National Energy Market (NEM) to determine where more competition can increase economic efficiency.**

5.8 The committee also recommends the inquiry also examine whether any of the Productivity Commission's recommendations made in the 2013 Electricity Network Regulation Inquiry remain outstanding, or require updating.

Recommendation 2

5.11 The committee recommends the Energy and Climate Change Ministerial Council (ECMC) develop and publish an updated Strategic Energy Plan.

Recommendation 3

5.14 The committee recommends terms of reference for the Australian Government's recently commissioned National Electricity Market wholesale market settings review to review the governance structures of the market participants including an examination of the responsibilities of AEMO, the Australian Energy Market Commission (AEMC), Australian Energy Regulator (AER), and the Transmission Network Service Providers in the Integrated System Plan (ISP), RIT-T, and Feedback Loop process.

Recommendation 4

5.15 The committee recommends the ECMC consider requesting the Commonwealth Finance Minister make the AEMO a corporate Commonwealth entity through a rule made under the Public Governance, Performance and Accountability Act 2013 (PGPA Act).

Recommendation 5

5.17 The committee recommends the Australian Government publish on the Department of Climate Change, Energy, the Environment and Water's website relevant information about the role, function, decision-making processes and work program of the Energy and Climate Change Ministerial Council (ECMC) and the Energy Advisory Panel (EAP), including the terms of reference and operating charter of the EAP.

Recommendation 6

5.20 The committee recommends the ECMC direct the AEMC to conduct post-implementation reviews on rule changes to determine whether rule changes are effective and operate as intended. These reviews should be published on the AEMC's website once concluded.

Recommendation 7

5.27 The committee recommends the ECMC member ministers table a statement that each Final Integrated System Plan (ISP) meets the National Energy Objectives (NEOs) in their parliament within 30 days of AEMO publishing the Final ISP, starting with the 2026 ISP.

Recommendation 8

5.28 The committee recommends the ECMC consider a rule change so AEMO's directors must sign off on both Draft and Final ISP attesting the plans meet the NEOs.

Recommendation 9

5.30 The committee recommends the ECMC consider a rule change to remove AEMO's power to make projects actionable for the 2026 and 2028 ISP subject to the findings of the Productivity Commission review (i.e., Recommendation 1).

Recommendation 10

5.32 The committee recommends the ECMC consider a rule change to ensure the modelling carried out that determines actionable projects include an

economic test, labour market impacts, pricing impacts, and productivity impacts, not just a cost-benefit analysis process.

Recommendation 11

5.35 The committee recommends the National Electricity Rules (NER) be reviewed to accommodate a rule change that encourages greater contestability and a diversity of providers in the NEM by adopting competitive bidding and recommendations from work carried out by the AEMC in 2022.

Recommendation 12

5.37 The committee recommends the AEMO align its modelling approach with open-source software and open data principles.

Recommendation 13

5.41 The committee recommends the ECMC consider a rule change to ensure the ISP include the creation of further Candidate Development Paths that incorporate greater use of non-network solutions and non-interconnection versions.

Recommendation 14

5.42 The committee recommends the ECMC consider a rule change to amend the ISP methodology to include consideration of additional counterfactuals when undertaking cost benefit analyses to include consideration of non-network solutions including but not limited to all forms of storage, Virtual Transmission Lines (VTL), virtual power plants (VPP) and other consumer energy resources.

Recommendation 15

5.43 The committee recommends the ECMC consider a rule change to the Cost Benefit Analysis Guidelines so that costs deemed as 'sunk costs' are included in a separate analysis so evidence is clear.

Recommendation 16

5.47 The committee recommends the Australian Government adequately resource the implementation of the Community Energy Resources (CER) Roadmap to accelerate CER integration into future ISPs.

Recommendation 17

5.54 The committee recommends the ECMC establish a CER consumer advocacy body to assist and enhance the work of Energy Consumers Australia (ECA).

Recommendation 18

5.55 The committee recommends the ECMC commission an independent review of the ECA board to ensure that the interests of consumers are best represented by members with appropriate skills and knowledge to do so.

Recommendation 19

5.56 The committee recommends the AER examine whether a positive duty of care should be imposed on energy market service providers to ensure appropriate protections are offered to consumers.

Recommendation 20

5.57 The committee recommends the ECMC review the National Energy Objectives so that greater weight is given to the long-term interests of consumers.

Recommendation 21

5.60 The committee recommends the Australian Government accelerate the establishment of a CER Technical Regulator, and the development of nationally consistent standards and consumer frameworks.

Recommendation 22

5.63 The committee recommends the Australian Government undertake a comprehensive review of network charges to ensure that consumers are not being unfairly penalised.

Chapter 1
Introduction

1.1 Worldwide trade competitiveness, appetite for lower costs, innovation, new technology, decarbonisation targets and consumers' expectations are driving the current profound transformation of the energy system. Similarly, Australia's energy market is undergoing a historic transformation.

1.2 The institutional and regulatory frameworks must be efficient and fit-for-purpose to adapt and meet the challenges and opportunities of this new era and the decarbonisation objectives set by governments. The need to accelerate and increase investments and projects requires, more than ever, sound and credible planning to enable the delivery of reliable and affordable electricity to consumers. However, various stakeholders have been critical of Australia's energy system and have raised issues in relation to the regulatory frameworks, governance arrangements of the market bodies, planning methodology, and choices of energy sources.

1.3 Australia's commitment to reducing emissions is critical not just for addressing climate change but for securing a sustainable and resilient energy future.

1.4 As we approach key milestones under the Paris Agreement, it is clear that meeting these targets requires a combination of innovation, robust governance and decisive action. This is especially important considering Australia's targets of reducing emissions by 43 per cent below 2005 levels by 2030, and achieving net zero emissions by 2050. It is crucial to meet these targets through a whole of system approach to ensure that the interests of consumers are being met, to decrease emissions and to ensure economic growth.

1.5 To aid in this transition, the Australian Government has pledged an 82 per cent renewables energy mix by 2030 and billions of spending on various green energy projects. However, merely setting an 82 per cent renewables target does not mean that we will achieve a 43 per cent reduction in emissions by 2030. We cannot assume that the current strategy will work to its intended effect.

1.6 Successfully transitioning Australia's energy grid requires a bold reconsideration of all available pathways. A failure to do so would risk an abdication of our commitments under the Paris Agreement. The establishment of this select committee offers an opportunity to assess the effectiveness of our energy system's planning and governance. It will enable us to gauge whether the market bodies, Australia's energy structures, governance, regulations, functions and operations are appropriate and ready for meeting emission target reductions whilst ensuring the reliability of the system and a prosperous economy for our future.

1.7 This report explores the structural challenges within the National Electricity Market (NEM) and highlights the need for significant reforms to facilitate the energy transition. While some progress has already been made, with electricity emissions 30 per cent lower than in 2015 due to renewables adoption, there are various shortcomings and inefficiencies with our current approach which must be rectified if we are to successfully transition our energy system into one that is emissions-free, yet also affordable and reliable.

Committee establishment

1.8 On 16 September 2024, the Senate established a select committee, to be known as the Select Committee on Energy Planning and Regulation in Australia, to inquire into and report on the institutional structures, governance, regulation, functions, and operations of the Australian energy market, with particular reference to:

(a) the three overarching laws within which energy markets are governed:
    (i) National Electricity Law,
    (ii) National Gas Law, and
    (iii) National Energy Retail Law;
(b) the role and function of the Australian Energy Regulator;
(c) the role and function of the Australian Energy Market Operator (AEMO), including its development of the Integrated System Plan in accordance with the National Electricity Objectives;
(d) the role and function of the Australian Energy Market Commission;
(e) the role and function of Energy Consumers Australia;
(f) the role and function of state energy regulators;
(g) the statutory framework which supports consideration of stakeholder views and the public interest; and
(h) any other related matters.

1.9 The committee is required to report to the Senate by 20 December 2024.

Conduct of the inquiry

1.10 Details of the committee's establishment and its inquiry were published on the committee's website and the committee invited a number of organisations and individuals to lodge submissions. The committee received 87 submissions, which are listed at Appendix 1.

1.11 The committee also held five public hearings in Canberra:

- 23 October 2024;
- 29 October 2024;
- 30 October 2024;
- 31 October 2024; and
- 5 December 2024.

1.12 A list of witnesses who gave evidence at public hearings is available at Appendix 2.

1.13 In this report, references to *Committee Hansard* are to both proof and official transcripts. Page numbers may vary between proof and official transcripts.

Structure of this report

1.14 This report consists of five chapters. This chapter sets out general information outlining the establishment of the committee and conduct of the inquiry. It also provides background information relating to Australia's energy market, energy laws, market bodies, the path to decarbonising Australia's energy systems, and energy market reviews to date.

1.15 Chapter 2 discusses Australia's energy governance arrangements and laws. It discusses the high levels of energy regulation, amendments and state derogations and examines the effectiveness of the three market bodies: Australian Energy Market Operator (AEMO), Australian Energy Regulator (AER) and Australian Energy Market Commission (AEMC).

1.16 Chapter 3 focusses on the Integrated System Plan (ISP) planning, methodology, modelling and performance, as well as alternative modelling considerations.

1.17 Chapter 4 explores the uptake of consumer energy resources; costs to consumers and the community; and suggestions for improvement.

1.18 Chapter 5 is the concluding chapter with the committee's final observations and recommendations.

Acknowledgements

1.19 The committee thanks all those who contributed to the inquiry by making submissions, providing additional information, and appearing at public hearings.

Australia's energy market

1.20 Australia's national energy market began operating in 1998. The existing governance structure, which includes three market bodies, was created by the Energy National Cabinet Reform Committee to oversee the nation's energy market.[1] An overview of the laws, market bodies, and the role of the states in Australia's energy market is provided below.

Energy market laws

1.21 The Department of Climate Change, Energy, the Environment and Water (the Department) outlined that there are three overarching laws relevant to the governance of Australian energy markets, with South Australia as the lead

[1] Australian Energy Market Commission (AEMC), *National energy governance*, www.aemc.gov.au/regulation/national-governance (accessed 15 November 2024).

legislator: the National Electricity Law (NEL), National Gas Law (NGL), and National Energy Retail Law (NERL).[2]

1.22 The AEMC explained that in order to implement a national energy framework, an applied law scheme was adopted, where South Australia is the lead legislator, and each participating jurisdiction adopts legislation through application acts.[3]

1.23 AEMO noted that 'no one government alone can deliver on energy outcomes for Australian consumers' and observed that 'energy planning and regulation is one of Australia's most significant, and most complex, examples of co-operative federalism'.[4]

National Electricity Law

1.24 The NEL is set out in a schedule to the *National Electricity (South Australia) Act 1996*. It establishes obligations in the National Electricity Market (NEM) and for electricity networks.[5]

1.25 The NEM is comprised of five physically connected regions on Australia's east coast: Queensland, New South Wales (including the Australian Capital Territory), Victoria, Tasmania and South Australia. Each participating NEM state and territory, and the Commonwealth, has its own legislation applying the South Australian energy laws. Western Australia and the Northern Territory have their own electricity systems and regulatory arrangements and, as such, are not connected to the NEM.[6]

National Electricity Rules

1.26 The Department explained that the NEL is supported by the National Electricity Rules (NER) and the National Electricity (South Australia) Regulations. The NER govern the day-to-day operation of the NEM and the regulation of network infrastructure.[7]

1.27 The NER are made and amended under the NEL by the AEMC, or by the South Australian Energy Minister if consistent with a head of power in the NEL.[8]

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2 Department of Climate Change, Energy, the Environment and Water (DCCEEW), *Submission 12*, p. 1.

3 AEMC, *Submission 16*, [p. 3].

4 Australian Energy Market Operator (AEMO), *Submission 14*, p. 1.

5 DCCEEW, *Submission 12*, p. 1.

6 AEMC, *National Electricity Market*, www.aemc.gov.au/energy-system/electricity/electricity-system/NEM (accessed 15 November 2024).

7 DCCEEW, *Submission 12*, p. 1.

8 DCCEEW, *Submission 12*, p. 1.

1.28 In making the rules the AEMC is required to apply the National Electricity Objective. The rules govern the wholesale electricity market, the economic regulation of the services provided by monopoly transmission and distribution networks, and govern the way in which the AEMO manages power system security.[9]

1.29 Running to 1860 pages, the NER have evolved over time, through 217 versions to date, to address changes in the electricity sector.[10]

Northern Territory electricity legislation

1.30 As mentioned above, the Northern Territory has its own electricity law and rules which are different to those that apply to the NEM states.

1.31 In 2015, the Northern Territory passed the *National Electricity (Northern Territory) (National Uniform Legislation) Act 2015* (NT Electricity Act). The AEMC explained that the NT Electricity Act adopts a modified version of the NEL known as the National Electricity (NT) Law.[11]

1.32 Under the National Electricity (NT) Law, the AEMC may make a uniform rule or a differential rule with respect to the Northern Territory. A uniform rule is a rule that applies in the same way in all participating jurisdictions, including the Northern Territory. A differential rule is a rule that differs in how it applies to the Northern Territory and to the national electricity system in other participating jurisdictions.[12]

1.33 The AEMC also clarified that the NER applying in the Northern Territory is the current version of the NER as amended by the National Electricity (Northern Territory) (National Uniform Legislation) (Modification) Regulations 2016 made under section 13(2)(c) of the NT Electricity Act. Under the regulations, the AEMC must publish and maintain on its website an up-to-date copy of the NT version of the NER as in force from time to time.[13]

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9 AEMC, *National Electricity Rules*, NER Version 217 Summary - AEMC Energy Rules (accessed 26 November 2024).

10 AEMC, *National Electricity Rules*, National Electricity Rules | AEMC (accessed 26 November 2024).

11 AEMC, *National Electricity Rules (Northern Territory)*, www.aemc.gov.au/regulation/energy-rules/northern-territory-electricity-rules (accessed 27 November 2024).

12 AEMC, National Electricity Rules (Northern Territory), www.aemc.gov.au/regulation/energy-rules/northern-territory-electricity-rules (accessed 27 November 2024).

13 AEMC, *National Electricity Rules (Northern Territory)*, www.aemc.gov.au/regulation/energy-rules/northern-territory-electricity-rules (accessed 27 November 2024).

Western Australian electricity legislation

1.34 Western Australia's Wholesale Electricity Market (WEM) commenced in 2006 and is established under the Electricity Industry (Wholesale Electricity Market) Regulations 2004. It is governed by the Wholesale Electricity Market Rules.[14]

1.35 The WEM Rules detail the roles and functions of AEMO and other governance bodies and guide the operation of the market including the trading and dispatch of energy, the Reserve Capacity Mechanism and settlement.[15]

1.36 AEMO functions relating to the WEM are discussed further below in terms of its energy markets and energy systems functions.

National Gas Law

1.37 The NGL is established under the *National Gas (South Australia) Act 2008* and provides the governance framework, key obligations for access gas pipelines, and broader elements of the natural gas markets.

1.38 The NGL is supported by the National Gas Regulations and the National Gas Rules.

1.39 The NGL is applied across all Australian states and territories. However, Western Australia implements a modified version that focusses primarily on pipeline regulation to cater for specific market conditions in the region.[16]

1.40 The Department explained that the NGL establishes several market and regulatory functions, such as:

- **Economic Regulation of Gas Pipelines**: The NGL facilitates access to gas pipelines on reasonable terms across the East Coast, Northern Territory, and Western Australia.
- **Facilitated Trading Markets**: Specifically on the East Coast, the NGL establishes several trading mechanisms, including the Short-Term Trading Markets, Declared Wholesale Gas Market, Gas Supply Hub, Capacity Trading Platform, and Day Ahead Auction. These markets enhance liquidity and promote the efficient allocation of gas and pipeline services.
- **Transparency**: The NGL establishes various transparency measures, such as the Bulletin Board, Gas Statement of Opportunities (GSOO), and

[14] Government of Western Australia, *Wholesale Electricity Market*, www.wa.gov.au/organisation/energy-policy-wa/wholesale-electricity-market (accessed 27 November 2024.

[15] Government of Western Australia, *Wholesale Electricity Market Rules*, www.wa.gov.au/government/document-collections/wholesale-electricity-market-rules (accessed 27 November 2024).

[16] DCCEEW, *Submission 12*, p. 1.

the Victorian Gas Planning Report, along with gas price reporting which supports informed decision-making by market participants.[17]

National Energy Retail Law

1.41 The National Energy Retail Law (NERL) is the law set out in a schedule to the *National Energy Retail Law (South Australia) Act 2011*, which regulates supply and sale of energy to retail customers in New South Wales, South Australia, Tasmania, Queensland, and the Australian Capital Territory.[18]

1.42 The NERL is supported by the National Energy Retail Rules (NERR) and National Energy Retail Regulations. According to the Department, more detailed obligations are provided in the NERR, including consumer protection measures and basic terms and conditions for standard and market retail contracts. These contracts govern the relationships between customers, retailers and distributors.[19] Consumer protections provided by the NERL include the following:

- Requirements that retailers must meet before disconnecting a consumer's premises.
- Requirements to provide support and assistance to customers experiencing payment difficulty and financial hardship.
- Protections for customers requiring life support equipment.[20]

1.43 The NERL also provides mechanisms that customers can use to resolve complaints and disputes, where retailers and distributors must also have their own standard complaint and dispute resolution procedure, and must be a member of an energy ombudsman scheme.[21]

1.44 Further, the NERL sets out provisions for a Retailer of Last Resort scheme for participating jurisdictions and seeks to ensure continuity of supply to consumers in the event of retailer failure.[22]

National energy objectives

1.45 The Department explained that the national energy objectives guide energy market bodies in the decisions they make under energy law.[23] The impact of the objectives on the market bodies are discussed in their respective sections later in the chapter.

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17 DCCEEW, *Submission 12*, p. 1.

18 DCCEEW, *Submission 12*, p. 1.

19 DCCEEW, *Submission 12*, pp. 1–2.

20 DCCEEW, *Submission 12*, p. 2.

21 DCCEEW, *Submission 12*, p. 2.

22 DCCEEW, *Submission 12*, p. 2.

23 DCCEEW, *Submission 12*, p. 2.

1.46 The AER noted that in 2023, the Federal Minister for Climate Change and Energy, and the State and Territory Energy Ministers (together, the Energy Ministers) amended the energy laws to introduce an emissions reduction element into the national energy objectives.[24]

1.47 The energy objectives are as follows:

- The National Electricity Objective, as set out in the NEL:

  … to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to—

  (a) price, quality, safety, reliability and security of supply of electricity; and
  (b) the reliability, safety and security of the national electricity system; and
  (c) the achievement of targets set by a participating jurisdiction—

    (i) for reducing Australia's greenhouse gas emissions; or
    (ii) that are likely to contribute to reducing Australia's greenhouse gas emissions.[25]

- The National Gas Objective, as set out in the NGL:

  … to promote efficient investment in, and efficient operation and use of, covered gas services for the long term interests of consumers of covered gas with respect to—

  (a) price, quality, safety, reliability and security of supply of covered gas; and
  (b) the achievement of targets set by a participating jurisdiction—

    (i) for reducing Australia's greenhouse gas emissions; or
    (ii) that are likely to contribute to reducing Australia's greenhouse gas emissions.[26]

- The National Energy Retail Objective, as set out in the NERL:

  …to promote efficient investment in, and efficient operation and use of, energy services for the long term interests of consumers of energy with respect to—

  (a) price, quality, safety, reliability and security of supply of energy; and
  (b) the achievement of targets set by a participating jurisdiction—

    (i) for reducing Australia's greenhouse gas emissions; or
    (ii) that are likely to contribute to reducing Australia's greenhouse gas emissions.[27]

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24 Australian Energy Regulator (AER), *Submission 15,* p. 17.

25 *National Electricity (South Australia) Act 1996*, s. 7.

26 *National Gas (South Australia) Act 2008*, s. 23.

27 *National Energy Retail Law (South Australia) Act 2011*, s. 13.

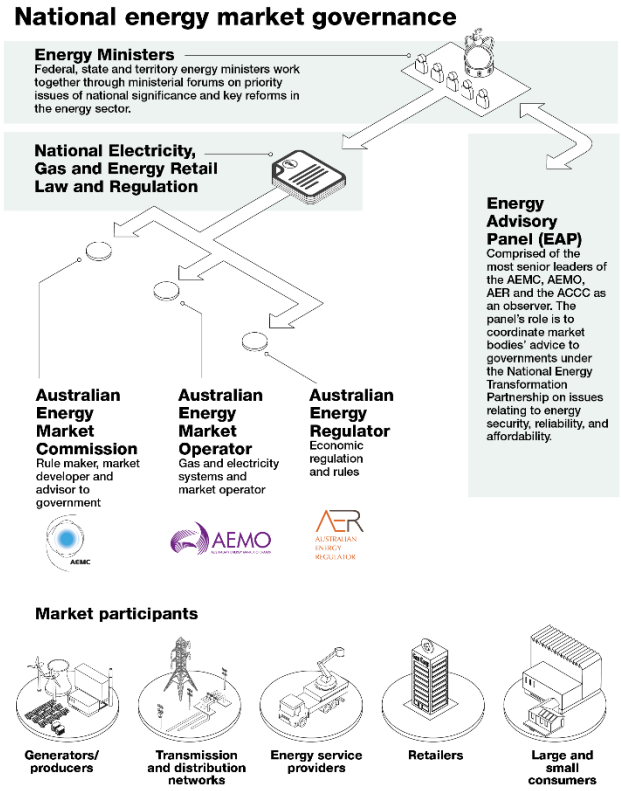
Role and functions of the market bodies

1.48 The Department noted that Australia's energy industry is governed by a framework known as the Australian Energy Market Agreement (AEMA), which is an intergovernmental agreement between the Commonwealth, states and territories.[28]

1.49 The Department further explained that the AEMA provides for three national energy market institutions that sit under the umbrella of the Energy and Climate Change Ministerial Council (ECMC).[29] The Department submitted that the structure of the market bodies 'is designed to provide for institutional separation of powers and responsibilities'.[30]

1.50 The below diagram provides an overview of Australia's national energy market system:

Figure 1.1 National energy market governance



Source: Australian Energy Regulator, Our role.

28 DCCEEW, *Submission 12*, p. 2.

29 DCCEEW, *Submission 12*, p. 2.

30 DCCEEW, *Submission 12*, p. 2.

Energy and Climate Change Ministerial Council

1.51 The ECMC, originally known as the Ministerial Council on Energy, was established in 2001. The current iteration, the ECMC, was established as a Committee of National Cabinet in September 2022.[31]

1.52 The ECMC is a forum for the Commonwealth, Australian states and territories, and New Zealand to work together on priority issues of national significance and key reforms in the energy and climate change sectors.[32]

1.53 It is chaired by the Energy Ministers, who are collectively responsible for the legislative architecture that establishes and governs the energy system.[33]

1.54 In addition to its role as a policy maker, the ECMC also has oversight of the energy market bodies that are responsible for the operation of the national energy markets. These bodies are the AEMC, AEMO and AER.[34] The ECMC has oversight of the Energy Advisory Panel (EAP),[35] which is discussed below.

Australian Energy Market Commission

1.55 The AEMC was established by the Parliament of South Australia and is an independent statutory body with responsibilities across Australia. It has reporting and governance requirements under certain South Australian legislation, as well as the South Australian Treasurer's instructions.[36]

1.56 The AEMC identified its core functions as making and amending rules under national energy legislation, conducting reviews and providing advice to energy ministers, including market development advice to governments.[37]

Rule-making and market development functions

1.57 The AEMC explained that it has rule-making and market development functions under the national energy laws (the NEL, the NGL and the NERL). It noted that the rules it makes have the force of law under the national energy laws, and are amended either by the AEMC itself, or in special and limited

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31 Professor Penelope Crossley, *Submission 58,* p. 3.

32 DCCEEW, *Energy and Climate Change Ministerial Council*, www.energy.gov.au/energy-and-climate-change-ministerial-council (accessed 27 November 2024).

33 Australian Energy Regulator, *Submission 15,* p. 1.

34 Professor Penelope Crossley, *Submission 58,* p. 3.

35 DCCEEW, *Energy and Climate Change Ministerial Council*, www.energy.gov.au/energy-and-climate-change-ministerial-council (accessed 27 November 2024).

36 AEMC, *Submission 16,* [p. 4].

37 AEMC, *Submission 16,* [p. 4].

circumstances where a head of power has been included under the energy laws, by the South Australian Minister for Energy and Mining.[38]

1.58 The AEMC noted that its decision-making is guided by the national energy objectives, in which it seeks to:

> …promote efficient investment in and efficient use of energy services for the long-term interest of energy consumers with respect to safety, security, reliability, quality, price and the achievement of emission reduction targets.[39]

1.59 The AEMC clarified the rule-making process by explaining that stakeholders can 'shape the design and regulation of the market' through participating in the rule change process, including by submitting rule change requests.

1.60 The AEMC noted a unique aspect of its role in which any party, except for the AEMC itself, can propose a change to the rules. The AEMC explained that it is only permitted to propose minor changes, such as corrections, to rules.[40]

1.61 The AEMC outlined that the rule change process begins by submitting a written request to the AEMC for a rule change, to which the AEMC will then initiate a rule change process where it seeks to engage with relevant stakeholders to encourage their participation and input. The outcome of a rule change project is contained in the AEMC's final rule determination.[41]

1.62 The AEMC explained that it can only make a rule change if it is satisfied that the rule will, or is likely to, contribute to the relevant national energy objectives – focusing on the long-term interest of consumers.[42]

Australian Energy Market Operator

1.63 AEMO is Australia's energy system and market operator, whose functions are prescribed in the law, rules and regulations that govern the energy sector.

1.64 AEMO was established in 2009 by the then Council of Australian Governments and is registered under the *Corporations Act 2001* as a member-based not-for-profit company limited by guarantee.[43] AEMO explained that its membership is shared between federal and state governments (60 per cent) and industry (40 per cent).[44]

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38 AEMC, *Submission 16,* [p. 3].

39 AEMC, *Submission 16,* [p. 1].

40 AEMC, *Submission 16,* [p. 13].

41 AEMC, *Submission 16,* [pp. 13–15].

42 AEMC, *Submission 16,* [p. 16].

43 AEMO, *Submission 14*, p. 2.

44 AEMO, *Submission 14*, p. 2.

1.65 According to AEMO, its purpose is to ensure 'secure, reliable, and affordable energy and to enable the energy transition for the benefit of all Australians'.[45] Its accountability and governance framework is 'underpinned' by the national energy objective of 'acting in the long-term interests of consumers'.[46] AEMO's governance arrangements are further discussed in Chapter 2.

1.66 AEMO's prescribed functions can be categorised into three groups:

- operating energy systems (electricity and gas);
- operating energy markets (electricity and gas); and
- planning and enabling the future energy system.[47]

Operating energy systems (electricity and gas)

1.67 AEMO operates Australia's electricity systems by managing the operations of the NEM and the WEM to meet prescribed standards of security and reliability.[48]

1.68 AEMO must maintain electricity system security and reliability for the NEM and WEM through 'effective operational planning and forecasting, congestion and grid modelling, management of power system conditions, and seasonal analysis and preparation'.[49]

1.69 AEMO also operates gas systems by managing the operations of the Victorian Gas Declared Transmission System and the Victoria Declared Wholesale Gas Market to maintain gas supply in Victoria. This includes 'demand forecasting, system security, safety and emergency response, gas quality, wholesale metering and gas supply adequacy'.[50]

1.70 AEMO also has powers and functions pertaining to the reliability and supply adequacy for the east coast gas systems.[51]

Operating energy markets (electricity and gas)

1.71 AEMO explained that it manages the wholesale electricity market operation functions for the NEM and the WEM, which includes settlement, billing, prudential, metering and retail market operations.[52]

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45 AEMO, *Submission 14*, p. 2.

46 AEMO, *Submission 14*, p. 6.

47 AEMO, *Submission 14*, p. 2.

48 AEMO, *Submission 14*, p. 3.

49 AEMO, *Submission 14*, p. 3.

50 AEMO, *Submission 14*, p. 3.

51 AEMO, *Submission 14*, p. 3.

52 AEMO, *Submission 14*, p. 3.

1.72 AEMO also manages and monitors the wholesale, retail and secondary trading gas markets across the east coast.[53]

Planning and enabling the future energy system

1.73 AEMO produces the biennial ISP, which it explains is produced after 'extensive consultation with industry, government and consumer advocates under national energy legislation'.[54]

1.74 According to AEMO, the ISP identifies 'an optimal development path of generation, storage and transmission investments' that are necessary to meet the energy needs of home and businesses throughout Australia's transition to net zero by 2050.[55] The ISP is further discussed in Chapter 3.

1.75 Other planning responsibilities include AEMO's development of planning documents, including, for example, the annual publication of technical and market data through the Electricity Statement of Opportunities and Gas Statement of Opportunities.[56]

1.76 Additionally, AEMO delivers reforms to the NEM wholesale and retail markets, as well as the WEM and east coast gas markets. It also undertakes participant registration and national grid connect processes to 'progress the connection of new generation assets to the NEM'.[57]

1.77 AEMO also has declared shared network (DSN) functions in Victoria. For example, it undertakes annual planning reviews, considers augmentations to the transmission network via the Regulatory Investment Test for Transmission (RIT-T) process, and procures transmission augmentations.[58]

Australian Energy Regulator

1.78 The AER is an independent Commonwealth statutory entity and decision-making body that regulates wholesale energy markets, retail energy markets and energy networks under national energy legislation and rules.[59]

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53 AEMO, *Submission 14*, p. 3.

54 AEMO, *Submission 14*, p. 3.

55 AEMO, *Submission 14*, p. 3.

56 AEMO, *Submission 14*, p. 4.

57 AEMO, *Submission 14*, p. 4.

58 AEMO, *Submission 14*, p. 4.

59 AER, *Submission 15*, pp. 1–2.

1.79 However, the AER noted that for the purposes of the *Public Governance, Performance and Accountability Act 2013*, it is a combined entity with the Australian Competition and Consumer Commission (ACCC).[60]

1.80 As such, the Chair of the ACCC is the accountable authority for the purposes of the *Public Governance, Performance and Accountability Act 2013*, and is also the head of the AER for the purposes of the *Public Service Act 1999*.[61] The AER explained that this means that the ACCC Chair is ultimately responsible for the financial performance of the AER.[62]

1.81 The AER advised that following agreement by the Australian Government and the Energy Ministers in 2023, the AER is preparing for full legal separation for the ACCC to become a separate non-corporate Commonwealth entity in 2025. This means the AER Board will become the accountable authority and the AER Chair will become the head of the agency.[63]

1.82 The AER's operations include regulating gas and electricity markets and/or networks in all states and territories, except for Western Australia. It focuses on ensuring a 'secure, reliable and affordable energy future for Australia' as it transitions to net zero emissions.[64]

1.83 The AER identified its core purpose as to 'ensure energy consumers are better off, now and in the future'.[65] It has a range of roles and key activities, which are explored below.

Compliance and enforcement

1.84 Through its compliance and enforcement activities, the AER has jurisdiction over:

- The relationships energy retailers, distributors and exempt suppliers have with their customers in retail markets.
- Network planning and the provision of monopoly transmission and distribution network services to customers and other market participants.
- Participation in wholesale markets for electricity and gas and the day-to-day operations of those markets.[66]

60 AER, *Submission 15*, p. 2.

61 AER, *Submission 15*, p. 2.

62 AER, *Submission 15*, p. 2.

63 AER, *Submission 15*, p. 2.

64 AER, *Submission 15*, p. 1.

65 AER, *Submission 15*, p. 1.

66 AER, *Submission 15*, p. 4.

1.85 The AER noted that its approach to compliance and enforcement aims to foster compliance and address non-compliance, with a focus on preventing harm. The AER also clarified that is has discretion over how it approaches compliance and enforcement, in which it uses 'a combination of tools' that it considers will 'deliver the best outcomes for consumers and the market'.[67]

Performance monitoring and reporting

1.86 The AER also monitors and reports on the performance of energy wholesale and retail markets, as well as network businesses.[68]

1.87 The AER explained that in wholesale electricity and gas markets, it monitors participant bidding and rebidding, market dispatch and prices, network constraints and outages, demand forecasts and forecasts of production and capacity.[69]

1.88 The AER also reports on wholesale market activity and the performance of retail energy markets and energy businesses. Further, the AER monitors network performance through various reports, such as its network performance and benchmarking reports.[70]

Energy network regulation

1.89 The AER noted that it is responsible for the economic regulation of over $115 billion worth of electricity transmission, distribution networks, gas transmission and distribution pipelines in all states and territories, except for Western Australia.[71]

1.90 The AER explained that it sets the maximum revenue amount that price regulated energy networks can earn, as well as the price it can charge consumers for regulated services annually.[72]

1.91 Further, price regulated network businesses submit revenue proposals to the AEMC approximately every five years, referred to as the 'reset process'. The AEMC reviews the proposals and makes decisions through this process by considering various factors, including the services proposed to be regulated and the quality of engagement with customers.[73]

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67 AER, *Submission 15,* p. 5.

68 AER, *Submission 15,* p. 6.

69 AER, *Submission 15,* p. 6.

70 AER, *Submission 15,* p. 6.

71 AER, *Submission 15,* p. 7.

72 AER, *Submission 15,* p. 7.

73 AER, *Submission 15,* p. 7.

1.92 The AER also publishes the Rate of Return Instrument, which sets the amount of revenue that electricity and gas network businesses can earn on the capital value of their network investments.[74]

1.93 There are three core incentive schemes that the AER must apply in regulating monopoly electricity and gas networks, which are the:

- Efficiency benefit sharing scheme (EBSS) - provides networks with additional financial incentives to undertake efficient operating expenditure over time.
- Capital expenditure sharing scheme (CESS) - provides networks with additional financial incentives to undertake efficient capital expenditure over time, to ensure that only efficient capital expenditure is added to the regulated asset bases.
- Service target performance incentive scheme (STPIS) - provides electricity network service providers with additional financial incentives for maintaining and improving network performance, to the extent that consumers are willing to pay for such improvements.[75]

Consumers

1.94 The AER underlines that 'consumers are at the heart of everything' that it does. It noted that it works to ensure energy consumers have access to a reliable and secure market, where they pay no more than necessary for energy to their homes and businesses.[76]

1.95 Through its retail energy market regulation function, the AER also:

- Sets the Default Market Offer to 'protect consumers from unjustifiably high prices', which is a price cap on standing energy contracts. The AER also provides a price comparison website, 'Energy Made Easy', to assist consumers in finding 'the best energy contract for them';
- Approves customer hardship policies that are required by energy retailers;
- Administers a retailer of last resort scheme in the case where an energy retailer fails;
- Monitors and enforces compliance with energy retail law and rules;
- Approves retailer authorisations and exemptions; and
- Administers the retailer reliability obligation.[77]

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74 AER, *Submission 15,* p. 7.

75 AER, *Submission 15,* pp. 7–8.

76 AER, *Our role,* www.aer.gov.au/about/aer/our-role#our-functions (accessed 27 November 2024).

77 AER, *Our role,* www.aer.gov.au/about/aer/our-role#our-functions (accessed 27 November 2024).

Energy Advisory Panel

1.96 The EAP was established in 2023 by the Energy Ministers after the disbandment of the Energy Security Board (discussed further below).[78] The EAP is a regular meeting of the three market bodies (AEMC, AEMO and the AER), as well as the ACCC and senior official observers from jurisdictions, in which matters relating to key energy market issues are discussed.[79]

1.97 According to the AER, the EAP provides 'whole of system oversight throughout the transition to net zero emissions and enables the three market bodies to provide co-ordinated advice to governments on issues relating to the security, reliability, and affordability of Australia's east coast energy system'.[80]

Energy Consumers Australia

1.98 Energy Consumers Australia (ECA) is a not-for-profit company limited by guarantee. It was established by the Council of Energy Ministers (an earlier iteration of the ECMC) in 2015 to 'promote the long-term interests of Australian consumers to decision makers and industry'.[81]

1.99 The South Australian Energy Minister is the only member of the ECA and engages with the Energy Ministers on governance arrangements.[82]

1.100 ECA explained that it promotes the long-term interest of households and small businesses through the following activities:

- Researching consumer expectations, values and needs for the energy market;
- Engaging in energy sector processes;
- Funding work by other organisations that provide evidence for system changes that will benefit households and small businesses;
- Working with other organisations to promote consumer needs; and
- Helping to build the capacity of other organisations to be able to advocate on behalf of consumer groups.[83]

1.101 ECA is funded by the levies that consumers in NEM states pay on their energy bills, which is recovered by AEMO in line with the NER and NGR. The ECA

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78 Professor Penelope Crossley, *Submission 58,* p. 12.

79 AEMC, *Submission 16,* [p. 3].

80 AER, *Submission 15,* p. 2.

81 Energy Consumers Australia (ECA), *Submission 13,* p. 2.

82 DCCEEW, *Submission 12,* p. 5.

83 ECA, *Submission 13,* p. 2.

noted that this equates to approximately 0.03 per cent of an average household electricity bill.[84]

1.102 The ECA's grants program funds 'high quality, innovative research and advocacy initiatives that have the potential to deliver outcomes that will benefit the long-term interests of energy consumers in the National Energy Market'.[85]

1.103 The ECA noted that the projects that it funds also informs the advocacy work that it conducts on behalf of households and small businesses.[86]

State energy regulators

1.104 The Department noted that state energy regulators also play a role in the economic regulation of energy within Australia. It explained that because the AER does not regulate energy within Western Australia, the Economic Regulation Authority regulates the wholesale and retail energy markets and networks in the state.[87]

1.105 The Department also noted that the retail energy sector and consumer protections in the Northern Territory and Victoria are regulated by each jurisdictions' respective regulator through licence schemes.[88]

1.106 In Victoria, the Essential Services Commission Victoria regulates the retail energy section under the Victorian Energy Retail Code. In the Northern Territory, the Utilities Commission of the Northern Territory regulates the retail sector under the *Electricity Reform Act 2000.*[89]

1.107 The Department also pointed to state planners, such as VicGrid in Victoria and EnergyCo in New South Wales, as groups that play critical roles in each jurisdiction.[90]

Decarbonising Australia's energy systems

1.108 The Department explained that under the Paris Agreement, a legally binding international treaty on climate change,[91] Australia has committed to the 'global goal of holding the increase in global average temperatures to well below

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84 ECA, *Submission 13*, p. 3.

85 ECA, *Submission 13*, p. 5.

86 ECA, *Submission 13*, p. 5.

87 DCCEEW, *Submission 12*, p. 6.

88 DCCEEW, *Submission 12*, p. 6.

89 DCCEEW, *Submission 12*, p. 6.

90 DCCEEW, *Submission 12*, p. 6.

91 United Nations Climate Change, *The Paris Agreement*, https://unfccc.int/process-and-meetings/the-paris-agreement (accessed 19 November 2024).

2 degrees Celsius of warming and pursuing efforts to keep warming to less than 1.5 degrees Celsius'.[92]

1.109 In line with these commitments, Australia enshrined its greenhouse gas emissions reduction targets in the *Climate Change Act 2022* (Cth). Under section 10, Australia's targets are reducing Australia's net greenhouse gas emissions to 43 per cent below 2005 levels by 2030, and reducing Australia's net greenhouse gas emissions to zero by 2050.[93]

1.110 As such, the Australian Government is developing the 'Net Zero Plan' to guide the transition to these legislated targets. The Department noted that the plan will 'cover all major parts of the economy' and 'articulate Australia's transition to net zero'.[94]

1.111 Alongside the Net Zero Plan, the government will also 'set an ambitious and achievable 2035 emissions reduction target'. Further, the Department also recognised 'the source and nature of emissions varies across and within sectors' and so too do the 'challenges and opportunities of reducing those emissions'.[95]

1.112 As such, six sectoral emissions reduction plans will support the Net Zero Plan. The six sectors that will have plans are:

- electricity and energy;
- transport;
- industry;
- agriculture and land;
- resources; and
- the built environment.[96]

1.113 The Department clarified that the Electricity and Energy Sectoral Plan will cover the supply of electricity, liquid fuels and gas and that sectoral plans will also consider key enabling technologies. These technologies will support emissions reduction or removals, which includes technologies like:

- carbon capture, use and storage;
- electrification and renewable electricity;
- energy efficiency; and

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92 DCCEEW, *Net Zero*, www.dcceew.gov.au/climate-change/emissions-reduction/net-zero (accessed 19 November 2024).

93 *Climate Change Act 2022*, para. 10(1)(a) and 10(1)(b).

94 DCCEEW, *Net Zero*, www.dcceew.gov.au/climate-change/emissions-reduction/net-zero (accessed 19 November 2024).

95 DCCEEW, *Net Zero*, www.dcceew.gov.au/climate-change/emissions-reduction/net-zero (accessed 19 November 2024).

96 DCCEEW, *Net Zero*, www.dcceew.gov.au/climate-change/emissions-reduction/net-zero (accessed 19 November 2024).

- gas for firming renewables.[97]

1.114 On 14 March 2024, a discussion paper on the Electricity and Energy Sector Plan was released for consultation with stakeholders and members of the community. The feedback received throughout the consultation, which closed on 26 April 2024, will be used to help inform the development of the Electricity and Energy Sector Plan.[98]

1.115 The Climate Change Authority (CCA) was also tasked with providing advice to government on the sectoral pathways and the most prospective technologies for cutting emissions in each sector.[99]

1.116 In its Sectoral Pathways Review, the CCA's advice on the Electricity and Energy Sector found that:

> Rapid decarbonisation and expansion of the electricity and energy sector is the key to meeting Australia's economy-wide emissions reduction targets. There is a clear and viable decarbonisation pathway for the sector that relies on known technologies to deliver very large emissions reductions and facilitate reductions in other sectors.[100]

Energy governance reviews

1.117 There are several Australian energy governance reviews that have been conducted in recent years that closely relate to this inquiry. A brief overview of three key reviews is provided below.

The Vertigan review

1.118 In 2015, Dr Michael Vertigan AC, Professor George Yarrow and Mr Euan Morton (the panel) presented the Final Report of the Review of Governance Arrangements for Australian Energy Markets (the Vertigan Review) to the Council of Australian Governments (COAG) Energy Council (the Energy Council).[101]

1.119 The report considered the performance of the Australian energy markets' governance arrangements. It made recommendations to the Energy Council on

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97 DCCEEW, *Net Zero*, www.dcceew.gov.au/climate-change/emissions-reduction/net-zero (accessed 19 November 2024).

98 DCCEEW, *Electricity and Energy Sector Plan Discussion Paper*, https://consult.dcceew.gov.au/electricity-and-energy-sector-plan-discussion-paper (accessed 19 November 2024).

99 DCCEEW, *Net Zero*, www.dcceew.gov.au/climate-change/emissions-reduction/net-zero (accessed 5 December 2024).

100 Climate Change Authority, *Sector Pathways Review, Part 1, Electricity and Energy*, October 2024, p. 2.

101 Dr Michael Vertigan AC, Professor George Yarrow, Mr Euan Morton, *Review of Governance Arrangements for Australian Energy Markets – Final Report*, October 2015, p. 3. Note, the COAG Energy Council was an earlier iteration of the ECMC.

potential areas for improvement within the market bodies and the Energy Council's oversight of these bodies.[102]

1.120 The panel concluded that 'the division of functions established by the current governance arrangements for Australian energy markets is fundamentally sound' and noted that the governance arrangements are 'amongst best practice internationally'.[103]

1.121 The panel also identified areas for improvement within Australia's energy market structure to adapt to emerging challenges that were foreshadowed by two themes that emerged through consultations:

- the pace of change in the energy sector is arguably unprecedented; and
- a 'strategic policy deficit' exists which has led to diminished clarity and focus in roles, fragmentation and a diminished sense of common purpose.[104]

1.122 The report's recommendations relating to the three market bodies (AEMC, AER and AEMO) are outlined below.

AEMC

1.123 The panel noted that the AEMC's role as a rule maker and advisor to the Energy Council was increasingly important in 'the current dynamic environment' and as such recommended that its role be 'reinforced through greater reliance on this institution for the development of strategic advice'.[105]

1.124 Further, the report recommended that the AEMC should 'increase the accountability and timeliness of its processes and develop a mechanism to terminate work streams that are no longer appropriate'.[106]

1.125 Additionally, the report recommended that the AEMC should publish performance metrics, as well as implementing and publishing best practice guidelines on its processes.[107]

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[102] Dr Michael Vertigan AC, Professor George Yarrow, Mr Euan Morton, *Review of Governance Arrangements for Australian Energy Markets – Final Report*, October 2015, p. 3.

[103] Dr Michael Vertigan AC, Professor George Yarrow, Mr Euan Morton, *Review of Governance Arrangements for Australian Energy Markets – Final Report*, October 2015, p. 7.

[104] Dr Michael Vertigan AC, Professor George Yarrow, Mr Euan Morton, *Review of Governance Arrangements for Australian Energy Markets – Final Report*, October 2015, p. 7.

[105] Dr Michael Vertigan AC, Professor George Yarrow, Mr Euan Morton, *Review of Governance Arrangements for Australian Energy Markets – Final Report*, October 2015, p. 8.

[106] Dr Michael Vertigan AC, Professor George Yarrow, Mr Euan Morton, *Review of Governance Arrangements for Australian Energy Markets – Final Report*, October 2015, p. 8.

[107] Dr Michael Vertigan AC, Professor George Yarrow, Mr Euan Morton, *Review of Governance Arrangements for Australian Energy Markets – Final Report*, October 2015, p. 8.

AER

1.126 The panel considered that the AER board 'lacks autonomy over the organisations as it is not in full control of the resources required to achieve its tasks and lacks full independence in decision-making'. It also found that the culture is 'not conducive to its regulatory role, due to the fact that the culture and skills required to regulate an industry differ from those of a competition law enforcement agency'.[108]

1.127 As such, it was recommended that the AER be established as an independent organisation by separating it from the ACCC to strengthen its performance.[109]

1.128 As discussed above, the AER is preparing for full legal separation from the ACCC to become a sperate non-corporate Commonwealth entity in 2025.[110]

1.129 The panel also believed that 'periodic external performance reviews of the AER should be initiated' every three to five years by a panel of experts appointed by the Energy Council.[111]

AEMO

1.130 The panel noted that AEMO plays an important and valuable role as the independent system and market operator and considered that AEMO should 'be more clearly focused on developing procedures for the purposes of market operation within the energy market'.[112]

1.131 The panel also considered that AEMO should only undertake tasks outside its core responsibilities 'where they do not conflict with those responsibilities and are undertaken on a contractual basis'.[113]

1.132 The panel recommended that the Energy Council issue a 'statement of role' for AEMO, which clearly specifies its core role, including processes for accessing

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[108] Dr Michael Vertigan AC, Professor George Yarrow, Mr Euan Morton, *Review of Governance Arrangements for Australian Energy Markets – Final Report*, October 2015, p. 8.

[109] Dr Michael Vertigan AC, Professor George Yarrow, Mr Euan Morton, *Review of Governance Arrangements for Australian Energy Markets – Final Report*, October 2015, p. 8.

[110] AER, *Submission 15*, p. 2.

[111] Dr Michael Vertigan AC, Professor George Yarrow, Mr Euan Morton, *Review of Governance Arrangements for Australian Energy Markets – Final Report*, October 2015, p. 8.

[112] Dr Michael Vertigan AC, Professor George Yarrow, Mr Euan Morton, *Review of Governance Arrangements for Australian Energy Markets – Final Report*, October 2015, pp. 8–9.

[113] Dr Michael Vertigan AC, Professor George Yarrow, Mr Euan Morton, *Review of Governance Arrangements for Australian Energy Markets – Final Report*, October 2015, p. 9.

AEMO's expertise in market and systems operations and the arrangements under which it can undertake other activities.[114]

The Finkel review

1.133 In 2016, the Energy Ministers agreed to an independent review of the national electricity market to 'take stock of its current security and reliability and to provide advice to governments on a coordinated national reform blueprint'.[115]

1.134 Dr Alan Finkel AO, Australia's then Chief Scientist, was the Chair of the expert panel that conducted the review known as the 'Independent Review into the Future Security of the National Electricity Market' (the Finkel review). Ms Karen Moses FAICD, Ms Chloe Munro, Mr Terry Effeney and Professor Mary O'Kane AC were members of the expert panel.[116]

1.135 The expert panel's final report emphasised that Australia's electricity system is in transition and that the country is 'at a critical turning point'. It noted that if managed well 'Australia will benefit from a secure and reliable energy future', but if managed poorly, Australia's 'energy future will be less secure, more unreliable and potentially very costly'.[117]

1.136 As such, the report made recommendations centring around four key outcomes: increased security, future reliability, rewarding consumers, and lower emissions. The report noted that the outcomes are underpinned by three pillars of an orderly transition, better system planning and stronger governance.[118]

1.137 Specifically, the report identified three key components of stronger governance:

- A new 'Energy Security Board' (ESB) to drive the implementation of the report's vision.
- An annual 'Health of the National Electricity Market' report by ESB to track the performance of the system, the risks it faces, and opportunities for improvement.

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[114] Dr Michael Vertigan AC, Professor George Yarrow, Mr Euan Morton, *Review of Governance Arrangements for Australian Energy Markets – Final Report*, October 2015, p. 13.

[115] DCCEEW, *Independent Review into the Future Security of the National Electricity Market*, www.dcceew.gov.au/energy/markets/independent-review-future-security-nem (accessed 19 November 2024).

[116] DCCEEW, *Independent Review into the Future Security of the National Electricity Market*, www.dcceew.gov.au/energy/markets/independent-review-future-security-nem (accessed 19 November 2024).

[117] Expert Panel on the Independent Review into the Future Security of the National Electricity Market, *Independent Review into the Future Security of the National Electricity Market: Blueprint for the Future*, June 2017, p. 5.

[118] Expert Panel on the Independent Review into the Future Security of the National Electricity Market, *Independent Review into the Future Security of the National Electricity Market: Blueprint for the Future*, June 2017, p. 5.

- Strengthening, resourcing and making the market bodies more effective through the coordination provided by the ESB.[119]

1.138 The ESB was established by the Energy Ministers in August 2017 to coordinate the implementations of the report's recommendations.[120] However, as mentioned above, it has since been disbanded and replaced by the EAP.[121]

1.139 The final report also recommended that better system planning should involve AEMO having a stronger role in planning the future transmission network, including through the development of a NEM-wide integrated grid plan to inform future decisions.[122] This integrated grid plan is the ISP that AEMO now produces.[123]

The Edwards review

1.140 In 2017, the former Energy Council accepted the recommendations of the Finkel review, which included the recommendation to establish the ESB. At the time, the Energy Council also agreed that the ESB's operation would be subject a three-year review.[124]

1.141 As such, in June 2020, Mr Rhys Edwards provided his Review of the Energy Security Board (the Edwards Review) to the Energy Ministers.[125]

1.142 The report considered the performance of the ESB and recommended that the ESB only remain in place until the end of 2021 to 'support the transition of Australian energy markets principally through the provision of advice to Energy Ministers on the long term, fit-for-purpose market framework for modifying the NEM post 2025'.[126]

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119 Expert Panel on the Independent Review into the Future Security of the National Electricity Market, *Independent Review into the Future Security of the National Electricity Market: Blueprint for the Future*, June 2017, [p. 20].

120 Energy Security Board, *Who is the Energy Security Board?*, https://esb-post2025-market-design.aemc.gov.au/who-is-the-energy-security-board (accessed 19 November 2024).

121 Professor Penelope Crossley, *Submission 58*, p. 12.

122 Expert Panel on the Independent Review into the Future Security of the National Electricity Market, *Independent Review into the Future Security of the National Electricity Market: Blueprint for the Future*, June 2017, p. 5.

123 AEMO, *National Transmission Network Development Plan*, https://aemo.com.au/energy-systems/major-publications/integrated-system-plan-isp/national-transmission-network-development-plan-ntndp (accessed 19 November 2024).

124 Mr Rhys Edwards, *Review of Energy Security Board*, June 2020, p. 6.

125 Mr Rhys Edwards, *Review of Energy Security Board*, June 2020, p. 6.

126 Mr Rhys Edwards, *Review of Energy Security Board*, June 2020, p. 4.

1.143 Mr Edwards deemed that this time period would enable the Energy Ministers to make all required decisions in line with the ESB's project timetable and work program, and also allow for a six-month transition and wind up of the ESB.[127]

1.144 In the review, Mr Edwards also noted that the period of time since the ESB's existence illustrated the desirability for a forum that brings the three market bodies together to:

> … help integrate the interlocking responsibilities for overall national energy security and enable a formulation of a single coherent and collaborative approach to strategic policy and market development advice to Ministers.[128]

1.145 As such, Mr Edwards suggested that the forum could be reinvigorated with appropriate representation from Senior Energy Officials.[129]

1.146 As discussed above, the ESB was subsequently disbanded, and the Energy Advisory Panel was established in 2023 by the Energy Ministers.[130]

Review of the Integrated System Plan

1.147 In October 2022, the Energy Ministers agreed to review to the AEMO's ISP framework. The purpose of the review was to consider whether the scope of the ISP remained appropriate in the context of Australia's decarbonisation objectives, energy security and the management of energy costs.[131]

1.148 The review focussed on the following key themes:

- supporting emissions reduction;
- integrating gas and electricity planning;
- enhancing energy demand considerations;
- transformation of Australia's energy mix; jurisdictional policy interactions; and
- the timely delivery of ISP projects.[132]

1.149 The review made 15 recommendations and the ECMC provided its response in April 2024.[133] The response outlines the range of actions that Energy Ministers have agreed to take in response to the recommendations of the review, including in relation to integrating gas into the ISP; enhanced demand forecasting; better data on industrial and consumer electrification; coal-fired generation shutdown

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127 Mr Rhys Edwards, *Review of Energy Security Board*, June 2024, p. 6.

128 Mr Rhys Edwards, *Review of Energy Security Board*, June 2024, p. 7.

129 Mr Rhys Edwards, *Review of Energy Security Board*, June 2024, p. 7.

130 Professor Penelope Crossley, *Submission 58*, p. 12.

131 DCCEEW, *Review of the Integrated System Plan – Final Report (January 2024)*, 2024, p. ii.

132 DCCEEW, *Review of the Integrated System Plan – Final Report (January 2024)*, 2024, p. 6.

133 DCCEEW, *Response to the Review of the Integrated System Plan*, 2024.

scenarios; improving locational information, clarifying policy inclusions; and incorporating community sentiment in the development of the next ISP.[134]

1.150 The ECMC noted that the 'implementation of the actions outlined in this report will require changes to the legislative framework that governs the development of the ISP, and establishment of enhanced data and modelling approaches'.[135]

1.151 This review was noted in passing by the Department but no other evidence was given, nor was it provided to the committee for its consideration. Given the significance of such a review, in particular as it was conducted instead of the planned AEMC review, the committee is at a loss to understand why it was not raised in evidence. For completeness the Chair tabled it on becoming in possession of the review.

1.152 The committee noted that although the Review was complete early 2024 none of the recommendations were incorporated in the 2024 ISP (or its Draft) and that this was a missed opportunity.

National Electricity Market (NEM) wholesale market settings review

1.153 In November 2024, the Australian Government announced a review of the NEM wholesale market settings by an independent expert panel supported by the Department.[136]

1.154 The objective of the review is to recommend wholesale market settings to promote investment in renewable generation and storage capacity in the NEM following the conclusion of Capacity Investment Scheme tenders in 2027.[137]

1.155 The independent expert panel is expected to deliver its final recommendations to government and the ECMC in late 2025.[138]

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134 DCCEEW, *Response to the Review of the Integrated System Plan*, 2024, pp. 6–12.

135 DCCEEW, *Response to the Review of the Integrated System Plan*, 2024, p. 12.

136 DCCEEW, *National Electricity Market wholesale market settings review*, November 2024, National Electricity Market wholesale market settings review - DCCEEW (accessed 29 November 2024).

137 DCCEEW, *National Electricity Market wholesale market settings review*, November 2024, National Electricity Market wholesale market settings review - DCCEEW (accessed 29 November 2024).

138 DCCEEW, *National Electricity Market wholesale market settings review*, November 2024, National Electricity Market wholesale market settings review - DCCEEW (accessed 29 November 2024).

Chapter 2
Governance

2.1 Evidence to the committee reflected a broad range of concerns about Australia's energy governance arrangements and laws. This chapter discusses:

- whether Australia's energy market laws and regulations are fit for purpose, with consideration of amendments to rules and regulations, as well as state derogations;
- the effectiveness and appropriateness of the three market bodies governance arrangements and functions: the Australian Energy Market Operator (AEMO), the Australian Energy Regulator (AER), and the Australian Energy Market Commission (AEMC); and
- the views expressed by inquiry participants in relation to the possibility of a review of Australia's energy market governance arrangements and laws.

Energy market laws

2.2 Inquiry participants discussed matters relating to Australia's three key energy market laws – the National Electricity Law (NEL), National Gas Law (NGL), National Energy Retail Law (NERL) and associated regulations.

2.3 This included concerns that the laws are outdated, as well as discussions concerning the high volume of amendments to the regulations and state derogations.[1] These matters are discussed in turn below.

Outdated and unfit for purpose

2.4 Several inquiry participants noted that Australia's energy market laws were initiated in the early 1990s and are consequently outdated.[2]

2.5 Professor Penelope Crossley, Professor of Energy Law at the University of Sydney, told the committee of the change that the National Electricity Market (NEM) has seen in recent years:

> Our energy regulatory framework was designed at a time when over 99 per cent of energy generated within the NEM came from fossil fuel generators, and we were seeking to introduce competition into the market through the promised privatisation and unbundling of the former state-owned energy

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1 See, for example, Australian Energy Council, *Submission 2,* pp. 1–2; Renew Illawarra Network, *Submission 5,* p. 3; Nexa Advisory, *Submission 26,* p. 5; Energy and Water Ombudsman Victoria, *Submission 35,* [p. 4]; ACOSS, *Submission 52,* Attachment 1, p. 16; Professor Penelope Crossley, *Submission 58,* p. 6, 14 and 15; Dr Ron Ben-David, *Submission 64,* p. 9.

2 See, for example, Renew Illawarra Network, *Submission 5,* p. 3; Institute of Public Affairs, *Submission 44,* p. 1; ACOSS, *Submission 52,* Attachment 1, p. 16; Professor Penelope Crossley, *Submission 58,* p. 14.

> corporations … In the last year, we have seen 38.4 per cent of all energy generated within the NEM as renewable generation.[3]

2.6 The Grattan Institute similarly reflected that the laws governing Australia's energy markets 'reflect an era that has now passed' as Australia's 'current supervisory framework over the electricity and gas systems was designed for the energy challenges of the 1990s, an era of micro-economic reform, privatisation, competition, and regulation of natural monopolies'.[4]

2.7 It elaborated that at the inception of the NEM in 1998, energy markets were in a steady state and 'the technology mix for electricity (coal, some gas, and a couple of large hydro facilities) was known with near-certainty'.[5] The Grattan Institute further observed that:

> Gas and coal provided industrial heat, and gas provided home heating. Almost all cars ran on petrol or diesel. Demand growth was predictable and stable, and largely a function of GDP growth. Price reductions were gained through competitive tension and by operating existing assets more efficiently. Operational and investment risks didn't vary much, and were well-understood.[6]

2.8 Now, as the Grattan Institute explained, the physical energy system is changing 'in ways that were not foreseen by the reformers of the 1990s'. It identified that '[t]echnology has changed, demand patterns are different, price signals come as much from outside the market as within it, and consumers are now active market participants'.[7]

2.9 The Grattan Institute further observed that 'the rise of wind and solar generation has challenged three assumptions that underpinned the original design of the NEM'. It outlined the consequent challenges for the NEM as follows:

- Plan and build new transmission at a scale and pace not seen before.
- Ensure that the market provides pricing or other financial signals for investment in dispatchable supply capacity to support a system largely built on weather-dependent wind and solar generation.
- Effectively and efficiently integrate the energy resources (solar and batteries) that consumers are installing behind the meters.[8]

2.10 This means, according to the Grattan Institute, that there is a need for transmission to be built at a greater pace and scale, for signals to be given for investment in dispatchable supply capacity in a market predominated by

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3 Professor Penelope Crossley, *Committee Hansard,* 31 October 2024, p. 22.

4 Grattan Institute, *Submission 48,* p. 8.

5 Grattan Institute, *Submission 48,* p. 8.

6 Grattan Institute, *Submission 48,* p. 8.

7 Grattan Institute, *Submission 48,* p. 8.

8 Grattan Institute, *Submission 48,* p. 10.

variable renewable energy (VRE), and for consumer energy resources (CER) to be efficiently integrated into this system.[9]

2.11 The UNSW Collaboration on Energy and Environmental Markets similarly underlined two fundamental shifts specifically within the NEM: a greater desire to reduce greenhouse gas emissions associated with electricity generation and a dramatic reduction in the last two decades of renewable energy costs.[10]

2.12 The UNSW Collaboration on Energy and Environmental Markets raised that despite these 'transformative' shifts within the NEM, there has been 'little change' to the governance arrangements or institutional settings to ensure that the system is better equipped to respond to a 'rapidly changing system'.[11]

High volume of amendments and derogations

2.13 Some inquiry participants observed that the energy market is also characterised by a high volume of regulations.[12] For instance, Dr Ron Ben-David, an associate of the Monash Energy Institute and Monash Sustainable Development Institute, explained that the overarching legislation empowers the market bodies (AEMO, AER, and AEMC) to create rules and regulations 'to enliven the national energy objectives'.[13] Dr Ben-David noted that these instruments are more flexible than the overarching legislation which 'require complex parliamentary agreements to amend'.[14]

2.14 However, Dr Ben-David considered that this flexibility has resulted in a 'stream of never-ending amendments' due to the market bodies making changes to reflect 'contemporary regulator and industry priorities, as well as ongoing market developments'.[15]

2.15 Australian Financial Markets Association similarly observed that the collective rules governing the energy market have substantially grown over the past decade and that the rules 'currently come to just under 3000 pages with the NER coming to over 1900 pages'.[16] Australian Financial Markets Australia concluded

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9 Grattan Institute, *Submission 48,* p. 10.

10 UNSW Collaboration on Energy and Environmental Markets, *Submission 80,* p. 3.

11 UNSW Collaboration on Energy and Environmental Markets, *Submission 80,* p. 3.

12 See, for example, Professor Bruce Mountain, *Submission 8,* p. 4; Professor Penelope Crossley, *Submission 58,* pp. 5–6; Dr Ron Ben-David, *Submission 64,* p. 9; Australian Financial Markets, *Submission 66,* [p. 4].

13 Dr Ron Ben-David, *Submission 64,* p. 9.

14 Dr Ron Ben-David, *Submission 64,* p. 9.

15 Dr Ron Ben-David, *Submission 64,* p. 9.

16 Australian Financial Markets Association, *Submission 66,* [p. 4].

that the growth of the rules has resulted in 'substantial duplication' and 'unnecessary bulk and complexity'.[17]

2.16 In addition to a high volume of regulation, Professor Crossley also observed that states 'are increasingly choosing to derogate, or diverge, from these cooperative legislative schemes to better suit their specific circumstances, policy objectives and local conditions'.[18]

2.17 Mr Tony Wood, Energy and Climate Change Program Director at the Grattan Institute, told the committee that derogations are a major challenge:

> One of the challenges we have right now is that the systems are awash with derogations from the rules, and that's not a great place to be. We're getting inconsistent policies, and industry just hates it at the moment.[19]

2.18 Professor Crossley drew the committee's attention to research published by the AEMC in 2023, which noted that there have been over '400 derogations identified to the suite of regulations that make up the National Energy Retail Law, the National Energy Retail Rules, the National Electricity Rules and the National Gas Rules'.[20]

2.19 Professor Crossley also observed that 'over one 12 day period earlier in the year, 4 separate versions of the NER applied, with one version (212) only in force for 3 days'. Professor Crossley concluded that the 'frequency of piecemeal changes' coupled with the 'hundreds of State and Territory derogations' amplifies the 'problems associated with the complex regulatory and institutional arrangement'.[21]

Investment Pricing Signals

It is widely accepted that the business case for new utility scale solar is being degraded by both low demand and high supply during the middle of the day causing low or negative wholesale prices. While this may have 'network curtailment' as a part of the problem, the larger problem is 'economic curtailment' which is generators choosing not to bid energy into the wholesale market. New transmission is not a solution for economic curtailment.

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17 Australian Financial Markets Association, *Submission 66,* [p. 4].

18 Professor Penelope Crossley, *Submission 58,* p. 15.

19 Mr Tony Wood, Program Director, Energy and Climate Change, Grattan Institute, *Committee Hansard,* 31 October 2024, p. 20.

20 Professor Penelope Crossley, *Submission 58,* p. 15.

21 Professor Penelope Crossley, *Submission 58,* p. 6.

> Likely solutions could include storage to store excess energy and sell in to the market when demand is higher or find demand side responses.
>
> A solution that would have the largest impact would be to change electric hot water pricing from midnight to midday. Hot water is one of the biggest loads in the NEM and therefore could have significant impacts on the supply / demand curve addressing the degradation of investment signals and saving consumers money.
>
> While this is being trialled it is a an urgently needed remedy that could be instigated much faster than currently planned. Notably it is not mentioned in the ISP.[22]

Governance of Australia's energy market bodies

2.20 As discussed in Chapter 1, the Australian Energy Market Agreement (AEMA) is an intergovernmental agreement between the Commonwealth, states and territories that provides for the three national energy market institutions under the umbrella of the Energy and Climate Change Ministerial Council (ECMC).[23]

2.21 The Australian Energy Council noted that the AEMA was last amended in December 2013. It explained that under the AEMA, the market bodies' governance roles were intentionally separated along the following lines:

- AEMC – responsible for market design and rule changes.
- AER – responsible for economic regulation, market monitoring and compliance.
- AEMO – responsible for market/system operation.[24]

2.22 The Australian Energy Council further observed that this separation represented 'best-practice governance, providing confidence for investors and consumers in the roles and responsibilities of each body'.[25]

2.23 The institutional and governance structure of the energy market is illustrated in the figure below:

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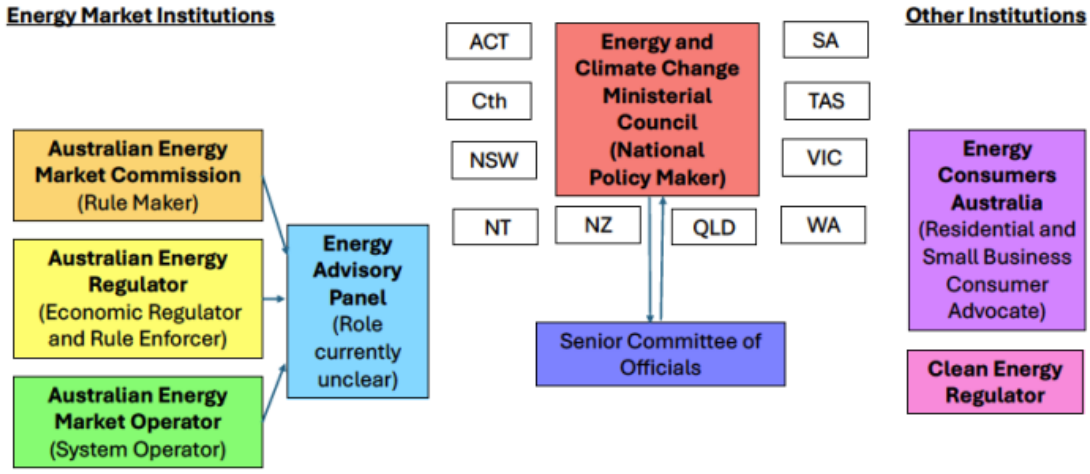
[22] Note, for discussions of demand side participation and economic curtailment, see: ACOSS, *Submission 52*, Attachment 1, p. 10; Ms Marilyne Crestias, Head of Policy and Advocacy, Clean Energy Investor Group, *Committee Hansard*, 31 October 2024, p. 68; Mr Daniel Westerman, Chief Executive Officer, Australian Energy Market Operator (AEMO), *Committee Hansard*, 23 October 2024, p. 20; Ms Anna Collyer, Chair, Australian Energy Market Commission (AEMC), *Committee Hansard*, 23 October 2024, pp. 56–57.

[23] DCCEEW, *Submission 12*, p. 2.

[24] Australian Energy Council, *Submission 2*, [pp. 1–2].

[25] Australian Energy Council, *Submission 2*, [p. 1].

Figure 2.1 Australia's energy institutional and governance structure



Source: Professor Penelope Crossley, Submission 58, p. 2.

2.24 The UNSW Collaboration on Energy and Environmental Markets submitted that the current institutional arrangements were initially codified with the aim of improving and streamlining governance arrangements for the energy sector.[26]

2.25 However, despite the intentions of the AEMA, some inquiry participants raised that the current governance arrangements of the market bodies require reform, and that the AEMA needs to be updated.[27]

2.26 Renew Illawarra Network submitted that the established market bodies 'theoretically have clear powers, functions and accountabilities that supposedly support the efficient operation of the market in the long term interests of consumers. In practice nothing could be further from the truth'.[28]

2.27 Similarly, Senex Energy, a supplier of natural gas, submitted that there is a 'proliferation of bodies with regulatory functions' and that this is 'increasing regulatory uncertainty, redundancy and imposing direct costs to business through duplicative reporting'. Senex Energy concluded, 'uncertainty, confusion and other distractions amongst regulatory bodies (such as reporting) has been at the expense of implementation of important market design changes…'.[29]

2.28 Professor Bruce Mountain submitted that in his view, 'the main problem explaining much of the failure, is the centralisation of regulation and administration under a system that fails to hold regulators to account

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[26] UNSW Collaboration on Energy and Environmental Markets, *Submission 80,* p. 2.

[27] See, for example, Clean Energy Investor Group, *Submission 17,* p. 3; ACOSS, *Submission 52,* p. 1; Erne Energy, *Submission 32,* [p. 2]; HumeLink Alliance Incorporated, *Submission 53,* p. 34.

[28] Renew Illawarra Network, *Submission 5*, p. 3.

[29] Senex Energy, *Submission 34*, p. 1.

effectively'.[30] Professor Mountain further argued that the lack of accountability for market bodies is underpinned by their oversight by the ECMC. Professor Mountain stated:

> …the ministerial council of nine jurisdictional government energy ministers chaired by the Commonwealth energy minister and supported by a committee of jurisdictional government officials with rotating leadership, has resulted in diffuse, opaque and consequently weak accountability of the AEMC, AER and AEMO. To be accountable to everyone is to be accountable to no-one. The consequence of this is a deeply entrenched culture of blame-shifting, risk aversion, empire-building and stifled innovation in the regulation and oversight of the electricity industry.[31]

2.29 The Australian Council of Social Service (ACOSS) also noted that the framework of Australia's energy governance, contained within the AEMA and associated laws, 'were never conceived to keep pace with the largest industrial revolution in history – the transition to net zero'.[32]

2.30 As such, ACOSS contended that it is therefore 'unsurprising that the legacy energy frameworks that are currently relied on for delivering the [net zero] transition aren't fit for that purpose'.[33]

2.31 Professor Crossley also argued that the AEMA needed a 'refresh', noting that it has not been amended since 2013 and that it does not reflect Australia's priorities or current arrangements,[34] which Mr Wood echoed by emphasising that the Grattan Institute recommends a review of the AEMA.[35]

2.32 The several suggestions and critiques made by submitters regarding the ECMC, the Energy Advisory Panel (EAP), and the three market bodies are discussed in the following sections.

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30 Professor Bruce Mountain, *Submission 8,* p. 5.

31 Professor Bruce Mountain, *Submission 8,* p. 5. Citation omitted.

32 ACOSS, *Submission 52,* Attachment 1, p. 16.

33 ACOSS, *Submission 52,* Attachment 1, p. 16.

34 Professor Penelope Crossley, *Committee Hansard,* 31 October 2024, p. 27.

35 Mr Tony Wood, Program Director, Energy and Climate Change, Grattan Institute, *Committee Hansard,* 31 October 2024, p. 20.

Energy and Climate Change Ministerial Council

2.33 As discussed in Chapter 1, the ECMC has oversight of the AEMO, AER and AEMC.[36] Some inquiry participants discussed the role of the ECMC, as well as its accountability and transparency.[37]

Policy role

2.34 Discussing the ECMC's role, Mr Wood observed that in some cases, the federal, state and territory governments have abrogated some policy obligations and responsibilities to the market bodies. Mr Wood argued that when the market bodies consequently tried to develop policy, 'the governments didn't like that very much, so you end up with an unfortunate tension between these two'.[38]

2.35 Mr Wood concluded that it is therefore appropriate for the ECMC to 'take broader control of where policy should go, and then provide that clear policy direction' to the market bodies to 'ensure they get what they have asked for'.[39]

Transparency

2.36 Professor Crossley told the committee that she believes there is a lack of transparency within the energy governance system, and highlighted specific points related to the operations of the ECMC.[40] Professor Crosley noted that:

> …there is an absolute lack of transparency within our governance framework. We do not get forward agendas for the ECMC and we have no information on how my democratically elected representatives are representing in this space. This is a committee of cabinet. You do not know what topics are being discussed and you do not know what points my state representatives are making. There is no clarity on which jurisdictions are leading particular work programs under the ECMC.[41]

2.37 In January 2020, the Council of Australian Governments Energy Council published a Strategic Energy Plan in response to a recommendation from the Independent Review into the Future Security of the National Electricity Market

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36 Professor Penelope Crossley, *Submission 58*, p. 3.

37 See, for example, Professor Bruce Mountain, *Submission 8,* p. 5; Professor Penelope Crossley, *Submission 58,* pp. 3–4; Mr Tony Wood, Program Director, Energy and Climate Change, Grattan Institute, *Committee Hansard,* 31 October 2024, p. 12.

38 Mr Tony Wood, Program Director, Energy and Climate Change, Grattan Institute, *Committee Hansard,* 31 October 2024, p. 12.

39 Mr Tony Wood, Program Director, Energy and Climate Change, Grattan Institute, *Committee Hansard,* 31 October 2024, p. 12.

40 Professor Penelope Crossley, *Committee Hansard,* 31 October 2024, p. 23.

41 Professor Penelope Crossley, *Committee Hansard,* 31 October 2024, p. 23.

(Finkel review).[42] Nexa Advisory recommended that the ECMC publish a renewed Strategic Energy Plan, and that it should include:

> …a mechanism which embeds national coordination and accountability for delivering the critical nation-building projects that underpin the success of the transition. This would provide a clear market signal that the policies included within AEMO's Integrated System Plan will be delivered on time – including coal closure certainty - supporting investor confidence by strengthening the alignment between federal and state policies and this roadmap.[43]

Accountability

2.38 The Department of Climate Change, Energy, the Environment and Water (the Department) said AEMO was accountable to ECMC as they report twice yearly against their priorities and undertook to provide those reports on notice to the committee. These reports appear to reflect the very limited accountability to which AEMO is held. These would not be acceptable in the private sector, particularly not in an ASX Listed environment, which the public sector should at least make effort to match. They are highly illustrative of the clear lack of accountability that exists in the energy system.

Energy Advisory Panel

2.39 Evidence to the committee discussed the role of the EAP and the need for greater transparency from the EAP. These matters are considered below.

EAP role

2.40 As discussed in Chapter 1, the EAP is a regular meeting of the three market bodies, as well as the Australian Competition and Consumer Commission (ACCC) and senior official observers from jurisdictions, in which matters relating to key energy market issues are discussed.[44] As it is an advisory body, it has no governance function.

2.41 Ms Clare Savage, both Chair of the EAP and Chair of the AER, told the committee that the EAP coordinates the market bodies' advice to government under the National Energy Transformation Partnership regarding the security, reliability and affordability of Australia's east coast energy system. Ms Savage emphasised that the advice EAP provides to the ECMC is confidential.[45]

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42 Department of Climate Change, Energy, the Environment and Water (DCCEEW), *Strategic Energy Plan*, 20 January 2020, www.energy.gov.au/energy-and-climate-change-ministerial-council/energy-ministers-consultations/strategic-energy-plan (accessed 11 December 2024).

43 Nexa Advisory, *Submission 26*, p. 6.

44 AEMC, *Submission 16*, [p. 3].

45 Ms Clare Savage, Chair, Australian Energy Regulator (AER), *Committee Hansard*, 5 December 2024, p. 2.

2.42 Ms Savage noted that the EAP is a non-statutory body that has no formal regulatory or policy decision-making powers, and that it is underpinned by a charter and operating principles, which provide the EAP's three key roles:

> …identifying, anticipating and providing advice on emerging and future energy market developments, focusing on providing early advice on policy and regulatory changes to sustain security, reliability and affordability through the energy transformation; providing a sounding-board for energy ministers on policy and regulatory reforms under consideration or development, including through the National Energy Transformation Partnership; and facilitating continued coordination, collaboration and information sharing between member agencies.[46]

EAP transparency

2.43 Professor Crossley and Erne Energy both identified a need for greater transparency from the EAP. For instance, Erne Energy contended that the EAP 'has no established governance or transparency'.[47]

2.44 Professor Crossley also discussed that the EAP does not have a website and consequently called for more insight into its activities:

> I would like to know what the AEP [sic] is doing. I would like to know about the senior officials on the various working groups. I'd like to know who they are. I would like to know who the lead jurisdiction is on each of those priorities under the National Energy Transformation Partnerships and their priorities nationally. Depending on who the lead jurisdiction is, could actually have quite a marked influence on the outcome of policy.[48]

2.45 Professor Crossley remarked that increasing EAP transparency could be achieved by publishing information online:

> I think they could probably just build a website. I would actually argue that, in this space, we don't need more legislation. They should just go and do it. It doesn't need to be legislated.[49]

2.46 Ms Savage explained that the EAP does not publish its work due to its confidential nature, but considered that the publication of the EAP's terms of reference and operating charter was a matter for government.[50]

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46 Ms Clare Savage, Chair, Australian Energy Regulator, *Committee Hansard,* 5 December 2024, p. 2.

47 Erne Energy, *Submission 32,* [p. 7].

48 Professor Penelope Crossley, *Committee Hansard,* 31 October 2024, p. 28.

49 Professor Penelope Crossley, *Committee Hansard,* 31 October 2024, p. 28.

50 Ms Clare Savage, Chair, AER, *Committee Hansard,* 5 December 2024, pp. 6–7.

Australian Energy Market Operator

2.47 Several inquiry participants observed areas in which AEMO's governance arrangements could be strengthened, including matters related to oversight, potential conflicts of interest and independence.[51] These are explored below.

Governance and transparency

2.48 In its submission, AEMO explained that it is registered under the *Corporations Act 2001* as a member-based not-for-profit company limited by guarantee.[52]

2.49 Erne Energy critiqued these arrangements by observing that AEMO is 'unusual as a power system operator in that it is unregulated in the NEM' and contended that a company being not-for-profit 'does not mean AEMO operates efficiently or in the best interests of its consumers, or its "shareholder"'.[53]

2.50 Further, Mr Alexander Bainton, Senior Policy Analyst in the Energy Program at the Centre for Independent Studies (CIS), raised the difficulty of obtaining information about planning processes through Freedom of Information (FOI) requests due to AEMO being a corporation:

> On the issue of finding out key discussions that drive the outcomes for the whole system and our planning processes for the next 30 years between, for instance, DCCEEW and AEMO, those have largely been limited because AEMO is essentially a corporation and so doesn't come under the Freedom of Information Act. AER and AEMC do, but, because AEMO is a corporation, even their interactions with AEMO—there's pretty limited visibility on that. There's some transparency around some parts of the AEMO model and the ISP planning process, but the lack of FOIs limits the transparency and limits the accountability.[54]

2.51 Further, Professor Mountain told the committee that he does not believe that AEMO is transparent and accountable. He commented that AEMO has been 'given an actionable ISP, which makes them accountable essentially to themselves'.[55] Professor Mountain further raised that:

> The AER can dot the i's and cross the t's on what the transmission companies think will be the cost of the approved program, but AEMO have an absolute authority, and the rules have intended that. That's by explicit intention, which was not, I should stress, the recommendation of the Finkel review.

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51 See, for example, Centre for Independent Studies, *Submission 3*, Supplementary Submission 2, pp. 32–33; Mr Ted Woodley, *Submission 6*, p. 5; Professor Bruce Mountain, *Submission 8*, p. 6; Coalition for Conservation, *Submission 25*, p. 1; Nexa Advisory, *Submission 26*, p. 6; Erne Energy, *Submission 32*, [p. 4]; Energy Grid Alliance, *Submission 54*, [p. 2]; Mr Hadyn Carmichael, *Submission 67*, p. 6.

52 AEMO, *Submission 14*, p. 2.

53 Erne Energy, *Submission 32*, [p. 4].

54 Mr Alexander Bainton, Senior Policy Analyst, Energy Program, Centre for Independent Studies, *Committee Hansard*, 31 October 2024, p. 40.

55 Professor Bruce Mountain, *Committee Hansard*, 31 October 2024, p. 4.

> That was not what Alan Finkel's review had said ought to happen. So the only effect of policy governance that one might have of AEMO is hoping that, through government's involvement on AEMO's board, it can have some sway. But the governance processes for there are highly imperfect. So a decision of substantial public policy content has no proper forum for policy accountability.[56]

2.52 Professor Mountain also submitted that AEMO governance 'has not kept up with the ever-greater responsibilities it now has'. Professor Mountain criticised that AEMO remains a private company limited by guarantee, despite 'its now huge role in the development and implementation of policy'. He argued that AEMO's governance processes are opaque 'to the public and presumably also to AEMO's members and possibly also even to much of its Board'.[57] Professor Mountain concluded that:

> It seems to me that this arrangement results in an organisation that seems to be answerable to everyone and so answerable to no-one, and thus a law unto itself and to those of its Directors able to drive their agendas behind closed doors.[58]

Potential conflicts of interest

2.53 Some inquiry participants observed that AEMO appears to have multiple roles that could cause potential conflicts of interest.[59] For instance, Mr Ted Woodley, former Managing Director of GasNet, PowerNet and EnergyAustralia, who participated in the inquiry in a private capacity, submitted that AEMO has become 'an increasingly influential player in the Australian energy sector' that has responsibility for electricity operations, electricity markets, electricity planning, transmission construction, contracting (via AEMO services), Regulatory Investment Test for Transmission (RIT-T) advice, gas operations, gas markets and gas forecasts.[60]

2.54 Mr Woodley commented that he doubts 'it was ever envisaged that AEMO would cover such a wide range of responsibilities…with many conflicts of interest'. He concluded that AEMO's responsibilities have grown far beyond just 'energy market operations'.[61]

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56 Professor Bruce Mountain, *Committee Hansard,* 31 October 2024, p. 4.

57 Professor Bruce Mountain, *Submission 8,* p. 26.

58 Professor Bruce Mountain, *Submission 8,* p. 26.

59 See, for example, Centre for Independent Studies, *Submission 3,* Supplementary Submission 2, pp. 32–33; Nexa Advisory, *Submission 26,* p. 6. References omitted; Erne Energy, *Submission 32,* [p. 4].

60 Mr Ted Woodley, *Submission 6,* p. 5.

61 Mr Ted Woodley, *Submission 6,* p. 5.

2.55 Erne Energy echoed similar concerns and contended that 'AEMO is a deeply conflicted organisation' that has 'many conflicting roles, well outside the original intent at the establishment of the NEM'.[62]

2.56 Nexa Advisory also submitted that AEMO is seen as a 'highly conflicted monopoly entity, that strays considerably outside its core role of system operation and market operation, into policy and market design which are key AEMC functions policy and market design'.[63]

2.57 The CIS specifically identified that in Victoria, AEMO performs the function of designated transmission planner in addition to its market operator functions. Further, CIS noted AEMO has taken on additional role by creating a for-profit company in Victoria, 'Transmission Company Victoria', to undertake early works for VNI West.[64]

2.58 The CIS contended that these dual roles create a potential conflict of interest:

> With AEMO being responsible for transmission planning in Victoria, as well as having a statutory function in approving the economic case for linked projects such as HumeLink, there is a clear incentive to reduce risk of the projects not proceeding for its subsidiary, which AEMO could do by manipulating the planning process.[65]

2.59 CIS further submitted that 'AEMO's role as NSW Consumer Trustee also lacks transparency, putting consumers at risk'.[66]

2.60 These concerns were echoed by Coalition for Conservation, which drew the committee's attention to, in its view, AEMO's lack of independence:

> We draw attention to AEMO's lack of independence in its multiple roles as the system operator, the system planner (including as the transmission planner), and as a proponent for transmission projects. We highlight the importance of AEMO not taking on the role of promoting specific technologies, or development approaches that favour specific technologies.[67]

2.61 AEMO told the committee that it operates within National Electricity Rules (NER) when performing its dual planning functions and operational functions.

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62 Erne Energy, *Submission 32*, [p. 4].

63 Nexa Advisory, *Submission 26*, p. 6. References omitted.

64 Centre for Independent Studies, *Submission 3*, Supplementary Submission 2, p. 32.

65 Centre for Independent Studies, *Submission 3*, Supplementary Submission 2, p. 32.

66 Centre for Independent Studies, *Submission 3*, Supplementary Submission 2, p. 2.

67 Coalition for Conservation, *Submission 25*, p. 1.

Ms Merryn York, Executive General Manager of System Design at AEMO, explained that:

> …In terms of the planning functions separate from the operational functions, we obviously have the scope of what it is that we plan for set out through the National Electricity Rules. We're really just meeting the obligations that we have in terms of the things that we need to—the way in which we need to perform our planning function as [set] out in the National Electricity Rules, in the same way that the operational dispatch and market operations are also set out in the National Electricity Rules. The rules really prescribe what it is that we're required to do.[68]

2.62 In its submission, AEMO noted that it is envisaged that Transmission Company Victoria will be 'ultimately transferred to a transmission network service provider to construct and operate the transmission line'.[69]

2.63 However, Erne Energy contended that 'any other functions that sit outside the remit of system and market operation, such as auctioneer for Capacity Incentive Scheme, Customer Trustee (NSW), Planner (Victoria), transmission developer (Victoria) should be overseen by a different entity to provide clear separation between commercial operations and NEM wide only functions'.[70]

Questions of independence

2.64 In line with potential conflicts of interest concerns, some inquiry participants also questioned AEMO's independence.[71] For example, the Coalition for Conservation contended that 'AEMO's multiple roles as operator, system planner and transmission proponent, together with its reporting line to government stakeholders risks compromising its independence'.[72]

2.65 Adjunct Professor Stephen Wilson, Visiting Fellow at the Institute of Public Affairs, questioned AEMO's independence from government when he told the committee:

> I think there's a higher level question here…I think the question is whether AEMO is truly independent. Is its role independent of government or not? I

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68 Ms Merryn York, Executive General Manager, System Design, AEMO, *Committee Hansard,* 23 October 2024, p. 23.

69 AEMO, *Submission 14,* p. 4.

70 Erne Energy, *Submission 32*, [p. 5].

71 See, for example, Adjunct Professor Stephen Wilson, Visiting Fellow, Institute of Public Affairs, *Committee Hansard,* 29 October 2024, p. 21; Mr Ted Woodley, *Submission 6,* pp. 5–6; Coalition for Conservation, *Submission 25,* p. 1; UNSW Collaboration on Energy and Environmental Markets, *Submission 80,* p. 6.

72 Coalition for Conservation, *Submission 25*, p. 1.

> had understood it was intended to be, but I think that is an open question now.[73]

2.66 This was echoed by Dr Dylan McConnell, Senior Research Associate at the University of New South Wales, who noted that AEMO reflects government policy whilst also being regarded as an independent planner:

> There is this issue of AEMO reflecting government policy and being held up as an independent source of advice, when in actual fact it may just be reflecting government decisions. That in itself is not necessarily a bad thing, except for this sort of accountability and transparency point where it's held up as an independent system planner when it is very much doing planning activities for different jurisdictions.[74]

2.67 Submitters also raised questions on AEMO's independence when discussing the ISP. These matters are addressed in Chapter 3 within the context of energy market planning processes.

Australian Energy Regulator

2.68 Inquiry participants considered the following key themes in relation to AER's governance arrangements:

- AER's separation from the ACCC;
- AER's monitoring of AEMO's activities; and
- The possibility of introducing AER independent performance assessments.

2.69 Matters related to the HumeLink project rules and ISP consultation requirements are also discussed below.

Separation from Australian Competition and Consumer Competition

2.70 As mentioned in Chapter 1, the AER is a combined entity with the ACCC for the purposes of the *Public Governance, Performance and Accountability Act 2013*.[75] When considering the AER's governance arrangements, Nexa Advisory submitted that the AER must have clear governance arrangements and regulatory structures that are robust, with a distinct role from the ACCC.[76]

2.71 Similarly, Professor Crossley identified that the relationship between the AER and the ACCC 'is often cited as a significant area of concern in relation to NEM governance'. She noted that in particular, the states and territories deem that

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[73] Adjunct Professor Stephen Wilson, Visiting Fellow, Institute of Public Affairs, *Committee Hansard,* 29 October 2024, p. 21.

[74] Dr Dylan McConnell, Senior Research Associate, University of New South Wales, *Committee Hansard,* 29 October 2024, p. 10.

[75] AER, *Submission 15*, p. 2.

[76] Nexa Advisory, *Submission 26,* p. 6.

transparency and accountability is 'best served by the separation of the AER from the ACCC'.[77]

2.72 As highlighted in Chapter 1, the AER is preparing for full legal separation from the ACCC in 2025, where the AER Board will be the accountable authority and the AER Chair will be the head of the agency.[78]

Monitoring of AEMO's activities

2.73 The Coalition for Conservation raised that the AER should be monitoring and regulating AEMO's activities to ensure that it 'does not deviate from its defined role as the independent Operator of the energy system'.[79]

2.74 In its submission, the AER drew the committee's attention to the specific compliance activities that it undertakes in relation to AEMO's ISP. The AER is required to review the transparency of inputs and assumptions that AEMO determines when developing the ISP to 'provide greater stakeholder confidence in the ISP'. The AEMO is also required to submit a compliance report outlining how it has complied with the guidelines in preparing the ISP.[80]

Independent review of performance

2.75 Dr Gabrielle Kuiper raised accountability concerns about the AER by highlighting to the committee that the AER's performance has never been independently assessed:

> …this is an important point on governance, accountability and transparency—the AER's performance as an economic regulator has never been independently assessed. There was a National Audit Office report several years ago, but they did not look into issues like this.[81]

2.76 Similarly, the Institute for Energy Economics and Financial Analysis believed that the Commonwealth should develop and apply a performance evaluation framework to the AER. Further, it recommended that the NEL revenue and pricing principles should be amended to set 'clear and testable benchmarks for testing whether [the] AER is effective in constraining network monopoly pricing power'.[82]

HumeLink Project rules

Box 2.2 HumeLink case study

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77 Professor Penelope Crossley, *Submission 58,* p. 8.

78 AER, *Submission 15,* p. 2.

79 Coalition for Conservation, *Submission 25,* p. 2.

80 Australian Energy Regulator, *Submission 15,* p. 14.

81 Dr Gabrielle Kuiper, *Committee Hansard*, 31 October 2024, p. 51.

82 Institute for Energy Economics and Financial Analysis (IEEFA), *Submission 20,* p. 6.

What is HumeLink?

HumeLink is a 500-kilovolt transmission line that will connect Wagga Wagga, Barnaby and Maragle in New South Wales. Transgrid, the operator and manager of the high voltage electricity transmission network in New South Wales and the Australian Capital Territory,[83] explains that HumeLink is one of the state's largest energy projects. The project has approximately 365 kilometres of proposed new transmission lines, and new or upgraded infrastructure at four locations.

According to Transgrid, HumeLink will increase the amount of renewable energy that can be delivered across the national electricity grid.

On 14 November 2024, HumeLink received planning approval from the New South Wales Government and will be assessed by the Department of Climate Change, Energy, the Environment and Water (the Department).

Subject to approvals, Transgrid noted that site set up and construction works are expected to commence in early 2025.[84]

HumeLink Project rules

According to the AER, contingent project applications are applications made by network businesses to amend their regulatory revenue determination to include the revenue required for a major network infrastructure project which has previously been flagged, but not yet committed to, in long-term investment plans. This includes actionable projects in the ISP, such as Victoria to New South Wales Interconnector West (VNI West) and HumeLink.[85]

On 2 August 2024, the AER published its decision in relation to Transgrid's HumeLink stage 2 contingent project application.[86]

It its first supplementary submission, the Centre for Independent Studies (CIS) discussed HumeLink within this context. The CIS pointed to a quote from the AER Chair, Ms Clare Savage, in which she said:

> We've made quite a number of concessions to try and support this project and to see Transgrid be able to invest in it and deliver the project, but we've absolutely been very, very focused in our

[83] Transgrid, *What we do*, www.transgrid.com.au/about-us/what-we-do/,(accessed 6 December 2024).

[84] Transgrid, *HumeLink – Transgrid*, www.transgrid.com.au/projects-innovation/humelink, (accessed 6 December 2024).

[85] AER, *Submission 15*, p. 7.

[86] AER, *Transgrid HumeLink contingent project stage 2*, 2 August 2024, www.aer.gov.au/industry/networks/contingent-projects/transgrid-humelink-contingent-project-stage-2, (accessed 9 December 2024).

> assessment on making sure that consumers don't pay any more than they need to for this project.[87]

The CIS claimed that in the case of HumeLink, 'the evidence suggests that the process was adjusted to favour the project' and that:

> … rules were modified or simply not enforced, missing consumer protections were ignored, and that the AER possibly had a different posture toward Transgrid in private discussions than they did in public.[88]

The AER responded to these comments by stating that it does not agree with the CIS' assertion that it modified or did not enforce the NER when conducting its regulatory role in relation to HumeLink's contingent project application assessments.[89]

The AER further explained that the comments made by the AER Chair were:

> … intended to convey that we were flexible in our approach while operating within the rules. We did not make concessions on any compliance requirements. We balance a number of factors as a regulator when considering large and complex contingent project applications.[90]

ISP consultation requirements

2.77 The CIS also claimed that the AER waived the AEMO's obligation to consult on the Draft 2024 ISP.[91] However, the AER asserted that it does not 'waive' obligations under the National Energy Laws and that its focus is 'to continue to perform our statutory role rigorously, and independently, with the long-term interest of consumer[s] in mind'.[92]

Australian Energy Market Commission

2.78 Inquiry participants primarily discussed the AEMC's rule-making powers when discussing governance arrangement concerns.[93] Professor Crossley explained

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87 Centre for Independent Studies, *Submission 3*, Supplementary Submission 1, p. 8.

88 Centre for Independent Studies, *Submission 3*, Supplementary Submission 1, p. 8.

89 AER, right of reply to adverse comments, *Submission 3*, Supplementary Submission 1, [p. 1].

90 AER, right of reply to adverse comments, *Submission 3*, Supplementary Submission 1, [p. 1].

91 Centre for Independent Studies, *Submission 3*, Supplementary Submission 1, p. 10.

92 AER, right of reply to adverse comments, *Submission 3*, Supplementary Submission 1, [p. 2].

93 See, for example, Australian Energy Council, *Submission 2*, [p. 3]; Professor Penelope Crossley, *Submission 58*, p. 6. Citation omitted; Australian Financial Markets Association, *Submission 66*, [p. 4].

that the AEMC's rule-making powers are unique as they do not receive usual levels of parliamentary oversight:

> …AEMC's rulemaking power is that unlike other forms of delegated legislation, it is expressly enshrined in the National Electricity Law, the National Energy Retail Law, and the National Gas Law that these legislative instruments are not to be subject to any parliamentary oversight, or disallowance procedure. This was an intentional feature in the design of the rulemaking process.[94]

2.79 Professor Crossley also outlined that the National Energy Rules and associated regulations are not subject to parliamentary disallowance, as it is not considered appropriate for the parliament of one jurisdiction to disallow an instrument that applies to all other jurisdictions.[95]

2.80 In line with Professor Crossley's evidence, the Australian Financial Markets Association identified that there is a valuable opportunity for Post Implementation Reviews (PIRs) across major policy changes within the NER. It commented that PIRs would 'enhance the opportunity for Parliamentary scrutiny and oversight, as well as highlight any policy gaps that required attention'.[96]

2.81 The Australian Financial Markets Association stated that PIRs would also enable governments, regulators and industry 'to collaboratively assess and measure benefits delivered'.[97]

2.82 The Australian Energy Council was similarly supportive of introducing PIRs and submitted that the AEMC should have a positive obligation to conduct PIRs on any major rule changes. The Australian Energy Council also deemed that the PIRs would benefit from an expectation that reforms sunset periodically, with the ability to extend rules and regulations where a PIR identifies net benefits.[98]

Reviewing the effectiveness of energy market body and laws

2.83 Considering the shortcomings of the current energy market settings, submitters identified the need for a review of the energy market's governance arrangements and laws.[99] Submitters discussed which entity should conduct the review and what the review should focus on.

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94 Professor Penelope Crossley, *Submission 58,* p. 6. Citation omitted.

95 Professor Penelope Crossley, *Submission 58,* p. 6. Citation omitted.

96 Australian Financial Markets Association, *Submission 66,* [p. 4].

97 Australian Financial Markets Association, *Submission 66,* [p. 3].

98 Australian Energy Council, *Submission 2,* [p. 3].

99 See, for example, Institute for Energy Economics and Financial Analysis, *Submission 20,* p. 7; Coalition for Conservation, *Submission 25,* p. 1; Nexa Advisory, *Submission 26,* p. 2; Energy and Water Ombudsman Victoria, *Submission 35,* p. 4.

Need for a review

2.84 Ms Stephanie Bashir, Chief Executive Officer of Nexa Advisory told the committee that Australia needs a 'strategic energy plan with bipartisan support' and that the Federal Government must commission an independent review of:

> … the boards of the AER, AEMC, AEMO and Energy Consumers Australia to ensure alignment with the strategy and clarity of roles and to ensure that they have the right mix of skills and knowledge and are appropriately independent. The federal government must also commission an independent review of the electricity networks.[100]

2.85 Additionally, the Coalition for Conservation submitted that Australia's energy market design and governance framework should be reviewed to 'ensure a fair, reliable and sustainable energy supply into the future'. It argued that the current market design is 'ineffective' and that the 'current planning framework is prone to biased and inadequate outcomes'.[101]

Potential review by the Productivity Commission

2.86 Some submitters identified the Productivity Commission as an entity that could conduct this review. For example, the Justice and Equity Centre supported a 'well scoped' Productivity Commission review, that is 'undertaken systematically, encompassing wide consultation and with a timeline adequate to wholistically consider the needs of the energy system in transition'.[102]

2.87 The Justice and Equity Centre also submitted that the review should examine the energy laws and how to promote community and consumer interests:

> The JEC supports a substantive PC [Productivity Commission] review which encompasses a review of the overarching framework of energy laws, to ensure they are fit for purpose and reflect our contemporary understanding of what is required to ensure decisions in energy promote the interests of all consumers and communities.[103]

2.88 The Institute for Energy Economics and Financial Analysis (IEEFA) highlighted its support for a Productivity Commission review but suggested that it should be a 'first-principles review into the economic regulation of electricity networks, to ensure both that network costs are efficient' and that the regulatory environment is suited to a high-distributed energy resources (DER) world.[104]

2.89 The Superpower Institute similarly raised that it is of the view that the Productivity Commission is the appropriate institution to undertake a review of

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100 Ms Stephanie Bashir, Chief Executive Officer, Nexa Advisory, *Committee Hansard*, 30 October 2024, p. 8.

101 Coalition for Conservation, *Submission 25*, p. 1.

102 Justice and Equity Centre, *Submission 28*, p. 3.

103 Justice and Equity Centre, *Submission 28*, p. 6.

104 Institute for Energy Economics and Financial Analysis, *Submission 20*, p. 7.

the National Energy Market, and the required arrangements to 'ensure Australia's future prosperity underpinned by the energy system'. It submitted that this review should be broad, cover 'electricity networks, generation and wholesale markets and the retail market that end users engage with'.[105]

2.90 Dr Dylan McConnell, Senior Research Associate at the University of New South Wales, discussed the possibility of the Productivity Commission conducting such a review. He considered that the Productivity Commission would 'not be a bad choice' but emphasised that the 'main thing is that [the review] needs to be independent of the current market institutions – that's the key.'[106]

Future Market Design of the National Electricity Market review

2.91 The AEC noted that at the ECMC meeting on 1 March 2024, the federal, state and territory energy ministers agreed to take forward a review of the Future Market Design of the National Electricity Market.[107]

2.92 On 26 November 2024, the government announced that an independent expert panel will review the National Electricity Market wholesale market settings. It stated that the purpose of the review is 'to recommend wholesale market settings to promote investment in firmer, renewable generation and storage capacity in the NEM following the conclusion of Capacity Investment Scheme tenders in 2027'.[108]

2.93 The Australian Financial Markets Association believed that the review 'has the opportunity to consider and address the industry's many challenges and present a clear direction of future policy and regulation'.[109]

Market power and competition

2.94 The NEM 'is intended to be a competitive and efficient market where energy consumers "should pay no more than necessary for energy to their homes and businesses"'. However, a 'basic assumption of a competitive market is that there are enough sellers to prevent any single one from controlling prices or output, with ownership spread widely to avoid market power concentration'. The Australian Council of Trade Unions (ACTU), however, argued that 'market

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105 The Superpower Institute, *Submission 24*, pp. 4–5.

106 Dr Dylan McConnell, Senior Research Associate, University of New South Wales, *Committee Hansard*, 29 October 2024, p. 3.

107 Australian Energy Council, *Submission 2*, p. 2.

108 Department of Climate Change, Energy, the Environment and Water, *National Electricity Market wholesale market settings review*, 26 November 2024, www.dcceew.gov.au/energy/markets/nem-wms-review (accessed 4 December 2024).

109 Australian Financial Markets Association, *Submission 66*, [p. 4].

concentration of the ownership and operation of generation capacity has been a characteristic across the NEM'.[110]

2.95 The ACTU submitted that the ability for energy generators to exercise market control is 'facilitated by the bidding and rebidding rules' mandated by the NER. It explained:

> The NER mandates that generators over 30 MW must sell all electricity through the NEM, with AEMO managing demand, forecasting supply, and scheduling generation every five minutes based on bids from generators, which can include up to ten price bands, while also setting maximum bid prices for their generation. The rules also allow the process of rebidding to address unexpected plant breakdowns, but this allows dominant generation companies to manipulate their initial generation capacity bids, exploiting insufficient competition to fill gaps at the time of dispatch.[111]

2.96 The ACTU pointed to a lack of transparency in the work of the AEMC and AER in defining and overseeing the exercise of market power by generators and retailers. As a result, 'uncompetitive behaviour' is resulting in high electricity prices for consumers.[112] The ACTU also noted the recommendations of the Inquiry into Price Gouging and Unfair Pricing Practices chaired by Professor Allan Fels AO which tabled its final report in February 2024, including:

- An independent expert should review the wholesale market's design and operation, considering refinements or a shift to a 'capacity market,' while monitoring electricity generation concentration, competition impacts, and addressing recent price shocks and evidence of price gouging.
- ASIC should receive a Ministerial Direction to investigate the energy derivatives market to prevent participants from misusing their position to gain unfair advantages or influence energy prices.
- Network prices should continue to be subject to close regulatory scrutiny with the long-term interests of consumers put first.
- There should be a regulatory review of the high degree of price discrimination in the retail electricity and gas markets.
- Governments and regulators should continue to introduce initiatives to improve retail outcomes brought about by current market imperfection.[113]

2.97 The Grattan Institute also noted the difficulties associated with the monopoly exerted by Transmission Network Service Providers (TNSPs). Mr Wood, Grattan Institute, told the committee market forces through increased competition should be implemented. Mr Wood stated:

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110 Australian Council of Trade Unions (ACTU), *Submission 51*, p. 5.

111 ACTU, *Submission 51*, p. 5.

112 ACTU, *Submission 51*, p. 5.

113 ACTU, *Submission 51*, p. 7. See also, Inquiry into Price Gouging and Unfair Pricing Practices, February 2024, InquiryIntoPriceGouging_Report_web9-1.pdf, (accessed 11 December 2024).

> I think the role of the government in having a planning body—as it does in most infrastructure—is absolutely appropriate, but making sure that, where possible, you introduce real commercial tension into this is the right way to go.[114]

2.98 Mr Wood further commented:

> The history of investment in these regulated businesses is that there is a fundamental role for planning in the first place, because infrastructure being built just all over the place is not what anyone is suggesting. So there is a role for government to say, 'Well, this is broadly what we need to achieve,' and then you use some form of bidding process to provide the competitive tension to ensure that you get the lowest cost. There are some good examples, I think, in what's been done most recently in New South Wales, where we're seeing the use of competitive bidding looking as though it's helping to reduce costs below what they might otherwise have been. So that's one way to do this.

2.99 Nexa Advisory also submitted that the interaction between distribution network service providers (DNSPs) and retailer tariffs is a 'critical contention within pricing'. It suggested that:

> …there is an opportunity to explore governance arrangements, roles and responsibilities of these parties, as well as new entrants such as resource aggregators and other service providers. There is also a clear need for representation of the innovative, disruptive business models – and investor perspectives – within decision-making of all market bodies. This would help any 'incumbency bias' towards existing processes'.[115]

Ring-fencing

2.100 Ring-fencing refers to the separation of the regulated and competitive business activities of an electricity service provider. The purpose of this mechanism is to prevent regulated businesses from:

- favouring their own competitive activities to the disadvantage of other competitors operating in the market; and
- using revenue earned from regulated services to cross-subsidise their contestable services.[116]

2.101 Nexa Advisory highlighted gaps in regulatory monitoring of competition in the wholesale and retail markets. It stated that

> Under existing regulatory monitoring, the ACCC plays an informal role in assessing the competitiveness across the wholesale and retail markets, and the AER oversees network, retail and wholesale market performance as part of its performance reporting function.

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[114] Mr Tony Wood, Program Director, Grattan Institute, *Committee Hansard*, 31 October 2024, p. 13.

[115] Nexa Advisory, *Submission 26*, p. 13.

[116] Australian Energy Regulator, Ring-fencing | Australian Energy Regulator (AER) (accessed 11 December 2024). See also, Electrical Trades Union of Australia, *Submission 4*, p. 4.

> Despite these regulatory monitoring efforts, there is a notable gap around the role of distribution network service providers (DNSPs). While there is a focus on wholesale and retail market competitiveness, the governance arrangements and specific roles and responsibilities of DNSPs is not adequately considered in the context of the CER and innovation currently underway.[117]

2.102 Nexa Advisory concluded:

> This is exemplified by the recent AER's recent ring-fencing class waiver for Community batteries, which though limited in application, set a precedent which could undermine the intention of ring-fencing to protect competitive market dynamics and consumer outcomes for regulated network monopoly businesses.[118]

2.103 Erne Energy also submitted that 'the weakening of ringfencing through the application of class waivers is detrimental to consumers while benefiting the NSPs'.[119]

2.104 The committee also heard criticism of AER's ring-fencing framework and the impact it is having on competition and subsequent electricity prices for consumers. For example, the Electrical Trades Union of Australia (ETU) submitted that cross-subsidisation and vertical integration can drive down operational costs for taxpayer funded network service providers and reduce costs for consumers. It stated 'the inability to cross-subsidise means that network costs are incurred which, within a pre-set determination, must be passed on to consumers in the form of network charges'.[120]

2.105 The ETU also alleged that ring-fencing 'drives several wasteful operational inefficiencies for workers on power networks' with multiple service providers being required to complete work for customers. It stated, 'not only is this inconvenient and unproductive for customers and workers alike, but it adds an additional and wholly unnecessary layer of costs to maintenance and repair programs'.[121]

Incumbency

2.106 The committee received evidence in relation to a perceived 'incumbency bias' that 'favours the status quo, inhibiting innovation, investment and new

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117 Nexa Advisory, *Submission 26*, pp. 12–13.

118 Nexa Advisory, *Submission 26*, pp. 12–13.

119 Erne Energy, *Submission 32*, p. 2.

120 Electrical Trades Union of Australia, *Submission 4*, p. 4.

121 Electrical Trades Union of Australia, *Submission 4*, p. 4.

models'.[122] For example, Nexa Advisory pointed to the Finkel Review,[123] which noted that submitters 'complained of the 'incumbency bias' in favour of the status quo on the part of energy market bodies to the detriment of consumers and new market participants'. Similarly, Erne Energy submitted that:

> The federal government and state governments in the National Electricity Market (NEM) need to recognise that the market bodies, the market operator, market participants (retailers and gentailers) and electricity network service providers (NSPs, both distribution and transmission) are very comfortable with the governance regime that has been in place since the start of the NEM.[124]

2.107 Erne Energy told the committee that these incumbent entities are 'in direct competition with Australians who are generating their own electricity through their rooftop solar [photovoltaic] PV'. As such:

> Nearly every rule change proposal in the last 5 years has been an attempt by the incumbents to reign in the advance of rooftop solar, typically by treating these small generators just as the large-scale generators are treated (apart from the anomalous charging of rooftop solar PV to export to the distribution network, while large-scale generators do not pay to use the transmission network to export electricity).[125]

2.108 It noted that 'incumbents dominate' both rule change proposals and consultation processes.[126] Erne Energy stated that 'the bulk of submissions to rule changes are from market participants' and that:

> Governments need to recognise that incumbents, including the market bodies and the market operator (AEMO) are in the battle for their (status quo) lives and as a result they should not be shaping the future of the energy market and its governance.[127]

2.109 Erne Energy noted that through its engagement in industry technical working groups it has observed that:

> …many of the "innovation" projects funded and rule change proposals have been to support outcomes that have already been decided by the industry, the market bodies and the market operator behind closed doors, with consultation processes tacked on afterwards. This is particularly true of the Australian Renewable Energy Agency (ARENA) Distributed Energy Integration Program (DEIP), where key initiatives include export tariffs for

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122 Nexa Advisory, *Submission 26*, p. 8.

123 Nexa Advisory, *Submission 26*, p. 8. See also, Independent Review into the Future Security of the National Electricity Market, p. 179, Independent Review into the Future Security of the National Electricity Market - Blueprint for the Future, (accessed 12 December 2024).

124 Erne Energy, *Submission 32*, p. 1.

125 Erne Energy, *Submission 32*, p. 1.

126 Erne Energy, *Submission 32*, p. 1.

127 Erne Energy, *Submission 32*, p. 7.

> rooftop solar PV, flexible exports and now flexible load. While consumers are represented through Energy Consumers Australia (ECA), they are the only consumer voice at the table and too often the "incumbent" voice dominates saying "this has to happen".[128]

2.110 Nexa Advisory similarly observed that the interests of consumers are not being prioritised due to incumbency bias. It submitted:

> Despite 'long term interests of consumer outcomes' being a critical objective within the existing electricity rules and policy framework, and consumer preferences being the focus of current rule change processes, this segment is becoming increasingly marginalised in the decision-making process…This is exacerbated by an incumbency bias that prevents this segment being adequately included in decision-making.[129]

2.111 Erne Energy was also critical of a lack of constraints on AEMO, and the impact this is having on consumers. It submitted:

> The argument that at a time of transition AEMO should not be "constrained" in the areas in which it operates is leading to growing costs, no need to minimise those costs and a drive to centralise power system operation (as an "integrated system operator") when it is not physically or technically possible for a transmission system operator to manage operations from top to consumer living room on the sub-second (frequency) timescales needed to keep the system reliable. Other transmission system operators are dealing with the energy transition and are still required to meet economic efficiency regulations.[130]

2.112 Erne Energy concluded:

> AEMO costs are rising, and all of the fees AEMO charges participants will be passed on to consumers of electricity. While much attention has been paid to other contributors to the cost-of-living crisis, AEMO is the one entity in the energy industry that is not required to show any constraint on costs, while using the funding provided by consumers to cross-subsidise commercial activities.
>
> If there is to be no reform of the governance of AEMO, which would be a missed opportunity, a revised statement of role is urgently needed, which should be published as soon as possible.[131]

2.113 Submitters also pointed to the interests of incumbents stifling innovation in regulation. For example, Erne Energy stated 'innovation and adoption of international approaches to system management, both by AEMO and the NSPs, has been poor and slow, and not helped by the AER failing to support innovation (for which it has no framework)'. It submitted that 'too often "power system security" is the reason given to drive changes to the rules and

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128 Erne Energy, *Submission 32*, p. 2.

129 Nexa Advisory, *Submission 26*, pp. 4–5.

130 Erne Energy, *Submission 32*, p. 5.

131 Erne Energy, *Submission 32*, p. 5.

frameworks and the winners are always the incumbents at the cost of consumers (e.g. power of choice, emergency backstops)'.[132] Similarly, Nexa Advisory submitted:

> …the current regulatory framework often favours incumbents, limiting the evolution and competitiveness of new entrants and the development of consumer-centric technology solutions. There is a critical need to reassess the roles of traditional and innovative players in the energy retail and distribution network landscape.[133]

2.114 The committee notes the work carried out by the AEMC in 2022 on 'Transmission Planning and Investment – Contestability' and encourages the implementation of the paper's finding to incorporate a healthy competitive tendering process to manage incumbency bias seen in the system.

[132] Erne Energy, *Submission 32*, p. 2.

[133] Nexa Advisory, *Submission 26*, p. 12.

Chapter 3
Planning and Performance

3.1 This chapter examines planning and performance in Australia's energy market. It first discusses the Integrated System Plan (ISP), including its purpose, modelling and consultation processes. The chapter then explores alternative modelling scenarios and energy sources raised over the course of the inquiry and concludes with case studies of HumeLink and VNI West.

Integrated System Plan

3.2 The ISP, according to the Department of Climate Change, Energy, the Environment and Water (the Department), is a policy and information tool for market participants and governments who are planning in an 'environment of uncertainty'. The Department further outlined that the ISP

> …models the amount of demand that is expected and therefore the matching amount of supply. It models the cost of the different options to meet that supply, and … what comes out of it is the way you would connect the demand and the supply together[.][1]

3.3 In its submission, the Australian Energy Market Operator (AEMO) noted that it develops the ISP as part of its functions as the National Transmission Planner, as set out in the National Electricity Law (NEL) and the National Electricity Rules (NER).[2]

3.4 Ms Merryn York, AEMO's Executive General Manager of System Design, told the committee that the first ISP was published in 2018, and that there has been one published every two years since.[3] Ms York further clarified that the ISP originated from the Independent Review into the Future Security of the National Electricity Market (Finkel Review),[4] which recommended that:

> … the Australian Energy Market Operator, supported by transmission network service providers and relevant stakeholders, should develop an

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1 Ms Kirsty Gowans, Head, Electricity Division, Department of Climate Change, Energy, the Environment and Water, *Committee Hansard*, 29 October 2024, p. 41.

2 Australian Energy Market Operator (AEMO), *Submission 14,* p. 9.

3 Ms Merryn York, Executive General Manager, System Design, AEMO, *Committee Hansard* 23 October 2024, p. 5.

4 Ms Merryn York, Executive General Manager, System Design, AEMO, *Committee Hansard* 23 October 2024, p. 5.

integrated grid plan to facilitate the efficient development and connection of renewable energy zones across the National Electricity Market.[5]

3.5 Ms York explained that the ISP rules were developed through a ministerial process, which were 'put into' the NER, resulting in AEMO being charged with the function of developing the ISP.[6]

3.6 In its submission, AEMO noted that this legislative framework in which it prepares the ISP is 'highly prescriptive' and explained that the legislative provisions set out:

- the ISP's purpose;
- the power system needs that the ISP must achieve;
- the Australian Energy Regulator (AER) guidelines that AEMO must comply with when it develops the ISP; and
- requirements related to stakeholder engagement, communications, and the content of the plan.[7]

3.7 AEMO also drew the committee's attention to the AER forecasting and cost benefit analysis guidelines that AEMO must follow when it consults on and prepares the ISP.[8] According to the AER, these guidelines create flexibility for AEMO in how it identifies optimal investments within the ISP, which the AER explained is important 'in a changing market environment where there is significant uncertainty and risks do not remain the same from one ISP to the next'.[9]

3.8 AEMO advised that developing the ISP is a 'complex, multi-stage process', which is illustrated in the figure below.[10]

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5 Commonwealth of Australia, *Independent Review into the Future Security of the National Electricity Market: Blueprint for the Future*, June 2017, p. 24.

6 Ms Merryn York, Executive General Manager, System Design, AEMO, *Committee Hansard* 23 October 2024, p. 5.

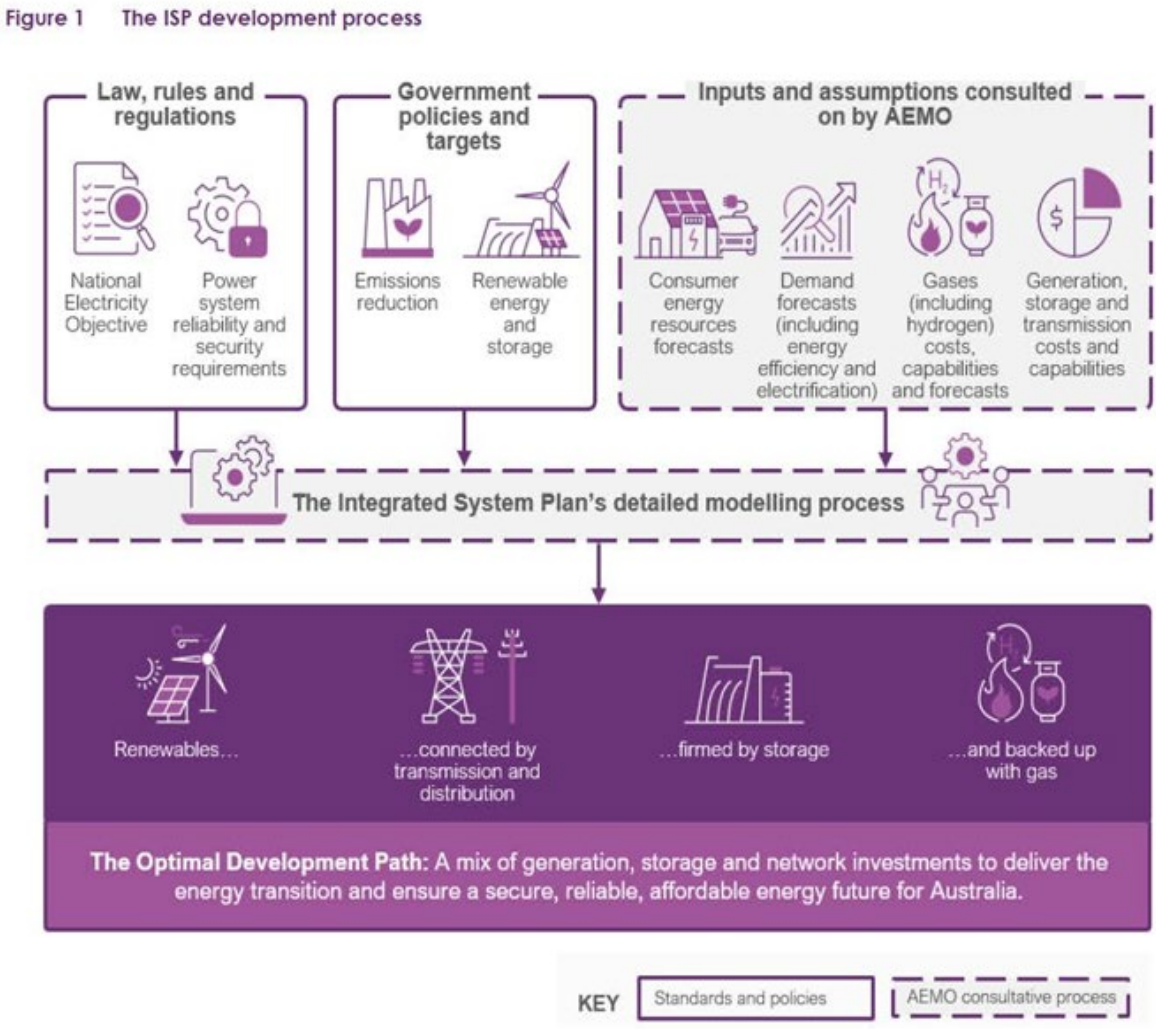
7 AEMO, *Submission 14*, p. 9.

8 AEMO, *Submission 14*, p. 9. Note: The Australian Energy Regulator's Guidelines to make the integrated system plan actionable can be viewed here.

9 Australian Energy Regulator (AER), *Final decision – Guidelines to make the Integrated System Plan actionable*, August 2020, p. 1.

10 AEMO, *Submission 14*, p. 9.

Figure 3.1 The ISP development process



Source: Australian Energy Market Operator, Submission 14, p. 10.

3.9 In its submission, the 2026 ISP Consumer Panel outlined that the Department conducted a review of the ISP, which resulted in the Energy and Climate Change Ministerial Council (ECMC) accepting its 15 recommendations. The 2026 ISP Consumer Panel noted that the areas of focus within the Ministerial response were as follows:

- Integrating gas into the ISP
- Enhancing energy demand forecasting
- Better data on C&I [commercial and industrial] forecasting
- Optimising for the demand side
- Coal fired generation shutdown scenarios
- Improving locational information
- Enhanced analysis of system security
- Jurisdictional policy transparency
- Clarifying policy inclusions
- Improving the accessibility of the ISP
- Incorporating Community sentiment

- Additional Planning inputs.[11]

3.10 The 2026 ISP Consumer Panel 'understands that there are ongoing discussions between AEMO and the Commonwealth on how these recommendations will be applied for the 2026 ISP' and that the 2026 ISP Consumer Panel is discussing many of these recommendations and their application with AEMO.[12]

ISP concerns

3.11 Professor Bruce Mountain, Director of the Victoria Energy Policy Centre, raised that within the context of the ISP, 'central planning is difficult', and contended that:

> …if promises of "optimality" were really pluasible [sic] we might expect it to become the dominant institution across the economy. But it is not. In market economies like Australia's, governments turn to planners as a last resort not a first resort because the long history of central planning is of failure.[13]

3.12 In his submission, Professor Mountain also noted 'evidence that AEMO has produced biased assessments of transmission expansion. This evidence supports my argument that important mistakes have been made.[14] These included, in his view:

(a) That AEMO and Transmission Network Service Providers (TNSPs) have considerable discretion in how they formulate costs and benefits and how they model the power system. Through this discretion they can easily ensure that their modelling and calculations gives them the answers that they are seeking.[15]
(b) None of the jurisdictions in the National Electricity Market (NEM) have any meaningful advantage in renewable electricity production. Although solar yields are higher inland and to the north, solar panels are now so cheap, the cost of shipping what is slightly cheaper solar from Queensland to Victoria is obviously not viable.[16]
(c) Likewise wind yields in all NEM regions is approximately comparable with the exception of Tasmania which has a state-wide yield advantage of around 5 per cent compared to Victoria. Tasmania however has a cost disadvantage and so its net advantage relative to the mainland is likely to

11 2026 ISP Consumer Panel, *Submission 76*, pp. 13–14.

12 2026 ISP Consumer Panel, *Submission 76*, p. 14.

13 Professor Bruce Mountain, *Submission 8*, p. 7.

14 Professor Bruce Mountain, *Submission 8*, p. 6.

15 Professor Bruce Mountain, *Submission 8*, p. 9

16 Professor Bruce Mountain, *Submission 8*, p. 20

> be small and so not able to defray the huge cost of interconnection needed to make that wind generation available to Victoria.[17]

3.13 Similarly, Erne Energy criticised AEMO's role within the energy industry, as well as the ISP, and raised that this could have implications for the timely transition to Australia's to renewable energy:

> AEMO remains one of the least trusted entities in the energy industry and this lack of trust will delay the clean energy transition and is already being leveraged for political purposes around the veracity of the assumptions that underpin the ISP.[18]

3.14 The following sections examine how AEMO develops the ISP by considering how it accounts for government policies and targets, its modelling processes and software, its consultation mechanisms, and the processes associated with deeming ISP projects 'actionable'. Corresponding concerns raised by inquiry participants are considered in each section.

Government policies and targets

3.15 AEMO advised that the ISP is a development plan for the National Electricity Market power system to meet reliability and security needs, whilst also supporting the achievement of the National Electricity Objective.[19]

3.16 AEMO further explained that the ISP sets out the required generation, firming, and transmission infrastructure to transition the National Electricity Market in a manner that reflects current government policy settings.[20]

3.17 Mr Daniel Westerman, Chief Executive Officer of AEMO, elaborated by telling the committee that the ISP requires AEMO to find, within the parameters of the meeting the government's net zero targets by 2050, 'the lowest cost pathway for meeting reliability and security of the power system at each point through to 2050'. Mr Westerman emphasised that this is the output of the ISP.[21]

Role of the AEMC

3.18 Further, under the NER, AEMO must model the policies in the Australian Energy Market Commission's (AEMC) Emissions Targets Statement (which the AEMO clarified is the governments' emissions reductions targets) and may also model additional policy that meets certain criteria.[22]

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17 Professor Bruce Mountain, *Submission 8,* p. 20

18 Erne Energy, *Submission 32,* [p. 4]. Citations omitted.

19 AEMO, *Submission 14,* p. 9.

20 AEMO, *Submission 14,* p. 9.

21 Mr Daniel Westerman, Chief Executive Officer, AEMO, *Committee Hansard,* 23 October 2024, p. 4.

22 AEMO, *Submission 14,* p. 9.

3.19 Ms Anna Collyer, Chair of the AEMC, told the committee that the AEMC's role is to 'set the frameworks under which AEMO and the AER do their work, but also to provide…the framework for investment'.[23]

3.20 Ms Collyer elaborated that the wholesale market, for example, is 'defined extensively' by AEMC's rules and commented that it's 'not a market that exists outside the rules; it is created by the rules'.[24]

3.21 Ms Collyer concluded that the AEMC does not have a role in planning, and that it is 'limited to setting the frameworks'.[25]

Influence of government policy

3.22 Some submitters were critical of the influence of government policy on AEMO. For instance, the University of New South Wales (UNSW) Collaboration on Energy and Environmental Markets submitted that AEMO is 'increasingly incorporating' government policy into its processes, 'despite AEMO being viewed as independent and at arm's length from government'.[26]

3.23 When considering accounting for government policies in the ISP, Professor Stephen Wilson, Visiting Fellow at the Institute of Public Affairs (IPA), similarly raised with the committee that he believes that:

> …the question is whether AEMO is truly independent. Is its role independent of government or not? I had understood it was intended to be, but I think that is an open question now.[27]

3.24 Relatedly, Coalition for Conservation argued that the ISP's outputs are too constrained by the government of the day:

> The ISP outputs in recent years have been heavily influenced (indeed, largely predetermined) by the arbitrary influence of governments, through politically driven, technology-specific targets. As there is no governance around the review or setting of targets, and targets can in theory be introduced for political (as opposed to planning) purposes, this approach to setting ISP constraints appears to be broken.[28]

3.25 The Grattan Institute also contended that AEMO is 'effectively required to take into account things that individual jurisdictions have decided', which results in

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23 Ms Anna Collyer, Chair, Australian Energy Market Commission (AEMC), *Committee Hansard,* 23 October 2024, p. 51.

24 Ms Anna Collyer, Chair, AEMC, *Committee Hansard,* 23 October 2024, p. 51.

25 Ms Anna Collyer, Chair, AEMC, *Committee Hansard,* 23 October 2024, p. 51.

26 UNSW Collaboration on Energy and Environmental Markets, *Submission 80,* p. 6.

27 Adjunct Professor Stephen Wilson, Visiting Fellow, Institute of Public Affairs, *Committee Hansard*, 29 October 2024, p. 21.

28 Coalition for Conservation, *Submission 25*, pp. 3–4.

an 'optimal constrained plan' that may not be the optimal plan to 'get us to net zero'.[29]

Accounting for emissions reductions within the National Energy Objectives

3.26 These concerns were also raised by the Centre for Independent Studies (CIS) at a public hearing and within its submission, specifically in relation to how the National Energy Objectives (NEOs) are accounted for within the ISP.

3.27 For instance, the CIS was critical of the use of government emissions targets as the foundation of the ISP:

> What AEMO has done in interpreting the consideration of the government emissions targets to become a binding constrain-all scenario has absolutely abrogated the principle that all of the different parts of the national electricity objectives be considered in conjunction.[30]

3.28 The CIS further signalled that while it agrees that emissions reduction should be accounted for in the NEOs, it also raised its 'deep disagreement' with the way that emissions reductions have been interpreted in the ISP. CIS emphasised that this has:

> …essentially privileged one of the objectives above all the others. It's not unreasonable to say that we include that as an objective, but it must be considered in conjunction, and there should be clear exposure of the trade-offs between the objectives.[31]

ISP interpretation concerns

3.29 Some submitters also raised concerns regarding how the ISP is interpreted due to the influence of government policy. For instance, the Australian Energy Council described how the ISP models of how emissions *could* be reduced are misleading and easily misread as a model of how emissions *will* be reduced:

> Currently, AEMO must take the emissions reductions policies of Government as an input and derive an optimal development path consistent with achieving those policies. The ISP models what would need to happen to achieve the policy goals, but is often mis-interpreted as what will happen in practice.[32]

3.30 The Australian Energy Council therefore recommended AEMO offer more context for the benefit of stakeholders:

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[29] Mr Tony Wood, Program Director, Energy and Climate Change, Grattan Institute, *Committee Hansard*, 31 October 2024, p. 12.

[30] Mr Aidan Morrison, Director of Energy Research, Centre for Independent Studies, *Committee Hansard*, 31 October 2024, p. 30.

[31] Mr Aidan Morrison, Director of Energy Research, Centre for Independent Studies, *Committee Hansard*, 31 October 2024, p. 33.

[32] Australian Energy Council, *Submission 2*, [p. 4].

> To bridge this gap, it is critical that AEMO 'book end' the scenarios by modelling its best estimate of how the future will turn out. Absent this, stakeholders and particularly consumers and governments do not have access to the best available information, which ultimately impacts the integrity of the ISP.[33]

3.31 Expanding on this point, the Grattan Institute described issues such modelling could cause for stakeholders in the market, noting what governments and corporations are interested in:

> … what I think governments and, in the case of corporations, boards are interested in isn't: is this forecast accurate? What they're concerned about is: if we support this investment in transmission, which of those assumptions that have been made has caused that result to happen? If those assumptions aren't true, are there plausible situations in which this is a really bad idea?[34]

Modelling

3.32 AEMO develops the ISP over two years through a 'rigorous integrated modelling process and extensive consultation with industry, government, and consumer advocates'.[35]

3.33 In its submission, AEMO outlined the preparatory steps that it takes under the rules when developing the ISP. It publishes an ISP Methodology and an Inputs, Assumptions and Scenarios Report (IASR), which it prepares in line with the AER's Forecasting Best Practice Guidelines.[36]

3.34 The IASR accounts for a range of inputs, including:

> … consumer investment in their own energy systems, energy efficiency, electrification of transport, heating, cooling, and cooking, hydrogen industry development, costs for new transmission, generation and storage technologies, and inclusion of projects already underway for delivery.[37]

3.35 When developing the draft and final ISP, AEMO applies the ISP Methodology in line with the AER's Forecasting Best Practice Guidelines. AEMO noted that the ISP explores 'a broad range of future scenarios to determine an Optimal Development Path (ODP) for the NEM'.[38]

3.36 AEMO expanded that the ODP represents the 'optimal mix of generation, storage, and transmission to meet the NEM power system's reliability and security needs, in alignment with the policies, and at the lowest system cost'.

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33 Australian Energy Council, *Submission 2*, [p. 4].

34 Mr Tony Wood, Program Director, Energy and Climate Change, Grattan Institute, *Committee Hansard*, 31 October 2024, p. 15.

35 AEMO, *Submission 14*, p. 9.

36 AEMO, *Submission 14*, p. 9.

37 AEMO, *Submission 14*, p. 9.

38 AEMO, *Submission 14*, p. 9.

Further, the ODP sets out the optimal 'size, place, and timing for the NEM's future assets based on the inputs'.[39]

3.37 For instance, the 2024 ISP generates an ODP for the Australian energy market, tested against three different future scenarios leading up to 2050:

- Step Change, which fulfils Australia's emission reduction commitments in a growing economy;
- Progressive Change, which reflects slower economic growth and energy investment with economic and international factors placing industrial demands at greater risk and slower decarbonisation action beyond current commitments; and
- Green Energy Exports, which sees very strong industrial decarbonisation and low-emission energy exports.[40]

3.38 The Department also told the committee that AEMO uses PLEXOS to model the ISP, which is an electricity market modelling tool.[41] The Department further noted that AEMO publishes 'quite a lot of information' about the assumptions that it uses when modelling the ISP.[42]

Transparency and accessibility of the ISP modelling

3.39 Some submitters held concerns related to the ISP modelling, specifically in relation to PLEXOS and the publication of information. For example, the UNSW Collaboration on Energy and Environmental Markets noted that the ISP modelling data is made publicly available but is published in PLEXOS input and Microsoft Excel formats. It contended that while the PLEXOS file format makes the reuse of ISP inputs 'very straightforward' for ISP users, the Excel format 'employs data practices that make reusing this data with alternative modelling software challenging'.[43]

3.40 It further identified that the costs associated with PLEXOS licensing could impose a further barrier to participate in modelling:

> Given the costs associated with PLEXOS licensing, the publication of ISP input data in these formats may implicitly impose a barrier to participation in the planning process by limiting which stakeholders can participate in an

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39 AEMO, *Submission 14*, pp. 9–10.

40 Australian Energy Market Operator, *2024 Integrated System Plan for the National Electricity Market*, p. 8.

41 Mr Simon Duggan, Deputy Secretary, Department of Climate Change, Energy, the Environment and Water, *Committee Hansard*, 29 October 2024, p. 33.

42 Mr Adam McKissack, Chief Energy Economist, Office of Energy Economics, Department of Climate Change, Energy, the Environment and Water, *Committee Hansard*, 29 October 2024, p. 34.

43 UNSW Collaboration on Energy and Environmental Markets, *Submission 80*, p. 9.

> in-depth review of the ISP, assess the impact of various assumptions and explore alternative scenarios.[44]

3.41 Similar concerns were raised by Dr Robert Barr, who was unable to reach the same results as AEMO with his own modelling, and as such advocated for greater clarity from AEMO:

> It's impossible to get the model exactly as AEMO have it, because I've got one set of conditions here and they've got their own … They do publish a lot, and I interpret it as best I can. What's lacking is communication, across the table, of how they're actually doing things. That's what I would really welcome with AEMO.[45]

3.42 The UNSW Collaboration on Energy and Environmental Markets also described its desire to think about challenges to the energy system, and its frustration that it was unable to use AEMO's work to do so.[46]

3.43 However, AEMO stated that it 'publishes all the information necessary to reproduce the ISP results', and that the only prerequisites necessary to execute the modelling are 'a licenced copy of PLEXOS and a computer with enough memory (currently around 128GB)'.[47]

3.44 Beyond the issue of accessibility, the UNSW Collaboration on Energy and Environmental Markets also voiced concern that reliance on such software could hinder AEMO's analysis, contending that the dominance of a single modelling software and approach could encourage an 'analytical monoculture', potentially leading to a planning process that is less robust.[48]

3.45 While the committee heard from AEMO that all the inputs into the ISP are made public in the IASR, there was still concern expressed by participants in the inquiry about the modelling technology and the 'black box' issue,[49] referring to opacity around the relation between the inputs AEMO receives and the outputs it produces.

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44 UNSW Collaboration on Energy and Environmental Markets, *Submission 80*, p. 9.

45 Dr Robert Barr, Director, Electric Power Consulting Pty Ltd, *Committee Hansard*, 29 October 2024, p. 30.

46 Dr Dylan McConnell, Senior Research Associate, University of New South Wales, *Committee Hansard*, 29 October 2024, p. 9.

47 Department of Climate Change, Energy, the Environment and Water, answers to questions on notice, 29 October 2024 (received 2 December 2024).

48 UNSW Collaboration on Energy and Environmental Markets, *Submission 80*, p. 9. Citations omitted.

49 Professor Bruce Mountain, *Committee Hansard*, 31 October 2024, p. 6.

3.46 The UNSW Collaboration on Energy and Environmental Markets for example, agreed with the suggestion that this 'black box granularity' was equivalent to 'a lack of accountability'.[50]

3.47 Professor Bruce Mountain was also critical of the 'black box' issue of the ISP, arguing that it is unable to 'give a clear answer on the first-principle economics'.[51]

3.48 The UNSW Collaboration on Energy and Environmental Markets further noted that an increasing adoption of 'opening modelling practices internationally' has led to a growing set of 'high quality open-source and freely available electricity system planning tools' becoming available. As a result, it raised that if the ISP datasets were published in a more accessible manner (such as machine-readable input data), these tools could be used alongside PLEXOS to 'better explore methodological improvements and a diverse set of alternative approaches'.[52]

3.49 In an answer to a question on notice, the Department provided the following reasoning for using the software:

> PLEXOS is used by a wide variety of customers across the globe, including system operators, utilities, regulators, academics, consultants, and developers. Licence costs vary depending on the use case and the customer type, location and size.
>
> For the energy modelling conducted by the Department of Climate Change, Energy, the Environment and Water, PLEXOS licences currently cost an average of $71,000 per user annually.
>
> PLEXOS is also available with lower-cost license categories. For example, we understand that Energy Exemplar offers academic licenses for both student and research use cases.[53]

Investment assessments

3.50 The committee received evidence in relation to an increase in capital expenditure (capex) by distribution services, and the implications this will have for energy costs for consumers. The committee also received evidence in relation to whether the ISP adequately accounts for capex in its modelling.

3.51 Mrs Clare Savage, Chair, AER, told the committee that:

> …we are seeing significant proposed capital expenditure increases in the distribution system. The distribution system is a much larger share of a customer's bill than transmission. There are some very valid reasons for this

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50 Dr Dylan McConnell, Senior Research Associate, University of New South Wales, *Committee Hansard*, 29 October 2024, p. 9.

51 Professor Bruce Mountain, Private Capacity, *Committee Hansard*, 31 October 2024, p. 6.

52 UNSW Collaboration on Energy and Environmental Markets, *Submission 80*, p. 9.

53 Department of Climate Change, Energy, the Environment and Water, answers to questions on notice, 29 October 2024 (received 2 December 2024).

> proposed increase in capex, such as improving cybersecurity or climate resilience and augmenting the system for new sources of demand, such as data centres, digitalisation upgrades and the integration of rooftop solar and batteries. There is also latent capacity sitting in our distribution system, with network utilisation sitting at just 43 per cent. It is vital that before we build more network infrastructure we use more network infrastructure.[54]

3.52 Mrs Savage told the committee that the AER is currently assessing a number of project proposals which have proposed increases in capex of between 18 and 100 per cent compared to the proponents' approved capex over the past five-year period. Mrs Savage concluded, 'no-one at this point in the current sets of business proposals in front of us is proposing a reduction in capex'.[55]

3.53 Mrs Savage explained that the AER is also seeing 'seeing increased expenditure around the integration of new sources of demand—data centres in particular—and the integration of solar and batteries'.[56]

3.54 However, the CIS contended that the ISP does not account for the costs associated with the 'significant capital expenditure' that will 'be required to upgrade distribution networks to ensure grid stability as CER installations grows'.[57] Similarly, the Independent Engineers, Scientists and Professionals (IESP) described the capital costs in the ISP as 'misleading,' arguing that the true cost is much higher and that AEMO's model is 'by far the most expensive pathway to a future NEM'.[58]

3.55 The AER also makes determinations regarding the maximum amount of revenue that energy companies can earn from customers over a five-year period.[59] The Electrical Trades Union of Australia (ETU) was critical of the AER's revenue determination processes and described them as 'another exercise that makes sense at the surface level but has consistently driven worse outcomes when put into practice'.[60]

3.56 The ETU submitted that while energy companies engage in the lengthy and expensive approvals process, there is nevertheless no obligation for them to perform the work outlined in forecasted budgets. The ETU stated:

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54 Mrs Clare Savage, Chair, AER, *Committee Hansard*, 23 October 2024, p. 29.

55 Mrs Clare Savage, Chair, AER, *Committee Hansard*, 23 October 2024, p. 33.

56 Mrs Clare Savage, Chair, AER, *Committee Hansard*, 23 October 2024, p. 33.

57 Centre for Independent Studies, *Submission 3*, Supplementary Submission 2, p. 11.

58 Independent Engineers, Scientists and Professionals, *Submission 7*, p. 4.

59 AER, Determinations and access arrangements | Australian Energy Regulator (AER), (accessed 11 December 2024)

60 Electrical Trades Union of Australia, *Submission 4*, p. 4.

> Meanwhile the regulator applies ever increasing scrutiny on operational and capital budgets while largely ignoring the burgeoning unproductive overhead costs.
>
> Through applying a narrow framing of short-term economic efficiency, these determinations restrain networks from investing in proactive maintenance, workforce skills, and timely asset upgrades by only allowing razor-thin budgets for the actual meaningful work that is needed on the network – all under the guise of saving costs for consumers, none of which the consumer experiences on their actual power bill.[61]

3.57 The ETU concluded:

> Privatised network service providers that underinvest in maintenance, upgrades, staffing, and training are routinely held up as examples of best practice management by the AER and used to force a NEM-wide race to the bottom. This approach is not only short-sighted, but also self-defeating.[62]

Consultation process

3.58 According to AEMO, extensive consultation is undertaken throughout the development process of the ISP, including on the Draft ISP Methodology, Draft IASR and the Draft ISP itself.[63]

3.59 For example, to develop the 2024 ISP, AEMO explained that it regularly engaged stakeholders from July 2022 to June 2024. It noted that over this period, AEMO engaged with over 2100 stakeholders, gave 85 presentations to stakeholders through five consultation stages, and considered 220 written submissions.[64]

3.60 AEMO stated that its engagement begun with consulting on inputs, assumptions, and scenarios, and how they are applied within the ISP modelling. Then, AEMO engaged on the findings of the Draft 2024 ISP and its reasoning, considerations and analysis that supported the selection of the ODP.[65]

3.61 AEMO drew the committee's attention to the 2024 ISP Consultation Summary Report, that details how stakeholder feedback was considered and adopted where appropriate.[66]

Consumer representation

3.62 AEMO also pointed to several bodies that it consults with to account for consumer views and preferences in the ISP, including its Advisory Council on

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61 Electrical Trades Union of Australia, *Submission 4*, p. 5.

62 Electrical Trades Union of Australia, *Submission 4*, p. 5.

63 AEMO, *Submission 14*, p. 10.

64 AEMO, *Submission 14*, p. 11.

65 AEMO, *Submission 14*, p. 11.

66 AEMO, *Submission 14*, p. 11.

Social Licence, the Consumer and Community Reference Group, and the ISP Consumer Panel.

3.63 AEMO's Advisory Council on Social Licence (ACSL) was established in 2022 and serves 'as a strategic advisory body to AEMO on social licence related to business planning, policy, reform and advocacy matters.'[67]

3.64 Additionally, AEMO made note of its Consumer and Community Reference Group (CCRG), established in October 2024, which 'seeks to further bring the views and voices of everyday Australians, businesses, and communities into AEMO'.[68]

3.65 AEMO further explained that under the NER, it must establish a dedicated ISP Consumer Panel which must consist of at least three AEMO appointed members that are 'suitably qualified' to assess the quality of the ISP and have experience representing consumer interests.[69]

3.66 Throughout the 2024 ISP development process, the ISP Consumer Panel collaborated with AEMO and made a range of recommendations on the preparation of the ISP, as well as suggested improvements for the 2026 ISP process.[70]

3.67 Independently, the 2026 ISP Consumer Panel made a submission to this inquiry, outlining its role in the development of the ISP. The Panel described its purview as encompassing the following three stakeholder groups:

(a) Landowners hosting energy infrastructure, including transmission lines;
(b) Communities and neighbours of properties hosting energy infrastructure; and
(c) The wider Australian public, as both consumers and society.[71]

3.68 The Panel was largely positive about its role in developing the ISP, describing the instituted processes of written feedback and regular meetings with AEMO,[72] while still urging a greater role for consumers and greater consideration of consumer energy resources (CER).[73]

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67 AEMO, *Submission 14*, p. 16.

68 AEMO, *Submission 14*, p. 16.

69 AEMO, *Submission 14*, p. 11.

70 AEMO, *Submission 14*, p. 11.

71 2026 ISP Consumer Panel, *Submission 76*, p. 15.

72 2026 ISP Consumer Panel, *Submission 76*, pp. 8–9.

73 2026 ISP Consumer Panel, *Submission 76*, p. 14.

Community perceptions of AEMO's ISP consultation processes

3.69 Some submitters expressed frustration with the consultation processes which AEMO uses to develop the ISP.[74] For instance, Gamma Energy Technology described AEMO as 'a very closed shop, in terms of how their model works', going on to say they were unable to have meaningful input into the ISP.[75]

3.70 Erne Energy similarly argued that AEMO's consultation processes are 'poorly advertised' and that it receives a 'very small number of submissions' in which AEMO dismisses 'views contrary to its own'.[76] Erne Energy went on to suggest that:

> When AEMO does engage with stakeholders, they are typically selected by AEMO for working groups rather than welcoming the broadest range of views, particularly from consumers. This means that many of decisions on how the market and technical requirements are designed are made behind closed doors and commit consumers and market participants to funding many hundreds of millions of dollars of investment (e.g. NEM 2025).[77]

3.71 Professor Mountain argued the same in stating, 'this was one of several points we made in a detailed 118 page critique of AEMO's "Options Assessment" of VNI West. AEMO did not respond to our critique'.[78]

3.72 Mr Barrie Hill argued that such issues were related to a structural problem in the ISP, namely, that 'there is no mandate for the submissions received to be carefully analysed and where appropriate incorporated in the final planning documents'.[79]

3.73 However, AEMO defended the transparency and accountability of its consultation processes:

> We publish the submissions that we receive. We also provide a consultation summary report—we prepare a document that gives a summary of what feedback we've received through consultation and also what we've done with it. Where we've changed something, we will make public what we've done with it.[80]

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74 See, for example, Dr Robert Barr, Director, Electric Power Consulting Pty Ltd, *Committee Hansard*, 29 October 2024, p. 30; Dr Geoffrey Bongers, Director, Gamma Energy Technology, *Committee Hansard*, 29 October 2024, p. 30; Mr Barrie Hill, *Submission 46*, p. 4.

75 Dr Geoffrey Bongers, Director, Gamma Energy Technology, *Committee Hansard*, 29 October 2024, p. 30.

76 Erne Energy, *Submission 32*, [p. 2].

77 Erne Energy, *Submission 32*, [p. 2].

78 Professor Bruce Mountain, *Submission 8*, p. 14.

79 Mr Barrie Hill, *Submission 46*, p. 4

80 Ms Merryn York, Executive General Manager, System Design, AEMO, *Committee Hansard* 23 October 2024, p. 12.

3.74 The Energy Grid Alliance identified an additional issue in which the outcomes of previous ISP-associated reports, such as the IASR, are 'considered fixed inputs into the ISP'. Energy Grid Alliance observed that as a result:

> This structure prevents stakeholders from questioning or addressing findings from prior reports during the ISP consultation phase. Even if serious concerns regarding errors or omissions in the IASR are raised during the ISP consultation, AEMO can dismiss these issues by citing the closure of the previous consultation process.[81]

3.75 Energy Grid Alliance concluded that the 'lack of interconnectivity between consultations results in legitimate concerns remaining unaddressed, silencing critical feedback'.[82]

Actionable ISP projects

3.76 In its submission, AEMO explained that the ISP also serves a 'specific regulatory purpose in triggering statutory requirements for proposed transmission projects identified in the ODP in the ISP as "actionable ISP projects"'.[83]

3.77 The AER explained the relevant processes associated with the ISP and actionable projects:

> The ISP now identifies [actionable] projects, which are defined under the NER as those which are required to meet an identified need as part of the optimal development path for the national electricity market. In preparing an ISP, AEMO undertakes a cost-benefit analysis to identify an optimal development path for the power system, chosen from a range of development path options. The optimal development path contains a set of actionable projects that together address power system needs.[84]

3.78 The AER then highlighted that options for delivering actionable projects are considered through a two-stage Regulatory Investment Test for Transmission (RIT-T).

3.79 Ms York, AEMO, clarified that it is the proponent of the project that runs the RIT-T, and noted that this has:

> …a series of consultation steps, again, set out in the rules. If that passes the RIT-T then the proponent of that transmission project would apply to the AER, generally, for a contingent project assessment, and that's where the revenue for that project would be determined.

3.80 The AER noted that the RIT-T includes the completion of a Project Assessment Draft Report (PADR) within two years of the final ISP being published, which the proponent must consult on before it completes a Project Assessment

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81 Energy Grid Alliance, *Submission 54*, [p. 5].

82 Energy Grid Alliance, *Submission 54*, [p. 5].

83 AEMO, *Submission 14*, p. 11.

84 AER, *Submission 15*, pp. 11–12.

Conclusions Report (PACR). Further, according to the AER, the PACR responds to consultation feedback and identifies the preferred option for the project. Then, AEMO checks that the preferred option is aligned with ODP (this step is referred to as the feedback loop).[85]

3.81 AEMO also clarified that it is provided the PADR and PACR documents to publish on its website 'purely for visibility purposes' and that AEMO does not:

> …do any assessment of the proponent's assessment until we get to the feedback loop, and that's obviously at the PACR stage, where we are required to provide confirmation if it's still part of whatever the latest optimal development path in the latest integrated system plan is. These RIT-Ts can take a bit of time to work their way through. The regulatory framework is requiring that feedback loop. It's literally a confirmation of, 'Is that project still part of the optimal development path or not?'[86]

3.82 The AER concluded that an 'actionable ISP project that has completed both stages of the RIT-T and the ISP feedback loop is eligible to commence a contingent project process for that preferred option'.[87]

3.83 AEMO explained that identifying the 'preferred option' is the primary purpose of the RIT-T:

> The main purpose of the RIT-T is to require the TNSP to identify the "preferred option", which the NER defines as the credible option that maximises the present value of net economic benefit for consumers. Following completion of the RIT-T, the TNSP must obtain AEMO's confirmation that the preferred option remains aligned with the ODP in the most recent ISP before applying to the AER for a revenue determination.[88]

3.84 The AER also noted that clause 5.16.6 in the NER was removed in April 2020. Under this clause, the AER used to make a determination on 'whether a preferred option was the option that essentially maximised the net economic benefit under the RIT-T'.[89]

3.85 AEMO clarified that investment in other aspects of the ODP are subject to the decisions of market participants and developers.[90]

3.86 The above steps associated with actionable projects and RIT-T are illustrated in the figure below:

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85 AER, *Submission 15*, pp. 12–13.

86 Ms Merryn York, Executive General Manager, System Design, AEMO, *Committee Hansard*, 23 October 2024, p. 10.

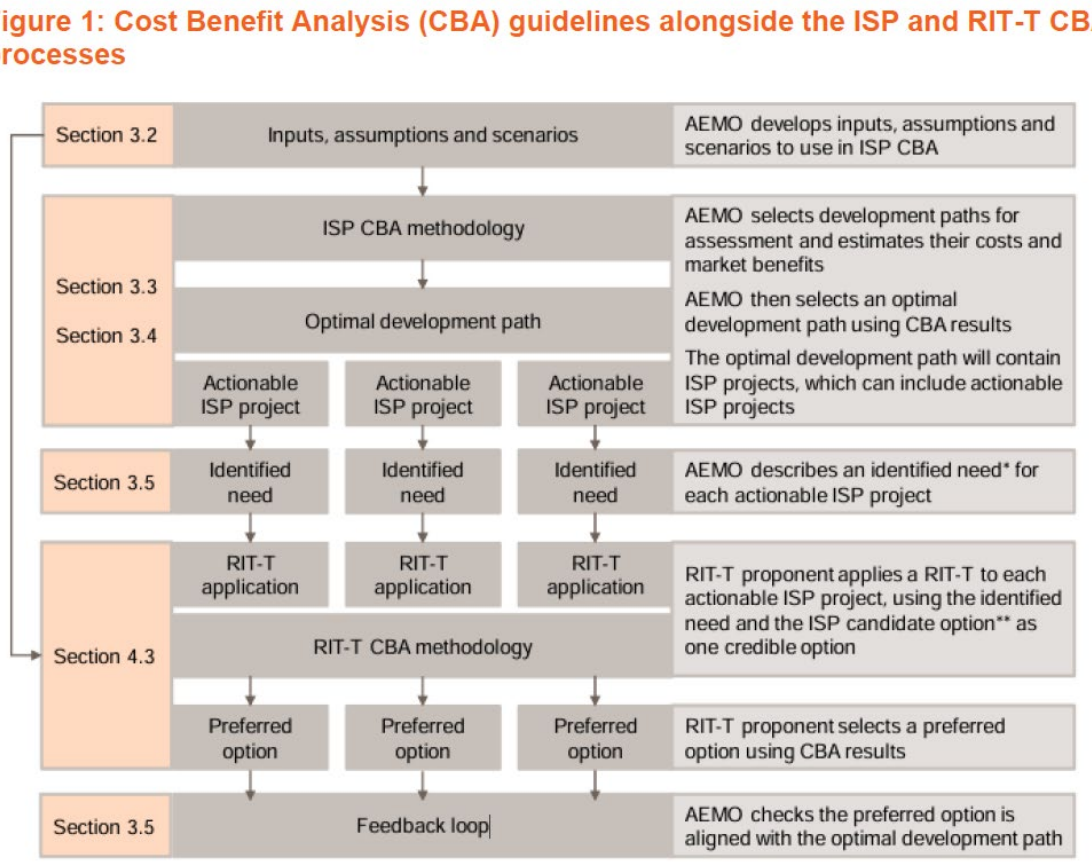
87 AER, *Submission 15*, p. 12.

88 AEMO, *Submission 14*, p. 11.

89 Mrs Clare Savage, Chair, AER, *Committee Hansard*, 23 October 2024, p. 39.

90 AEMO, *Submission 14*, p. 11.

Figure 3.2 ISP and RIT-T processes



Source: AER, Submission 15, p. 13.

Concerns regarding the impact of deeming projects actionable

3.87 Some inquiry participants discussed the impact of AEMO deeming projects 'actionable' under the ISP. For instance, in Professor Mountain's view, this power has given AEMO a 'monopoly on NEM-wide transmission planning'. Professor Mountain further contended that when AEMO determines transmission projects to be actionable, they are:

> …authorised for development, and for their costs as approved by the Australian Energy Regulator to be recovered from electricity consumers, and for their social costs to be imposed on the community and individual land holders.[91]

3.88 Mr Ted Woodley also argued that the ISP process has become 'far more directive and promotes transmission projects that, once declared actionable, are effectively guaranteed to proceed'.[92]

3.89 CIS also critiqued AEMO's ability to designate projects as actionable, arguing that AEMO has 'used its judgement to accelerate a number of transmission projects ahead of the timing suggested by its models', which CIS contended has

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91 Professor Bruce Mountain, *Submission 8*, p. 6.

92 Mr Ted Woodley, *Submission 6*, p. 6.

resulted in 'unnecessarily early costs and additional pressure on Australia's supply chains and limited skilled labour in an already inflationary period'. CIS concluded that 'unsurprisingly, this acceleration is increasingly leading to unnecessary cost blowouts and delays'.[93]

3.90 However, Mr Daniel Westerman, AEMO's Chief Executive Officer, clarified the processes under the ISP by telling the committee that the ISP does not approve projects, 'it simply identifies them as actionable'. Mr Westerman further commented that:

> The Integrated System Plan lays out what's needed to deliver secure, reliable electricity to consumers along the way to meeting those targets at every point in time. What it's not—it's not an authorisation to go ahead. Companies need to make those investment decisions themselves.[94]

3.91 This is disputed by Professor Mountain who gave evidence that:

> The "Actionable ISP Rule Changes" have given AEMO a monopoly on NEM-wide transmission planning. It means that transmission projects that AEMO determines to be "actionable" are thereby authorised for development, and for their costs as approved by the Australian Energy Regulator to be recovered from electricity consumers, and for their social costs to be imposed on the community and individual land holders.[95]

RIT-T concerns

3.92 Professor Mountain was also critical of the use of cost-benefit analysis, arguing that it was not a reasonable methodology to apply to electricity projects as it does not include what Professor Mountain described as 'social cost', including 'impacts on owners of land, on forests'.[96] Instead, Professor Mountain argued that there must be new 'institutions of government that can respond to this and can arrive at different solutions that properly account for all the wide economywide factors'.[97]

3.93 Professor Mountain also emphasised that, in his view, the 'main point here is that AEMO and TNSPs have considerable discretion in how they formulate costs and benefits and how they model the power system.' He further argued that through 'this discretion they can easily ensure that their modelling and calculations gives them the answers that they are seeking'.[98]

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93 Centre for Independent Studies, *Submission 3*, Supplementary Submission 2, p. 6.

94 Mr Daniel Westerman, Chief Executive Officer, AEMO, *Committee Hansard*, 23 October 2024, p. 9.

95 Professor Bruce Mountain, *Submission* 8, p. 6

96 Professor Bruce Mountain, *Committee Hansard,* 31 October 2024, p. 10.

97 Professor Bruce Mountain, *Committee Hansard,* 31 October 2024, p. 10.

98 Professor Bruce Mountain, *Submission 8*, p. 9.

3.94 Similarly, the Electrical Trades Union (ETU) submitted that 'it is deeply concerned with the limitations imposed through the RIT-T process to deliver fit for purpose transmission and expansion'. The ETU argued that the current interpretation of 'a narrow economic test prevents a barrier to every single effort to decarbonise the energy sector in a way that delivers community support, social licence, and broad economic benefits'. It submitted:

> Transmission companies cannot get new transmission construction approvals or modify projects to address or avoid social licence issues which may arise. Investment programs are uncoordinated and do not seek to maximise national economic benefits, both in terms of the supply chain as well as in terms of jobs, skills and training.[99]

3.95 The ETU concluded that 'where social licence and other community concerns emerge, the current regulatory process means that the AER cannot consider deviations from the least-cost route to avoid areas of significant concern'.[100]

Alternative modelling scenarios

3.96 As outlined earlier in the chapter, all the ISP models produced by AEMO are designed to meet the NEOs. When asked about the possibility of developing alternative ISP models, AEMO reaffirmed that it was only permitted 'to take those policies as set out in the target statement as an input', and then produce 'the lowest cost way to get to net zero by 2050'.[101] Nevertheless, as discussed above, this sparked criticism from some inquiry participants about AEMO's lack of independence from government.[102]

3.97 The inquiry consistently heard that AEMO should model a broader range of scenarios than the three in the current ISP (Step Change, Progressive Change and Green Energy Exports).[103]

3.98 The nature of alternatives varied greatly, including different energy sources, and more focus on the interests of consumers within the energy market. The various perspectives and alternatives raised are discussed in the section below.

Energy sources

3.99 Over the course of the inquiry, discussions of the ISP and project planning often led to discussions of different energy sources, including some which AEMO is

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99 Electrical Trades Union of Australia, *Submission 4*, p. 3.

100 Electrical Trades Union of Australia, *Submission 4*, p. 3.

101 Ms Merryn York, Executive General Manager, System Design, AEMO, *Committee Hansard*, 23 October 2024, p. 5.

102 See, for example, Coalition for Conservation, *Submission 25*, pp. 3-4; Mr Aidan Morrison, Director of Energy Research, Centre for Independent Studies, *Committee Hansard*, 31 October 2024, p. 30.

103 See, for example, The Justice and Equity Centre, *Submission 28*, p. 5; Southerly Ten, *Submission 30*, pp. 1–2; Rewiring Australia, *Submission 78*, pp. 3, 7.

not currently in a position to model or plan for (see discussion of ISP at the beginning of this chapter). These ideas are discussed in the following sections.

Technology neutral

3.100 Some participants in the inquiry were critical of what they viewed as an unjustified bias on the part of AEMO towards renewable energy sources. The arguments for a technologically agnostic perspective are canvassed below.

3.101 The Australian Energy Council, which described itself as having a 'technology neutral perspective', advocated for the ISP to take a similar approach. However, its view was that the decision to include other forms of technology was not with AEMO but with lawmakers:

> To the extent the framework is that there's a moratorium on nuclear power, I think some of our CEOs are on the record as saying that if they are actively exploring rolling out nuclear power, they are not focusing on their day job. If policymakers were to change that approach at some point in the future, I think there would be interest in exploring it. Generally speaking, killing off options and taking options off the table in an environment where there's uncertainty over the next 10 or 20 years isn't advisable.[104]

3.102 Dr Geoffrey Bongers, Director at Gamma Energy Technology, for example, argued that AEMO should not exclude any technologies from the ISP:

> My issue with the ISP is the question that they have asked in the first place and chosen to model. Why have they restricted the technologies to wind, solar, batteries and gas backup? What about carbon capture and storage? What about looking at nuclear? Even though it is currently illegal, they could still do it as a scenario.[105]

3.103 However, Dr David Carland from the Australian Resources Pty Ltd stated that some technologies, such as coal, were not formally excluded from the ISP but could not feasibly be included in a model to meet Australia's NEOs:

> Under the ISP, the national electricity objective is to meet emissions targets. In that environment, going ahead and building new coal plants is not within, if you like, the remit of AEMO. Would it be a cheaper outcome? It is something we could go away and test. It will certainly blow the emissions.[106]

3.104 AEMO similarly explained to the committee that it was technology agnostic in its approach to modelling but that it had to meet the emissions objectives of each jurisdiction:

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[104] Mr David Feeney, General Manager, Wholesale and Environment, Australian Energy Council, *Committee Hansard*, 30 October 2024, p. 5.

[105] Dr Geoffrey Bongers, Director, Gamma Energy Technology, *Committee Hansard*, 29 October 2024, p. 32.

[106] Dr David Carland, Executive Director, Australian Resources Pty Ltd, *Committee Hansard*, 30 October 2024, p. 24.

> It happens that coal-fired generation is one of the highest forms of emissions intensity in the grid. That is what falls out through the modelling. It is not through a predisposition against coal-fired generators.[107]

Nuclear power

3.105 There was particular criticism of AEMO's lack of consideration of nuclear power, as some submitters argued that a plan which incorporated nuclear power would be more reliable than one which relied on variable renewable energy sources, and would also be more likely to meet Australia's emissions targets.[108]

3.106 Nuclear for Climate Australia outlined its own scenario for Australia to move to a system based primarily on nuclear energy; it argued that such a model would be half the cost of the 'step change' model of the ISP, and that Australia should therefore repeal the current moratorium on nuclear power.[109]

3.107 The IPA also argued that the removal of the legislative ban on nuclear power would in turn 'relax constraints that need to be relaxed' and better meet the NEO.[110]

3.108 In a similar vein, Dr David Carland, the Executive Director of Australian Resources Pty Ltd, stated that nuclear power offered, in his view, a more 'realistic' path to meeting Australia's emissions targets than renewable energy, while also acknowledging there were issues around the timeframe of creating nuclear power plants.[111]

3.109 However, other participants did not view nuclear power as an energy source which needed more consideration in Australia's energy market.[112] For example, the Institute for Energy Economics and Financial Analysis (IEEFA) described its own modelling, which indicated that, in its view, nuclear power would not be a relevant consideration:

> We looked at the cost of nuclear from recent build experience in economies comparable to Australia, and we found that the cost of nuclear is extremely

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[107] Mr Daniel Westerman, Chief Executive Officer, AEMO, *Committee Hansard*, 23 October 2024, p. 21.

[108] See, for example, Coalition for Conservation, *Submission 25*, p. 4; Energy Realists of Five Dock, *Submission 43*, p. 1; Mr Aidan Morrison, Director of Energy Research, Centre for Independent Studies, *Committee Hansard*, 31 October 2024, p. 39.

[109] Mr Robert Parker, Founder, Nuclear for Climate Australia, *Committee Hansard*, 31 October 2024, pp. 41–42.

[110] Adjunct Professor Stephen Wilson, Visiting Fellow, Institute of Public Affairs, *Committee Hansard*, 29 October 2024, p. 24.

[111] Dr David Carland, Executive Director, Australian Resources Pty Ltd, *Committee Hansard*, 30 October 2024, p. 22.

[112] See, for example, Mr Tony Wood, Program Director, Energy and Climate Change, The Grattan Institute, *Committee Hansard*, 31 October 2024, p. 17.

> expensive … So we do expect that the most economic pathway forward is renewables with storage, because nuclear is facing these extremely high costs and also, as I'm sure you've heard, there are significant issues with trying to get the nuclear in within the timeframe that we would need it.[113]

Gas

3.110 The question of the role of gas in Australia's future energy mix drew attention over the course of the inquiry.[114]

3.111 In the most recent ISP, AEMO describes a continued role for gas to play, describing the makeup of Australia's future energy market as 'renewable energy connected with transmission and distribution, firmed with storage, **and backed up by gas-powered generation'**.[115]

3.112 APA advocated for greater consideration of gas in Australia's future energy supply:

> Given around 9.3GW of the existing 11.5GW of GPG [gas-powered generation] capacity already in the system is also expected to retire, we need around 12GW of new GPG to come online to support the massive increase in renewables … However, just 1GW of dispatchable GPG is currently expected to come online over the next 10 years, according to AEMO.[116]

3.113 The ECMC made a similar recommendation in its *Response to the Review of the Integrated System Plan*, stating that gas 'will need to play a critical firming role alongside electricity storage', and that AEMO should therefore 'expand its consideration of gas market conditions in the 2026 ISP'.[117]

Criticisms of the ISP in general

3.114 The committee also heard criticism of perceived bias in the ISP towards transmission solutions over non-network ones. In this context, transmission refers to projects which involve a generation site and a transmission network to bring electricity to consumers; non-network solutions refers to CER such as Photovoltaic (PV) solar panels, which do not require any medium between the generation and utilisation of energy, as well as small-scale batteries.

3.115 The UNSW Collaboration on Energy and Environmental Markets, for example, stated that the issue lay in the original design of the ISP as a 'transmission

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113 Ms Johanna Bowyer, Lead Analyst, Australian Electricity, Institute for Energy Economics and Financial Analysis, *Committee Hansard*, 30 October 2024, p. 51.

114 See, for example, Independent Engineers, Scientists and Professionals, *Submission 7*, p. 3; Institute of Public Affairs, *Submission 44*, p. 7; Professor Michael Brear, *Submission 50*, [p. 3].

115 AEMO, *2024 Integrated System Plan: A roadmap for the energy transition*, p. 3. Emphasis added.

116 APA, *Submission 40*, p. 10. See also Climateworks Centre, *Submission 79*, p. 3.

117 Energy and Climate Change Ministerial Council, *Response to the Review of the Integrated System Plan*, p. 6.

planning document' and that it is therefore, 'unsurprising that transmission is the answer that comes out of that'.[118]

3.116 Dr Gabrielle Kuiper made a similar point in her evidence before the committee, where she argued that 'part of the answer' is that AEMO's underlying legislation has not changed, as it is currently directed by legislation to be a transmission planner.[119]

3.117 In the 2024 ISP, AEMO noted it accounted for 'candidate development paths' (CDPs), which are a 'collection of development paths which share a set of potential actionable projects'. It elaborated that CDPs have 'been shortlisted for selection as the ODP and are evaluated in detail to determine the ODP, in accordance with the ISP methodology.'[120]

3.118 Professor Mountain agreed with the notion that the CDPs put forward to be tested against the cost-benefit analysis contained only transmission projects, and raised that, in his view:

> AEMO, itself—and this is in the very nature of it—is in a bit of cleft stick. It has difficulty putting forward a generational storage solution because it isn't in the contestable element of the market. So even though a storage solution is often the best solution to augment transmission capability, AEMO doesn't really have the mandate or the vires to be putting that forward. I'm not, by any manner or means, arguing that AEMO should be given it. Rather, it points to the fallacy of the system of administration that creates a so-called plan in this fashion.[121]

3.119 AEMO told the committee that when it assesses transmission projects, it also undertakes a comparison known as a 'counterfactual'. Ms Merryn York, AEMO, stated:

> That is where we just take the existing system—in particular, the existing transmission system—remove all of the future modelling of the future transmission projects and look at how you would get to those targets without that transmission. What we find in that counterfactual is that there's a lot more distributed generation at transmission scale because the transmission is actually allowing that generation to be used in different locations at different times. That is really the basis of then the cost-benefit analysis to determine what are the net market benefits for transmission for those transmission projects…It is an assessment: does the transmission develop overall benefits for consumers or not?[122]

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118 Dr Dylan McConnell, Senior Research Associate, University of New South Wales, *Committee Hansard*, 29 October 2024, p. 9.

119 Dr Gabrielle Kuiper, *Committee Hansard*, 31 October 2024, p. 49.

120 AEMO, *2024 Integrated System Plan for the National Electricity Market*, June 2024, p. 89.

121 Professor Bruce Mountain, *Committee Hansard,* 31 October 2024, p. 10.

122 Ms Merryn York, AEMO, *Committee Hansard*, 23 October2024, p. 9.

3.120 The ISP Methodology explains that the cost benefit analysis:

> …assesses the benefits of ISP projects against a status quo where no ISP projects are built. This requires the development of a CFDP [Counterfactual Development Pathway] to be modelled for each scenario. This counterfactual case considers the development of the system without any actionable or future ISP projects (although ISP development opportunities may be included) and is used to identify the market benefits of the set of ISP projects included in each DP.[123]

3.121 The ISP methodology also states:

> Consistent with the AER's CBA Guidelines, the CFDP considers the costs of meeting the needs of consumers within each scenario, without the continued development of transmission infrastructure, having to instead rely on large-scale generation, storage, CER, and small intra-regional augmentation and replacement expenditure projects. This means the CFDP does not include any inter-regional or intra-regional augmentation projects that are not already committed or anticipated. This restricts the ability to expand the transmission system beyond transmission limits that result from existing, committed, and anticipated projects, even if this leads to significant generation curtailment in REZs [Renewable Energy Zone].[124]

3.122 Professor Mountain described AEMO employing 'a biased counter-factual trick'. Namely, because 'assumptions on what would happen if the transmission project was not built…make the transmission project look better'. Professor Mountain stated:

> AEMO has done this for example by assuming that all Victorian brown coal generators would have closed by 2028, so as to generate the "benefit" of keeping them open if their transmission project was developed. But of course all Victorian coal generators will not be closed by 2028![125]

3.123 Professor Bruce Mountain was also critical of what he saw as a bias towards transmission planning under the ISP:

> In addition to the inevitable subjectivity of optimisation modelling, another layer of subjectivity (and opportunity for manipulation) arises in the process of establishing the costs and benefits of transmission augmentations. Through our reviews of AEMO's ISPs and of transmission network services providers' (TNSPs) regulatory investment tests we documented seven "tricks" that AEMO and network services providers can and do play to get their cost-benefit assessments to deliver the results they want.[126]

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123 AEMO, ISP Methodology, p. 91, isp-methodology_june-2023.pdf, (accessed 11 December 2024).

124 AEMO, ISP Methodology, p. 92, isp-methodology_june-2023.pdf, (accessed 11 December 2024).

125 Professor Bruce Mountain, *Submission 8*, p. 8. See also Professor Bruce Mountain, *Committee Hansard*, 31 October 2024, p. 5.

126 Professor Bruce Mountain, *Submission 8*, p. 8. Citations omitted.

3.124 Renew Illawarra Network also criticised what it saw as AEMO's insufficient consideration of CER as opposed to network solutions:

> [The] [d]raft 2024 Integrated System Plan by AEMO does capture significant changes in CER, but still treats them as an input to the model rather than an investment choice. And it provides no discussion about how Australian homes and businesses might reorganise their collective demands on the system to make the best use of variable sun and wind[.][127]

3.125 The CIS was also critical of AEMO for what it viewed as unwarranted approval of transmission projects, resulting in 'unnecessary costs and pressure on supply chains'.[128] The CIS linked such perceived poor decisions to AEMO's strict adherence in its modelling to the government policy of 82 per cent renewable energy by 2030.[129]

3.126 However, the Department clarified that transmission planning was a function within the ISP, rather than the entirety of it:

> What the ISP contributes to, through defining what an actionable project is, is the next step in a regulatory process that recognises that, specifically for transmission, there is a market power element there that requires, then, a regulatory approach to how you then provide the revenue base for that market power. So, in a sense, the ISP, with respect specifically to transmission, needs to get to the point of identifying what an actionable project is for testing by the proponent under the RIT-T, which I think of as being categorically different to potentially the role the ISP plays in identifying the total generation capacity choices that you face under different technology outlooks.[130]

3.127 Moreover, AEMO stated that consideration of non-network solutions was a formal step within the RIT-T, in which it noted that there is a 'call for non-network alternatives'.[131] AEMO further underlined that:

> There's every opportunity for alternatives to the project that was in the ISP to be assessed as better overall outcomes to address the need that's been identified, whether that's a non-network alternative or a different alternative to the project that was in the ISP. That's exactly what the RIT-T process does.[132]

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127 Renew Illawarra Network, *Submission 5*, p. 18.

128 Centre for Independent Studies, *Submission 3*, Supplementary Submission 2, p. 6.

129 Centre for Independent Studies, *Submission 3*, Supplementary Submission 1, p. 5.

130 Mr Simon Duggan, Deputy Secretary, Department of Climate Change, Energy, the Environment and Water, *Committee Hansard*, 29 October 2024, p. 41.

131 Ms Merryn York, Executive General Manager, System Design, AEMO, *Committee Hansard*, 23 October 2024, p. 40.

132 Ms Merryn York, Executive General Manager, System Design, AEMO, *Committee Hansard*, 23 October 2024, p. 40.

3.128 The AER also explained that non-network solutions were still given consideration in the planning process, citing a specific example in New South Wales:

> …Transgrid did a RIT-T for the system in Broken Hill. The preferred option was a non-network solution. It's compressed air storage, from memory. There are examples of it. Probably you are less likely to see the non-network solutions get up in very big infrastructure projects.[133]

Reliability of power supplies

3.129 The committee heard concerns regarding the adequacy of the ISP in ensuring the reliability of energy supplies in Australia. For example, the IESP submitted:

> The ISP is deficient in many regards. It does not appear to be the result of rigorous high reliability systems engineering design, which requires it to be based on worst-case conditions with an added dispatchable reserve margin (DRM) to cover instances where some facilities are not available due to planned maintenance and required repairs.[134]

3.130 ISEP further stated that the ISP 'fails to meet all parts of the NEO under the NEL in that it does not provide a grid design capable of delivering reliable power…'.[135]

3.131 However, Energy Networks Australia highlighted the AER's *Network Performance Report* 2023 which found that 'measured outages for both electricity and gas have been less frequent, and reliability performance is at an all-time high'.[136]

Case studies - HumeLink and VNI West

3.132 Inquiry participants raised a range of concerns regarding HumeLink and VNI West, with some submitters viewing various planning and performance aspects of these projects as problematic. These issues are canvassed below.

Consultation concerns

3.133 Energy Grid Alliance (EGA) submitted that AEMO consultation for VNI West exemplified a 'failure in community engagement'. It stated that community consultation 'was so poorly handled – with cancelled meetings, and AEMO representatives walking out of town hall meetings due to safety concerns' – that AEMO shifted its approach to an "inform" model, rather than facilitating meaningful engagement.' According to EGA, 'this superficial engagement'

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133 Mrs Clare Savage, Chair, AER, *Committee Hansard*, 23 October 2024, p. 40.

134 Independent Engineers, Scientists and Professionals, *Submission 7*, p. 1.

135 Independent Engineers, Scientists and Professionals, *Submission 7*, p. 1.

136 Energy Networks Australia, *Submission 19*, p. 2.

resulted in 'significant backlash from the community' who had 'perceived that their concerns were being ignored'.[137]

3.134 These concerns were echoed by the Wallaloo and Gre Gre District Alliance (WAGGDA), which represents farmers and those involved in the agricultural community, argued that AEMO has 'not adequately considered stakeholders views and the public interest' on VNI West. WAGGDA further observed that in its view, at no stage can it see that AEMO, Transmission Company Victoria, or VicGrid 'have implemented any public feedback at any stage throughout this process'.[138]

3.135 WAGGDA also contended that 'affected communities, including farmers whose land is slated for the transmission lines' have not been 'considered stakeholders by AEMO, Transmission Company Victoria or Vic Grid'.[139]

3.136 Similar critiques were made by HumeLink Alliance Incorporated in regard to consultation with communities on the HumeLink project. It noted that advice from the AER, which states that 'effective engagement is fundamental to gaining the social licence needed to expand the transmission grid'.[140] However, HumeLink Alliance Incorporated argued that:

> Resolving the problem of social licence with consultation is very much a second-best solution. It relies on communities having the time, capacity and significant resources to engage. It also relies on the proponent honestly and openly engaging with communities. Currently proponents appear to have a Decide - Announce – Defend model of engagement. That is, they:
>
> (1) decide on the project option (overhead transmission lines);
> (2) announce the decision; and
> (3) defend the decision (by misrepresenting the costs of other options like undergrounding and misrepresenting the environmental benefits of undergrounding by, for instance, falsely claiming an underground option will sterilise large swathes of farm land).[141]

3.137 AEMO addressed consultation concerns in an answer to a question on notice and emphasised that the NER establish a rigorous framework 'which requires transparency and extensive stakeholder consultation'.[142] Further, AEMO noted

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137 Energy Grid Alliance, *Submission 54,* p. 8.

138 Wallaloo and Gre Gre District Alliance (WAGGDA), *Submission 85,* [p. 2].

139 WAGGDA, *Submission 85,* [p. 2].

140 HumeLink Alliance Incorporated, *Submission 53,* p. 12.

141 HumeLink Alliance Incorporated, *Submission 53,* p. 12.

142 AEMO, Answer to Senator Grogan's written question on notice by the Australian Energy Market Operator; received 12 December 2024, p. 24.

that the NER ISP framework is itself an outcome of rigorous consultation and review.[143]

3.138 Further, as CIS noted, NER 5.22.15 mandates that AEMO must consult on new information and its impact on the ODP, as set out in Appendix B of the Forecasting Best Practice Guidelines (FBPG). This consultation was not undertaken for the HumeLink and VNI West projects:

> Finally as has been noted above, the FBPG at section 2.5, applying NER 5.22.15 mandates that AEMO must consult on new information and its impact on the ODP as set out in Appendix B.[144]

Competition and costs to energy consumers

3.139 In his submission, Professor Mountain outlined the costs associated with HumeLink (originally known as SnowyLink North):

> AEMO included SnowyLink North (as it was then known) in its inaugural 2018 ISP. It costed it then at about $0.9bn. In its Draft 2020 ISP, the estimated cost of what was then renamed HumeLink increased to $0.95bn - $1.76bn, and then to $1.47bn - $2.73bn in the final 2020 ISP. The estimated cost increased again in the 2022 ISP to $3.32bn and most recently to $4.98bn in the 2024 ISP. In addition, over the period of these assessments, AEMO has reduced the estimated capacity of HumeLink from 2,570 MW to 2,200 MW. TransGrid has estimated a further $1.55bn will need to be spent on Sydney Ring South, and AEMO's latest ISP classifies this an actionable project. Therefore the latest estimated total cost of transmission needed to make Snowy 2.0 useful to the NSW power system is about $6.5bn.[145]

3.140 According to Professor Mountain, these costs are 'over 6 times TransGrid (and AEMO's) initial claim' of the costs associated with SnowyLink North.[146]

3.141 These costs concerns are also echoed across other submissions such as the submission from Ted Woodley and from the CIS which stated that costs will continue to rise due to the completion date continually being postponed. For example, Mr Ted Woodley commented:

> Four years ago TransGrid estimated the cost of HumeLink to be $1.35bn (equivalent to about $1bn with the current design of double-circuit rather than single-circuit lines), with completion in 2024 (2020 Project Application Draft Report). A year later the cost blew out to $3.3bn (2021 Project Application Conclusions Report), prompting a warning from AEMO that "the rising project costs...cannot materially increase from the current estimate of $3.3bn. Further work to drive down costs should be undertaken urgently."

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143 AEMO, Answer to Senator Grogan's written question on notice by the Australian Energy Market Operator; received 12 December 2024, p. 24.

144 CIS, *Submission 3*, Supplementary Submission 1, p. 11.

145 Professor Bruce Mountain, *Submission 8*, p. 10. Citation omitted.

146 Professor Bruce Mountain, *Submission 8*, p. 10.

> The latest forecast is $5bn with completion in 2026, which I and others consider to still be unachievable.[147]

3.142 Further, CIS commented that:

> Transmission is currently a relatively small part of the bill stack. It's only a little under 10 per cent. It's something like eight to 10 per cent. In states, it can vary a little bit, too. A single project such as HumeLink is modelled to add a good $25 or so to everyone's power bill. But that's just getting started. We're looking at Central-West Orana. It's been costed at more than HumeLink. That's $5.4 billion. Then there will be a six gigawatt link out to the New England REZ that's coming up. There's no cost publicly available for that yet. They've just identified the route. But that will probably be more again. We haven't got the HumeLink figures. That's another billion or two. I think it's still in early estimates at this stage for the last leg of HumeLink into Sydney. The number of different projects, when you stack them up, could easily reach $100 in the transmission area, noting that one year we think it will cost $2 billion, and then a year or two later it's $3 billion or $4 billion or $5 billion. The escalation we've seen is pretty frightening.[148]

3.143 Professor Mountain agreed with the notion that competition within the energy sector could increase the likelihood of such cost blowouts being avoided. He told the committee that the 'nature and extent of the cost blowouts would be much lower' but that:

> Part of the reason for the cost blowout is the regulatory approval process, which encourages the proponents and AEMO to put in a low number to start and slowly increase the temperature in the hope that the frog doesn't notice. That is the nature of the regulatory process.
>
> A private investor, accountable to private equity providers, to bond holders and to wind and solar farms that might want to use its produce have much tougher accountabilities for cost blowouts. I think they will be far more effective in the procurement and the management of the asset builders anyway.[149]

TOOT analysis

3.144 CIS submitted that AEMO's 'Take One Out at a Time' (TOOT) analysis 'overvalues HumeLink by double-counting the benefits of its connection with VNI West'. AEMO explained that for each actionable ISP project in an ODP, it performs a TOOT analysis which provides a guide as to the project's sensitivity to transmission cost variations. AEMO also noted that:

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147 Mr Ted Woodley, *Submission 6*, p. 7.

148 Mr Aidan Morrison, Director of Energy Research, Centre for Independent Studies, *Committee Hansard*, 31 October 2024, p. 33.

149 Professor Bruce Mountain, *Committee Hansard*, 31 October 2024, p. 11.

> The TOOT approach removes the actionable ISP project from the ODP, along with any augmentations along the project route, for example, augmentations in the capacity available in REZs along the project route.[150]

3.145 CIS contended that the TOOT analysis 'ignores the interconnected nature of network investments, which should be assessed as part of an integrated system rather than in isolation'.[151]

3.146 Further, in CIS' view, 'projects like HumeLink lose much of their justification because they rely on complementary counterparts to deliver their full value'. CIS commented that AEMO acknowledged the interdependence between HumeLink and VNI West and that a 'combined analysis could be performed'. However, CIS also observed that 'AEMO decided against a combined analysis for HumeLink and VNI West, simply on the basis that it was not performed in the previous 2022 ISP'.[152]

3.147 CIS concluded that 'by not conducting a combined analysis, AEMO effectively inflates the benefits of HumeLink, ignoring the need for complementary infrastructure to support its business case'.[153]

3.148 In an answer to a question on notice, AEMO clarified that it conducts the TOOT analysis to provide transparency on the value of individual projects and noted that the TOOT analysis is not used 'to determine which projects should be actionable'. AEMO further explained that:

> …the sum of the benefits from the individual TOOT analyses is greater than the total benefits in the ISP's Optimal Development Path (ODP). Given the way these analyses are conducted, this is to be expected, but it is not relevant given the TOOT analysis is not part of the analysis to select the ODP in the ISP.[154]

3.149 As such, AEMO concluded all projects are considered together in the core analysis when determining the ODP and emphasised that 'in this way there can be no double-counting of benefits when selecting the ODP'.[155]

3.150 However, CIS held broader concerns related to HumeLink. It told the committee that:

> We've given a very considerable submission on the topic of HumeLink. This is a project which, in our opinion, there is absolutely no justification for

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150 AEMO, *ISP Methodology*, June 2023, p. 103.

151 Centre for Independent Studies, *Submission 3*, Supplementary Submission 1, p. 6.

152 Centre for Independent Studies, *Submission 3*, Supplementary Submission 1, p. 7.

153 Centre for Independent Studies, *Submission 3*, Supplementary Submission 1, pp. 7–8.

154 AEMO, Answer to Senator Grogan's written question on notice by the Australian Energy Market Operator; received 12 December 2024, p. 22.

155 AEMO, Answer to Senator Grogan's written question on notice by the Australian Energy Market Operator; received 12 December 2024, p. 23.

> being advanced at the current schedule. If the 82 per cent renewable energy target were not a binding constraint on all scenarios, it would not be advanced today.[156]

Cost-benefit analysis – VNI West

3.151 Professor Bruce Mountain submitted that there were several flaws in the cost-benefit analysis used to justify VNI West.

3.152 For example, in the initial cost-benefit analysis of the Western Renewables Link (WRL), a component of VNI West, AEMO claimed that the main benefit for the C3 option of WRL which was intended to be the first leg of the VNI West interconnector, was the fuel cost savings which would result from increasing brown coal generation in Victoria and therefore conserving expenditure on increasing wind generation.[157]

3.153 As Professor Mountain noted, one problem with the analysis is that it assumed that Victoria's brown coal generation would persist until 2074. This contradicted and was inconsistent with the Victorian Government policy and 'the objective of rapidly decarbonising electricity supply and expanding wind generation in Victoria.'[158]

Contradictory justifications

3.154 Additional evidence from Professor Mountain charges that AEMO has relied on various and often contradictory justifications for VNI West. The most significant claim originates from the 'VNI-West Consultation Report – Options Assessment' (2022) which justified the construction of VNI West on the basis that Victoria would otherwise have to build a comparatively more exorbitant amount of pumped-hydro storage.[159]

3.155 As Professor Mountain notes, this was puzzling as if the premise of building VNI West was to substitute cheaper batteries in NSW for pumped hydro in Victoria, then what was the barrier to building batteries in Victoria to begin with - all other factors being equal as batteries can be built for the same price in both states?

3.156 Professor Mountain subsequently pushed back against additional justifications by AEMO that VNI West was required so that Victoria could export energy generated by rooftop solar to NSW. On the contrary as Professor Mountain

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156 Mr Aidan Morrison, Director of Energy Research, Centre for Independent Studies, *Committee Hansard,* 31 October 2024, p. 30.

157 Professor Bruce Mountain, *Submission 8,* p. 13.

158 Professor Bruce Mountain, *Submission 8,* p. 13.

159 Professor Bruce Mountain, *Submission 8,* p. 14.

noted, this was a mere fantasy as the state would in fact become a net importer of energy.[160]

3.157 Professor Mountain further noted what he considered to be 'tricks' that AEMO and network services providers use, which are in his view:

> 1. Biased counter-factual trick: by making assumptions on what would happen if the transmission project was not built it is possible to make the transmission project look better. AEMO has done this for example by assuming that all Victorian brown coal generators would have closed by 2028, so as to generate the "benefit" of keeping them open if their transmission project was developed. But of course all Victorian coal generators will not be closed by 2028!
>
> 2. The "Roman arch" or "Divide and rule" trick: Count the full benefits of building the bridge but only count one half of the cost of the bridge. Then later repeat the exercise for the second half. This has done for VNI-West (for its two elements) and also for HumeLink and last leg "Sydney Ring South".
>
> 3. The "sunk cost" trick: treat various costs that will arise in future as if they have already been spent or committed. As discussed earlier, this has been a big part of AEMO's analysis of MarinusLink (ignoring the costs of wind farms in Tasmania in their calculation of the benefits of MarinusLink) and AEMO (and TransGrid's) analysis of HumeLink (ignoring the cost of Snowy 2.0 but counting the "benefit" of connection to Sydney)
>
> 4. The "under-quoting attracts buyers" trick: This involves starting with unrealistically low cost estimate in order to get a benefit/cost outcome that is sought, then progressively increase cost estimates later (of course always claiming that benefits still exceed costs). This is endemic to all projects assessed by network providers and AEMO. We are not aware of any projects that have not now estimated to cost at least double what AEMO/TNSPs initially said they would (in the case of HumeLink it is more than six times their initial claim).[161]

[160] Professor Bruce Mountain, *Submission 8*, p. 14.

[161] Professor Bruce Mountain, *Submission 8*, pp. 8–7.

Chapter 4
Consumers

4.1 As mentioned in earlier chapters, the National Electricity Market (NEM), like energy systems worldwide, is being transformed from a system dominated by large thermal power stations to one that includes a variety of power generation resources and technologies.

4.2 Coal has historically been the mainstay of Australia's power production. In 2024, it has provided approximately 55 per cent of energy required in the NEM, in conjunction with approximately five per cent from gas, and approximately 40 per cent from renewable sources. Coal-fired energy production is expected to decrease over coming decades with 12 coal-fired power plants retiring over the past decade.[1]

4.3 This chapter explores the evidence presented to the committee in relation to issues arising from this transformation including: the uptake of consumer energy resources; costs to consumers and the community; and suggestions for improvement.

Market transformation

4.4 Over decades of energy market regulation, concepts of consumers and their agency have changed. During energy market reforms of the 1990s consumers were conceived as 'disinterested and passive takers of electricity'. By the early- to mid-2000s, regulators pursued retail competition motivated by the perspective that 'competition is better than the absence of competition'.[2]

4.5 Dr Ron Ben-David explained that in pursuing retail competition, the regulators of that time reframed what it meant to be a consumer. Regulators switched from seeing consumers as passive, to viewing consumers as 'active, interested and discerning shoppers of electricity'.[3]

4.6 Over the past two decades, the regulatory conception of consumers has shifted again. Consumers are now conceived as 'market participants' who are interested, willing and capable of trading and shaping their energy load, the volume and timing of their electricity exports, and access to their storage assets (e.g. electric vehicles). As such, consumers are viewed as traders of these services. In this context, Dr Ben-David characterises regulators as 'taking a

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1 Mr Daniel Westerman, Chief Executive Officer, Australian Energy Market Operator (AEMO), *Committee Hansard*, 23 October 2024, p. 16.

2 Dr Ron Ben-David, *Submission 64*, p. 5.

3 Dr Ron Ben-David, *Submission 64*, p. 5.

permissive approach toward ever more complex market contracts despite the incomprehensibility of these contracts for many or most consumers'.[4]

4.7 Under such assumptions, the role of the market regulator is 'simply to support consumer sovereignty through transparent flows of information and removing barriers to consumers shopping as they please'.[5]

Consumer Energy Resources

4.8 As noted above, the energy market has undergone radical transformation, in part due to the widespread uptake of Consumer Energy Resources (CER) or Distributed Energy Resources (DER). These are small scale energy systems that generate or store electricity and includes flexible loads that can alter demand in response to external signals. They include any devices with a power load that can be applied flexibly over time, such as rooftop solar photovoltaic (PV) systems, domestic batteries, electric vehicles (EVs), electric hot water systems, dishwashers and pool pumps.

4.9 The Australian Energy Market Commission (AEMC) submitted that 'CER is transforming Australia's energy landscape, presenting opportunities and challenges that are often unique to our country and power system'.[6] Similarly, the Australian Council of Trade Unions (ACTU) described CER as:

> …key to Australia's secure, affordable, and sustainable electricity future, providing benefits and equitable outcomes by smoothing the transition, rewarding consumer participation, and lowering emissions. Well-integrated CER presents an opportunity to support the least cost and faster energy transition, system reliability, and reduce consumers' energy bills. Optimised use of CER can reduce the need for large-scale generation and storage capacity, resulting in lower costs and bills for all consumers, including those who do not own CER.[7]

4.10 It was argued that the effective integration and coordination of CER has the potential to deliver net benefits of between $1 billion and $6.3 billion between 2030–2040. Benefits would include lower energy bills for all consumers, including those who do not have direct access to such technology.[8] Mr David Westerman, Chief Executive Officer (CEO), Australian Energy Market Operator (AEMO), told the committee:

> As consumers continue to invest in their own resources, both rooftop solar and batteries, electric vehicles and other smart appliances…the Integrated System Plan did find in its analysis that if those resources are able to

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4 Dr Ron Ben-David, *Submission 64*, p. 5. See SACOSS, *Submission 11*, p. 3.

5 SACOSS, *Submission 11*, p. 3.

6 Australian Energy Market Commission (AEMC), *Submission 16*, p. 11.

7 Australian Council of Trade Unions (ACTU), *Submission 51*, p. 8.

8 Australian Energy Market Commission, *Submission 16*, p. 11.

> participate in the broader market, the whole system will cost $4.1 billion less for consumers. We say it's important to find ways for consumers and their devices to participate in the broader system because that results in lower costs for everyone, not just for those who can afford those devices.[9]

4.11 According to the Department of Climate Change, Energy, the Environment and Water (the Department), one third of Australia's households have installed rooftop solar. Total capacity of rooftop solar across Australia amounts to 22.6 gigawatts (GW) as of May 2024, a more than seven-fold increase since 2014. Collectively, rooftop solar is the second largest source of renewable electricity generation in Australia (behind wind energy generation), and the fourth largest source of electricity generation, making up approximately 11.2 per cent of the country's installed capacity for power supply. The installed capacity of rooftop solar combined is greater than the single largest generator in the NEM.[10]

4.12 The centralised energy system of the past where power flowed one way from supply-side to demand-side is transforming to a grid that is more decentralised, accommodating two-way power flows. As noted in previous sections, the lines between demand and supply are increasingly blurred, creating a more complex system.[11]

4.13 The National Consumer Energy Resources Roadmap – Powering Decarbonised Homes and Communities (CER Roadmap) was released by the Energy and Climate Change Ministerial Council (ECMC) in July 2024. It envisages a future where:

> Consumer Energy Resources are an integral part of Australia's secure, affordable and sustainable future electricity systems, delivering benefits and equitable outcomes to all consumers through efficient use which smooths the transition, rewards participation and lowers emissions.[12]

4.14 The CER Roadmap states that it 'does not seek to duplicate reforms underway within Australia's energy market, but rather focuses on optimising opportunities that complement other reforms and which benefit from a

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9 Mr David Westerman, Chief Executive Officer, AEMO, *Committee Hansard*, 23 October 2024, p. 13. See also, Institute for Energy Economics and Financial Analysis, *Submission 20*, p. 1.

10 Department of Climate Change, Energy, the Environment and Water, National Consumer Energy Resources Roadmap – Powering Decarbonised Homes and Communities, July 2024, p. 7, national-consumer-energy-resources-roadmap.pdf, (accessed 3 December 2024).

11 Department of Climate Change, Energy, the Environment and Water, National Consumer Energy Resources Roadmap – Powering Decarbonised Homes and Communities, July 2024, p. 6, national-consumer-energy-resources-roadmap.pdf, (accessed 3 December 2024).

12 Department of Climate Change, Energy, the Environment and Water, National Consumer Energy Resources Roadmap – Powering Decarbonised Homes and Communities, July 2024, p. 4, national-consumer-energy-resources-roadmap.pdf, (accessed 3 December 2024).

consistent national coordinated response'. Reforms progressed under the CER Roadmap seek to support consumers to:

- increase exports from rooftop solar systems to the grid
- benefit from new opportunities like vehicle-to-grid
- get paid for participating in programs that benefit the electricity system
- manage energy use to save on bills and pay back CER investments faster
- safely participate in the energy market.[13]

4.15 However, the committee also received evidence that the future of CER requires a 'fundamental regulatory rethink'.[14] A range of suggestions to improve the regulation and management of CER, are outlined below.

Integration of CER

4.16 CER challenges the business models of incumbent energy market participants including electricity distribution and transmission networks, retailers and large-scale generators. CER also disrupts established retail markets and therefore necessitates the development of new business models.[15]

4.17 Noting the shift towards 'bi-directional energy flows', where consumers generate energy (e.g. solar PV systems) or feed stored energy (for example through home batteries) to the electricity grid, aspects of existing electricity distribution networks require reform. Submitters however stated that:

> …the current regulatory framework often favours incumbents, limiting the evolution and competitiveness of new entrants and the development of consumer-centric technology solutions. There is a critical need to reassess the roles of traditional and innovative players in the energy retail and distribution network landscape.[16]

4.18 The UNSW Collaboration on Energy and Environmental Markets noted that there has been some attempt at reform, but there remains a 'significant absence' in considering changes in demand-side activity. It submitted:

> …though the [Integrated System Plan] ISP includes considerable capacity additions of consumer-owned distributed energy resources in its optimal development path, it is an input assumption (provided by consultants), into what is largely a transmission planning process that predominantly identifies supply-side solutions. The expansion of rooftop solar PV (largely treated as being 'behind the meter', and thus on the demand side) and the nascent emergence of distributed batteries (standalone or, more

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13 Department of Climate Change, Energy, the Environment and Water, National Consumer Energy Resources Roadmap – Powering Decarbonised Homes and Communities, July 2024, p. 5, national-consumer-energy-resources-roadmap.pdf, (accessed 3 December 2024).

14 ACTU, *Submission 51*, p. 8.

15 Nexa Advisory, *Submission 26*, p. 12.

16 Nexa Advisory, *Submission 26*, p. 12. See also Renew Illawarra Network, *Submission 5*, p. 3.

> significantly, within electric vehicles) makes the need to reform oversight of the demand-side more acute.[17]

4.19 Submitters called for AEMO to 'better integrate' CER into the Integrated System Plan (ISP). Climateworks stated that integrating analysis on CER more effectively into AEMO's planning and forecasting tools would allow 'governments and energy system stakeholders' to be better equipped to implement policies that support CER deployment.[18]

4.20 The 2026 ISP Consumer Panel (Consumer Panel) told the committee that 'the key to effective utilisation of CER for the "common" good is "orchestration" which needs to be effectively implemented for the ISP to be optimal'. It submitted:

> The Panel does not consider orchestration to be just another forecast input into the ISP plan, rather it is a necessary precondition for the ISP that sits outside much of the ISP. As such, effective orchestration needs to be recognised as necessary for an effective ISP but it is mainly the responsibility of parties outside the ISP process.[19]

4.21 The Consumer Panel outlined the components of orchestration or coordination that it believes sit outside of the ISP, some of which are outlined below:

- tariff setting by networks, retailers and the AER that encourage the effective use of CER;
- policies and tariffs that enable a fair return on investment in CER;
- equity provisions to ensure those unable to acquire or directly utilise CER are not subsidising those able to afford to do so;
- engagement and communication with consumers to assist them to understand and participate in orchestration;
- policies to improve energy efficiency of appliances and housing; and
- improved consumer protections that also support and encourage effective, efficient and consumer focused providers.[20]

4.22 The Consumer Panel noted that while the CER Roadmap is 'vital', it also demonstrates 'how much is still to be done to ensure coordination'. It concluded:

> …the CER Roadmap…is under-resourced, and will take up to 6 years to deliver the reforms that need to be delivered in two or three years, given the opportunity for the rapid uptake and integration of demand side resources and the imminent threat of coal closures. The Panel strongly urges all governments to recognise and act on the urgency of the Road Map so the 2026 ISP can forecast a more rapid growth in coordinated CER, and earlier

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17 UNSW Collaboration on Energy and Environmental Markets, *Submission 80*, p. 7.

18 Climateworks Centre, *Submission 79*, p. 3.

19 2026 ISP Consumer Panel, *Submission 76*, p. 12.

20 2026 ISP Consumer Panel, *Submission 76*, p. 12.

> benefits flowing to consumers in terms of reliability, lower consumer bills and reduce need for network investments.[21]

4.23 The AEMC also noted the importance of CER orchestration and told the committee that this 'has a significant impact on end customer prices'. Ms Anna Collyer, Chair, AEMC told the committee that it has looked at customer behaviour such as when they choose to charge their electric vehicle, and the impact this has on the network, and end user prices. Ms Collyer explained:

> On the one hand, customers may adopt what we call convenience charging, which is when, in some ways, you treat it like your mobile phone: you plug it in when you get home and leave it to charge. If everybody charged their electric vehicle between the hours of six and eight, for example, when there's already peak use of the network, we would need significantly more network expenditure. On the other hand, if we can have smart charging, where we've got customers charging in different times of the day, particularly during the day when there's solar power or alternatively overnight, then we see that significantly less network expenditure is required, and that has a big impact on end use prices.[22]

4.24 The AEMC also noted the importance of integration and told the committee that it is undertaking a range of reform programs to 'better integrate community energy resources into the retail market' for example, by allowing a customer to have a different plan for their electric vehicle charging than for their regular electricity consumption. Ms Collyer stated:

> For example, you might be able to get a plan that says charging your car is very cheap if you can do it during the day or in the middle of the night but more expensive if you do it during the peak, to encourage more people to charge when it's beneficial for them to charge. Because you can choose when you fill your car with electricity in the same way you choose when you fill it with petrol, you might be quite happy with that but prefer a flat tariff for your other energy usage, which is less discretionary.[23]

4.25 Nexa Advisory recommended an independent review of the role and performance of electricity distribution networks to consider: their role in facilitating the transition to renewables; their ability to adapt existing business models to integrate CER; and how existing governance and oversite ensures value for energy consumers.[24]

4.26 The Australian Council of Trade Unions (ACTU) also called for regulatory reform to increase network access and visibility, and distribution hosting capacity to ensure that consumers can participate and benefit from CER uptake. The ACTU suggested that distribution businesses could be subject to mandates

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21 2026 ISP Consumer Panel, *Submission 76*, p. 13.

22 Ms Anna Collyer, Chair, AEMC, *Committee Hansard*, 5 December 2024, p. 23.

23 Ms Anna Collyer, Chair, AEMC, *Committee Hansard*, 5 December 2024, p. 23.

24 Nexa Advisory, *Submission 26*, p. 13.

that require the publication of the level of export they allowed CER customers to make, and what they expect to allow in the future. In addition, distribution businesses could be required to 'provide price signals that reflect real- or near-real-time conditions in the network to CER consumers to provide better information and more confidence in making decisions regarding grid participation'.[25]

Technical standards

4.27 There is a current lack of national oversight for CER devices and installation, with states and territories imposing differing technical standards and creating additional cost and complexity for consumers. For example, manufacturers and installers may need to customise devices and installation processes to meet different state standards, resulting in higher prices for consumers. The ACTU called for 'a set of national standards, overseen by a central body such as the Clean Energy Regulator, should be established and maintained to improve value for CER consumers and reduce customer concern about negative outcomes in CER adoption'.[26]

4.28 The Clean Energy Council (CEC) similarly noted that the CER Roadmap includes a recommendation for the establishment of a CER Technical Regulator, and described this as 'critically important'. The CEC suggested that to be effective, the Regulator must have 'decision making power, and regulatory authority over a range of different CER technical requirements that sit within different legislative frameworks'. The CEC noted that it is 'agnostic' as to where the CER Technical Regulator should functionally be located, but that it should have a broad enough scope to manage multiple regulatory frameworks and drives jurisdictional consistency.[27]

4.29 The Australian Council of Social Service (ACOSS) noted that while the CER Roadmap provides important guidance on a number of critical technical issues, it is limited to priority issues. As such, coordination is required to account for intersections between the Roadmap and other policy reform processes which will strongly influence CER. These include minimum performance standards for appliances, and policies to improve the thermal performance of existing homes.[28]

4.30 However, the AEMC stated that CER has 'been an AEMC priority for several years'. It noted that a CER taskforce has been established with clear terms of reference to deliver six priorities including 'consistent technical standards and

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25 ACTU, *Submission 51*, p. 10.

26 ACTU, *Submission 51*, p. 9.

27 Clean Energy Council, *Submission 69*, pp. 2–3.

28 ACOSS, *Submission 52*, Attachment 1, p. 12.

consumer protections to minimise risks and maximise participation, and clear allocation of responsibilities and data flows for distribution connected assets to enable those assets to be optimised within the system and market'.[29]

4.31 The AEMC noted that it has also 'called for an overarching, national narrative about the energy transition in general and CER in particular, to support social trust and encourage participation'.[30]

Investment support

4.32 Lower income households are often unable to benefit from CER due to the prohibitive cost of installation. The ACTU called for subsidies to be granted to a range of households, including low-income, social housing, and renters to allow for the installation and maintenance of the CER ecosystem. The ACTU stated that 'incentives for CER uptake can assist customers in reducing high upfront costs and reinforce the value of CER in the management of energy bills while driving greater system benefits and savings for all consumers'.[31]

Consumers — agency

4.33 Many energy consumers have limited real choice in the marketplace, and see little incentive in exercising what market choice is available. The majority of consumers are disengaged customers and are unlikely to take an active role unless there exists a proposition that is 'credible, trustworthy and of significant value to focus their attention'. Measures to lower costs and emissions associated with energy systems that focus on consumer choice are only effective where there is adequate consumer knowledge, control, resources, support and regulation.[32] Engineers Australia and the Australian Academy of Technological Sciences and Engineering in a joint submission, stated:

> …individual consumers do not necessarily want to engage and make decisions within a complex energy system. Many consumers simply want affordable, reliable and clean energy. Despite owning rooftop solar, household batteries and EVs, very few consumers act as true 'market participants' who are willing and capable of making decisions around their timing and energy use. We cannot have a system where consumers must be energy experts, or we risk losing their confidence in the changes and unintentionally harming them. Some may want to engage in this way, and they should be empowered to do so.[33]

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29 AEMC, *Submission 16*, p. 11.

30 AEMC, *Submission 16*, p. 11.

31 ACTU, *Submission 51*, p. 10.

32 ACOSS, *Submission 52*, p. 18. See also SACOSS, *Submission 11*, p. 3.

33 Engineers Australia and Australian Academy of Technological Sciences & Engineering, *Submission 18*, p. 3.

4.34 Dr Ben-David noted that consumers, particularly those with solar PV systems, must now evaluate market contract variables including:

- the price of electricity supplied by, and exported to, the grid;
- volumetric limits on how much electricity can be exported to the grid and, in some cases, limits on how much electricity can be drawn from the grid;
- delegated control over onsite electricity production, storage and load;
- price, access, ownership and control of electricity stored offsite (e.g. in community or network batteries); and
- payments for the provision of ancillary system services.[34]

4.35 Consumers may also be required to consider:

- dynamic prices or controls which change in real time (reflecting underlying system conditions);
- lock-in periods potentially lasting a number of years;
- an array of penalties (not necessarily monetary) for breaches or customer-initiated overrides of previously agreed thresholds;
- financing arrangements that are indistinguishable from payments for energy services; and
- reliance on multiple suppliers providing interacting services.[35]

4.36 Of concern, consumers face assessing these market variables regardless of their proficiency in understanding. Dr Ben-David stated that the 'complexification of contracts in the energy market creates enormous risks for consumers who – for whatever reason – are not effective in managing these risks efficiently'. Further, such complexity results in 'many – or most – consumers entering contracts that do not align with their best interests'.[36]

4.37 In addition, unlike other markets, the majority of consumers cannot avoid market risks by not participating. There are considerable barriers to exit and 'there is no escaping the energy markets, particularly for electricity'.[37]

Consumers – interests

4.38 The long-term interests of consumers are assumed to be at the centre of the design and regulation of the national energy market because the National Electricity Objective (NEO) states that the objective of the National Electricity Law (NEL) is 'to promote efficient investment in, and efficient operation and use of, electricity services for the long-term interests of consumers of electricity'.

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34 Dr Ron Ben-David, *Submission 64*, p. 5.

35 Dr Ron Ben-David, *Submission 64*, p. 5.

36 Dr Ron Ben-David, *Submission 64*, p. 6.

37 Dr Ron Ben-David, *Submission 64*, p. 6.

4.39 Mrs Clare Savage, Chair, Australian Energy Regulator (AER), told the committee:

> We are required to make our decisions consistent with the National Electricity Objective, the National Gas Objective and the National Energy Retail Objective, all of which are couched in terms of the long-term interests of consumers. That's a statutory responsibility that we have, and that is obviously the guiding principle that we take into consideration in our decision-making.[38]

4.40 However, the NEO does not place any formal obligation on regulatory authorities to formally consider consumer interests. Dr Ben-David stated, 'the NEO's reference to the long-term interests of consumers is provided for contextual purposes only. It does no work'.[39] Dr Ben-David highlighted the findings of the Full Federal Court in *Australian Energy Regulator v Australian Competition Tribunal (No 2) [2017]* that 'the necessary legislative premise is that the long term interests of consumers will be served by regulation that advances economic efficiency'.[40]

4.41 The committee received evidence that the interests of energy consumers are not well represented in comparison to the views and interests of energy suppliers. ACOSS noted that while all three market bodies have mechanisms for consumer consultation, there exists a 'clear gap in systemically driving the activities of these bodies towards the evolving interests of consumers, who are likely to benefit most from expanding demand-side measures in energy markets'. ACOSS called for greater numbers and diversity in consumer representation in energy market decision-making to facilitate genuine consultation.[41] Ms Kellie Caught, Program Director, Climate Change and Energy, ACOSS, noted:

> In the market regulators, none of the boards, with the exception of the AER, have any members with consumer experience or skills, and most of the staff in these organisations are economists or engineers, who, again, don't have that consumer perspective or demand-side expertise. So we see that there needs to be that top-down approach, making sure that we embody more of that consumer and demand- side expertise at both the board and the senior level but within staff as well.[42]

4.42 Choice also argued that 'having a strong consumer voice in energy market decisions is…critical' to minimising the costs associated with any transition to

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38 Mrs Clare Savage, Chair, Australian Energy Regulator, *Committee Hansard*, 5 December 2024, p. 10.

39 Dr Ron Ben-David, *Submission 64*, p. 3.

40 Dr Ron Ben-David, *Submission* 64, p. 4. See *Australian Energy Regulator v Australian Competition Tribunal (No 2) [2017]* FCAFC 79 (24 May 2017), para 492 – Justices Besanko, Yates & Robertson.

41 ACOSS, *Submission 52*, p. 19.

42 Ms Kellie Caught, Program Director, Climate Change and Energy, ACOSS, *Committee Hansard*, 31 October 2024, pp. 64–65.

renewables and that 'we assign responsibility to the entities best placed to manage risk – which is rarely consumers'. Choice suggested that:

> The institutional arrangements in the National Energy Market must therefore include and support a strong consumer voice, particularly at a time when the energy market is changing so quickly.[43]

4.43 Other submitters called for people and communities to be centred in all discussions of the energy market. For example, the Engineers Australia and Australian Academy of Technological Sciences and Engineering in a joint submission submitted that:

> An expanding range of energy options empowers and challenges end users and consumers. Their needs must be placed at the centre of decision-making processes. Policy settings need to reflect how structural change will be managed equitably across industry sectors and geographies for a 'just transition'.[44]

4.44 Similarly, Dr Ben-David and the South Australian Council of Social Service (SACOSS) suggested that the NEOs should introduce a new regulatory objective of avoiding 'exposing consumers to risks they are ill-equipped to understand, manage or price'. This may temper how existing NEOs are applied and to ensure that:

> …if the market is not guaranteed to result in benefit to consumers, and/or consumers are not able to protect themselves from adverse market forces, then it is only reasonable that the regulator has the responsibility to protect consumers from harm.[45]

4.45 Dr Ben-David submitted that this would recognise that any 'fulfilment of the National Energy Law efficiency objective is unachievable if risks are misallocated to consumers because they are unqualified to identify, avoid or efficiently transact away those risks'.[46]

4.46 Dr Ben-David went further and suggested that a new duty of care model should also be adopted to ensure a redistribution of risk, requiring service providers to act in the best interests of customers when offering or providing services under contract. Dr Ben-David suggested that such a duty should:

- apply to any service provider who has the contractual capacity to control, constrain or prevent the flow of electricity to or from a customer's premises or assets;

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43 Choice, *Submission 21*, p. 1.

44 Engineers Australia and Australian Academy of Technological Sciences & Engineering, *Submission 18*, p. 3.

45 SACOSS, *Submission 11*, p. 4. See also Dr Ron Ben-David, *Submission 64*, pp. 6–7.

46 Dr Ron Ben-David, *Submission 64*, p. 7.

- impose a positive responsibility on service providers to make reasonable efforts to identify a customer's best interests, and ensure compatibility between service offerings and such interests;
- require service providers to advise customers proactively, conscientiously, reasonably and demonstrably of any risks associated with a contract being offered; and
- oblige service providers to monitor that a contract continues to serve the customer's best interests.[47]

4.47 Dr Ben-David acknowledged that constructing such a duty to ensure enforceability 'is clearly challenging, but it is a challenge worth confronting in the absence of other reforms'.[48]

Vulnerable consumers

4.48 Energy justice is a broad concept that is used to address equity issues associated with a transition from traditional energy technologies. It underpins justifications for providing support to vulnerable customers such as low-income energy consumers and renters, particularly around energy affordability issues; and the communities residing near, and working in, coal-based industries as they transition away from fossil fuels.[49]

4.49 When used in energy regulation, energy justice is used to address equity issues in energy systems, ensuring fairness in energy access, affordability, and sustainability. It encompasses several key tenets:

- distributional (allocation of costs and benefits);
- procedural (who participates in decision-making); and
- recognition justice (respect for, engagement with and fair consideration of diverse cultures and perspectives).[50]

4.50 It also aims to ensure that energy's benefits and burdens are shared equitably across all segments of society, regardless of income, race, or other socioeconomic factors.[51]

4.51 Since 2023, there have been policy developments aligned with the principle of energy justice in Australia. These policies largely target energy affordability because it directly affects economic stability, social welfare, and quality of life. Regulatory frameworks aim to make energy both accessible and affordable while maintaining the sustainability and reliability of the supply. As such,

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47 Dr Ron Ben-David, *Submission 64*, pp. 7–8.

48 Dr Ron Ben-David, *Submission 64*, p. 8.

49 Professor Penelope Crossley, *Submission 58*, Attachment 1, p. 30.

50 Professor Penelope Crossley, *Submission 58*, Attachment 1, p. 30.

51 Professor Penelope Crossley, *Submission 58*, Attachment 1, p. 30.

governments at all levels provide targeted interventions to enhance energy efficiency measures, increase support for low-income households, promote competitive energy markets, and encourage the adoption of cost-effective renewable energy technologies, particularly by disadvantaged communities.[52]

4.52 Nevertheless, the committee received a range of evidence outlining the impact of rising energy prices on vulnerable consumers, and the inability of vulnerable consumers to access the benefits associated with a transition to renewable energy. It was noted that:

> …while renewable energy has the potential to reduce energy costs in the long term, the transition period has seen rising energy prices in some regions. This has placed financial strain on households and businesses, particularly those with limited capacity to invest in energy efficiency or distributed energy technologies.[53]

4.53 ACOSS noted in its submission that the transition from 'a fossil fuel dependent centralised energy system with passive users, to a more distributed renewable energy system in which energy users can generate, store and trade as well as consume their own energy…has largely benefited people with wealth, choice and control'. It stated that:

> …people experiencing disadvantage pay disproportionately more for the energy bills and towards the cost of the transition to clean energy, while missing out on the benefits delivered through energy efficiency, electrification and new technologies.[54]

4.54 Further, energy affordability is a significant factor in determining the well-being of low-income Australians – approximately 40 per cent of all households. Such households have been 'hardest hit by the rapid escalation in electricity prices evident since 2005–06'.[55]

4.55 ACOSS highlighted that vulnerable households were 'the least well equipped to understand and respond to the different pricing structures, and often had the least flexibility in terms of shifting their electricity use to different periods, and ultimately paid higher prices for their electricity under time-of use tariffs'.[56]

4.56 ACOSS also noted the AER's *State of the Energy Market 2023* report found that:

> …customers experiencing vulnerability are likely to face additional challenges keeping energy bills low because they may be less able to implement some of the most effective means of reducing energy bills, including modifying energy use, making home energy efficiency upgrades,

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52 Professor Penelope Crossley, *Submission 58*, Attachment 1, p. 31.

53 Mr Greg Peak, *Submission 33*, p. 3.

54 ACOSS, *Submission 52*, p. 2. See also Mr Greg Peak, *Submission 33*, p. 3.

55 ACOSS, *Submission 52*, p. 5.

56 ACOSS, *Submission 52*, p. 4.

> adopting new technologies and shopping around for better deals. As such, customers experiencing vulnerability are more susceptible to periods of high energy prices and disproportionately represented in the number of customers experiencing debt, hardship, and disconnection.[57]

4.57 It was suggested that governance and policy reforms are required to support an equitable and accessible energy transition. For example, Rewiring Australia suggested 'reforming rental laws and strata regulations to overcome split incentives, creating innovative financing mechanisms that eliminate upfront cost barriers, [and] ensuring energy concessions and support programs that focus on electrification rather than just bill relief…'.[58]

4.58 The Justice and Equity Centre argued that there is an opportunity for energy regulation, policy and planning to have an 'explicit purpose which better reflects the essentiality of energy in supporting health, wellbeing and prosperity'. It suggested that current regulatory frameworks 'need review and reframing to ensure they equitably protect and promote the interests of all consumers'.[59]

Consumer protection

4.59 The National Energy Customer Framework (NECF) is a suite of legal instruments that regulate the sale and supply of electricity and gas to retail customers. The framework includes the National Energy Retail Law (NERL) which regulates that supply and sale of energy to retail customers in New South Wales, Tasmania, South Australia, Queensland and the Australian Capital Territory.

4.60 As noted in Chapter 1, the NERL provides a range of consumer protections. The NERL also sets out the mechanisms customers can use to resolve complaints and disputes. Under the NERL, retailers and distributors must have their own standard complaint and dispute resolution procedure and must be a member of an energy ombudsman scheme. The NERL also makes provisions for a Retailer of Last Resort (RoLR) scheme for participating jurisdictions and seeks to ensure continuity of supply to consumers in the event of a retailer failure.[60]

4.61 The AER noted that it regulates the retail energy markets in those states and territories which have adopted the NECF. It also regulates the RoLR framework in Victoria since it adopted the relevant part of the NECF in 2024. The AER stated that it protects 'consumers experiencing vulnerability while enabling

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57 ACOSS, *Submission 52*, p. 3.

58 Rewiring Australia, *Submission 78*, p. 7.

59 Justice and Equity Centre, *Submission 28*, p. 2.

60 Department of Climate Change, Energy, the Environment and Water, *Submission 12*, p. 2.

consumers to participate in energy markets' and to this end, in October 2022 it released the Towards Energy Equity Strategy. The AER submitted:

> This strategy is focused on reducing barriers to participation, supporting consumers experiencing payment difficulty, ensuring the consumer voice is heard in sector reforms and improving affordability by reducing the cost to serve energy consumers through 15 specific actions.[61]

4.62 The AER outlined its progress against a number of its action items, noting in particular its work advocating for 'sector wide "game changer" reforms…which recognises the enormous potential in the energy sector to innovate and better allocate resources to not only provide a safer, healthier experience for consumers, but also potentially saving money and resources throughout the system'. It also noted that it is progressing implementation of the Better Bills Guideline to provide guidance to retailers on preparing and issuing bills to make it easier for consumers to understand billing information. This initiative would also require retailers to notify consumers if they could be on a better retail plan.[62]

4.63 The AER is also responsible for assessing and approving customer hardship policies to ensure compliance with its Customer Hardship Policy Guideline. It noted that all energy retailers must have such a policy to support residential consumers experiencing bill payment difficulties, and that retailers must also assist such consumers to better manage their energy bills on an ongoing basis.[63] Mrs Clare Savage, Chair, AER told the committee:

> Our latest data shows that the proportion of residential electricity customers accessing hardship programs has increased from 1.4 per cent to 1.9 per cent over the past 12 months. This reflects both higher energy prices and broader cost-of-living pressures coupled with our compliance and enforcement focus on ensuring retailers give their customers the help they may need.[64]

4.64 Mrs Savage also noted that there has been 'an increase in the number of customers entering hardship programs with low levels of debt, particularly even less than $500'. Mrs Savage explained that 'the average debt on entry to a hardship program has fallen' and that the AER expects to 'see customers getting help earlier, given our significant compliance and enforcement focus on that'.[65]

4.65 Mrs Savage went on to explain that in 2022 the AER began implementing the Towards Energy Equity strategy to 'rethink and reshape how the energy market

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61 Australian Energy Regulator (AER), *Submission 15*, pp. 19–20.

62 AER, *Submission 15*, p. 20.

63 AER, *Submission 15*, p. 20.

64 Mrs Clare Savage, Chair, AER, *Committee Hansard*, 23 October 2024, pp. 28–29. See also Mrs Clare Savage, Chair, AER, *Committee Hansard*, 5 December 2024, p. 13.

65 Mrs Clare Savage, Chair, AER, *Committee Hansard*, 5 December 2024, p. 13.

supports consumers experiencing vulnerability and those who will always struggle to participate in the energy market'. As such:

> Our strategy includes the implementation of the better bills guideline, a customer vulnerability toolkit for retailers to improve their identification and support and real payment difficulty protections, the outcomes of which we hope to share with energy ministers in the coming year.[66]

4.66 The AER told the committee that its 'compliance and enforcement functions are a key regulatory tool to protect energy consumers, build trust with the community and keep the energy system stable and secure through the transition'. Mrs Savage outlined to the committee that:

> In recent years, we have expanded our compliance and enforcement activity while maximum penalties have also increased. In the 14 years up to 2018-19, we issued 118 infringement notices totalling $2.36 million and obtained court ordered penalties totalling $900,000. In comparison, since 2019-20, we have issued 121 infringement notices totalling $3.95 million and obtained court imposed penalties totalling $48.5 million.[67]

4.67 Mrs Savage explained that much of the enforcement work of the AER focuses on consumer matters relating to retail law, and noted that these matters have attracted the 'largest penalties from the Federal Court'. Mrs Savage stated:

> We have also pursued failures in generator performance standards, such as our investigations into the statewide system blackout in South Australia or the explosion at Callide C. They are in-depth and technical but essential to building confidence as we continue the transformation of our energy system. We will continue to focus on enforcing compliance with the energy laws and rules in the wholesale networks and retail sectors and take appropriate action when required.[68]

4.68 The AER also noted that it facilitates 'price comparison for consumers in a competitive retail market' through its Energy Made Easy website. Mrs Savage explained:

> In 2023-24, there were over 3½ million visits to Energy Made Easy. More than 1.3 million Australians completed an energy plan search to compare retailers' offers.[69]

4.69 The Justice and Equity Centre noted the 'critical role' the AER plays in 'protecting and promoting the interests of consumers' but stated that there is 'an opportunity to empower the AER by providing a clearer remit'. This would

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66 Mrs Clare Savage, Chair, AER, *Committee Hansard*, 23 October 2024, p. 29.

67 Mrs Clare Savage, Chair, AER, *Committee Hansard*, 23 October 2024, p. 28.

68 Mrs Clare Savage, Chair, AER, *Committee Hansard*, 23 October 2024, p. 28.

69 Mrs Clare Savage, Chair, AER, *Committee Hansard*, 23 October 2024, p. 29. See also, Mr Simon Duggan, Deputy Secretary, Department of Climate Change, Energy, the Environment and Water, *Committee Hansard*, pp. 39–40.

'allow the AER to operate more independently, and to more aggressively promote the interests of consumers'.[70]

4.70 The Justice and Equity Centre suggested that the AER's role should be more clearly delineated from the AEMC and AEMO. Further, its 'role in assessing the efficiency and prudency of projects as needed in the ISP should be strengthened'.[71]

4.71 Submitters also called for improved consumer protection to increase confidence in emerging technologies and markets such as CER. New CER products and services are often closely integrated with existing energy retail arrangements having a direct impact on consumers' supply and use of energy. In this context, it is important to note that existing consumer protections do not necessarily extend to new CER products and services.[72]

4.72 The NECF also provides customer protections which extend beyond those provided by the Australian Consumer Law (ACL). The NECF applies in all NEM jurisdictions, however each jurisdiction has modified its application to suit local conditions, and Victoria has only adopted it to a limited extent.[73]

4.73 The NECF applies to some CER technologies and circumstances, but not others. For example, when a grid-connected customer buys a solar PV and battery system from a third party, the applicable consumer protections are: the NECF for the electricity purchased from the grid; and the ACL for the solar PV and battery system. Further, different dispute resolution and enforcement processes are available depending on whether the issue falls within the remit of the ACL or the NECF. As such, navigating the NECF is difficult for consumers.[74]

4.74 The Energy and Water Ombudsman Victoria (EWOV) noted the findings of the AER in 2023:

> 'simply extending the [existing consumer protection framework] to new energy services is not viable, given the framework is specific and prescriptive to the retail supply of electricity and gas and the essential nature of this service'.[75]

4.75 EWOV suggested that an effective customer protection framework requires 'easy access to a free, fair and independent external dispute resolution service' for customers encountering issues with a product or service. Without such

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70 The Justice and Equity Centre, *Submission 28*, p. 4.

71 The Justice and Equity Centre, *Submission 28*, p. 4.

72 Professor Penelope Crossley, *Submission 58,* Attachment 1, p. 12.

73 Professor Penelope Crossley, *Submission 58,* Attachment 1, p. 12.

74 Professor Penelope Crossley, *Submission 58,* Attachment 1, p. 12.

75 Energy and Water Ombudsman Victoria, *Submission 35*, p. 1. See also, AER, *Review of consumer protections for future energy services*, November 2023, pp. 1–2.

access, customers 'may lose trust in providers of these products and services more broadly'. EWOV suggested that ensuring that EWOV and its counterparts in other state and territory jurisdictions should be provided with appropriate jurisdiction to manage disputes arising from CER products and services.[76]

4.76 Dr Brendan French, CEO, Energy Consumers Australia (ECA), similarly told the committee that ECA is of the view that consistency of jurisdiction between states and territories is required. Dr French stated:

> Consumers have ready access to an energy ombudsman in most of the mainland states—certainly, all the NEM states—but not all the ombudsmen have the same jurisdiction. Critically, they don't all have the same capability to respond to more cutting-edge issues. For example, for consumer energy resources, if I went and put a solar panel on my roof and a battery on my house, or I went and bought an electric vehicle, there's no guarantee that all of the activities that go into purchasing, installing, and checking standards would be captured by the jurisdiction of an ombudsman. In some instances, I might have to go to a trading jurisdiction, the Commonwealth Ombudsman, a government body or a court. We think that in the context of the energy transition, it's critically important that consumers have very much a one-stop-shop for dispute resolution. That's why we support the energy ombudsman having consistent and strong jurisdictions to respond to these newer energy challenges.[77]

4.77 Other submitters noted that while the New Energy Tech Consumer Code (NETCC) is crafted by leading industry and consumer groups, implementation remains voluntary. The ACTU suggested that the NETCC provides a 'quick and effective way to build consumer confidence' in the rapidly evolving technologies and business models of the CER marketplace. As such, expanding the NETCC to establish a 'national trusted protection scheme for consumers and developing mandatory structures for its adoption is crucial for enhancing consumer trust in CER adoption'.[78]

Consumer representation and consultation

4.78 A range of government bodies undertake consultation as an important component of their work in regulating the energy market. However, the committee also received criticism of the scope and value of such consultation in relation to consumers. These issues are explored below.

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[76] Energy and Water Ombudsman Victoria, *Submission 35*, p. 2.

[77] Dr Brendan French, Chief Executive Officer, Energy Consumers Australia, *Committee Hansard*, 29 October 2024, p. 16.

[78] ACTU, *Submission 51*, p. 9.

4.79 ECA, the 'independent, national voice for residential and small business energy consumers', was established to 'promote the long-term interests of Australian consumers to decision makers and industry.[79]

4.80 Dr Michael Schaper, Chair, ECA, told the committee that it is 'structured as an independent not-for-profit organisation, and that independence is fairly integral to our ability to provide evidence and input into the processes in which we're involved'.[80]

4.81 ECA noted in its submission that while energy companies and industry peak bodies are well staffed with government relations and policy advocates who promote industry interests, it is a small organisation.[81] Dr Schaper told the committee:

> We're funded by levies paid for by consumers within the NEM states. It is a passingly small amount that equates to much less than one per cent. It is approximately 0.03 per cent of an average household electricity bill, or, that is to say, about 66c in the average bill. That hasn't changed, effectively, in the 10 years or so since our inception. Back in 2015 it was 65c in the bill. Today it is 66c. That leaves us with a budget of approximately $9½ million. In the 2023-24 financial year, we had a $9.6 million dollar budget, $2.6 million of which went to grants that we fund for external parties, leaving us with about $7 million to operate an organisation with 25 staff. We run a very lean entity. We seek simply to break even. In comparison to the other players within the sector, especially in the decision-making processes of government and regulatory frameworks, it is passably small to have 25 staff compared to the resources available elsewhere.[82]

4.82 It also noted that while many other consumers advocates 'do excellent work', none are specifically funded to advocate to the energy sector on behalf of all households and small businesses in Australia.[83] Dr Schaper told the committee that the ECA is 'trying to build the capability of other voices within the consumer and small-business space', and noted that:

> Australia is the only country that has specifically made provision for a national voice for consumers and small businesses within the overarching frameworks and decision-making processes. No other advanced, developed economy has done that, and we think that makes an important contribution. It's one of the few countries in the world where you have a national

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79 Energy Consumers Australia, *Submission 13*, p. 1. See also Dr Michael Schaper, Chair, Energy Consumers Australia, *Committee Hansard*, 29 October 2024, p. 11.

80 Dr Michael Schaper, Chair, Energy Consumers Australia, *Committee Hansard*, 29 October 2024, p. 11.

81 Energy Consumers Australia, *Submission 13*, p. 4.

82 Dr Michael Schaper, Chair, Energy Consumers Australia, *Committee Hansard*, 29 October 2024, p. 11.

83 Energy Consumers Australia, *Submission 13*, p. 4.

> consumer body that can actually provide a full picture when it comes to this most complex policy area, which is energy.[84]

4.83 ACOSS noted the impact of a lack of funding on its ability to participate in advocacy. Ms Kellie Caught, ACOSS told the committee:

> …we absolutely need more adequate funding for consumer advocates because we see that, for example, when we come to do reviews, inputs into inquiries like this, market rule changes et cetera, it's dominated by networks, energy retailers and in some cases industry associations, but the consumer voice is lost because we're just not resourced to be able to participate. At any one time, there are something like 10 to 15 inquiries happening. We're lucky if we can be at one of those to represent people and communities experiencing disadvantage.[85]

4.84 Submitters were broadly supportive of the work of ECA and described it as doing 'good work, with very broad remit and limited resources given the significant growth in regulatory processes, including energy network revenue determinations and the increasing pressure on consumers due to the rising cost-of-living'.[86]

4.85 However, submitters also noted that ECA is unable to offer targeted advice to consumers. Dr Ben-David described ECA as being 'expected to be a master of all trades, and so, not surprisingly, it is a master of none'.[87]

4.86 As such, while the ECA does a 'good job of providing broad advice', consumers 'need much more bespoke support and federal and state governments need to think about how best to provide that bespoke support, because it will be crucial to underpin social licence' for a transition to renewables.[88]

4.87 The Coalition for Conservation also suggested that the ECA should both 'challenge instances of groupthink between the other statutory entities', and advocate on behalf of consumers to ensure 'better protection for consumers from rising energy costs and a proven approach to successful and sustainable decarbonisation'.[89]

4.88 The Australian Pipelines and Gas Association (APGA) which represents the owners, operators, designers, constructors and service providers of Australia's pipeline infrastructure, was also critical of the ECA's focus on 'electrification' despite its 'notional' remit of representing all energy consumers. APGA

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84 Dr Michael Schaper, Chair, Energy Consumers Australia, *Committee Hansard*, 29 October 2024, p. 11.

85 Ms Kellie Caught, Program Director, Climate Change and Energy, ACOSS, *Committee Hansard*, 31 October 2024, p. 65.

86 Erne Energy, *Submission 32*, p. 6.

87 Dr Ron Ben-David, *Submission 64*, p. 11.

88 Erne Energy, *Submission 32*, p. 6. See also, Nexa Advisory, *Submission 26*, pp. 4–5.

89 Coalition for Conservation, *Submission 25*, p. 5.

suggested that the national focus on electrification as the sole solution to gas decarbonisation has led to ECA providing insufficient support for current residential and small business gas customers. [90]

4.89 The Justice and Equity Centre argued that there is a need for 'a structure to more durably establish capacity for consumer advocacy from a broader range of organisations, across jurisdictions'.[91] Similarly, Dr Ben-David suggested:

> There is a place for the role ECA currently plays, but there is also a role for a highly specialised consumer body that can 'mix it up' with regulators and enormously well-resourced industry players during regulatory proceedings.[92]

4.90 Professor Bruce Mountain, Director, Victoria Energy Policy Centre alternatively suggested that:

> One way forward might be to approach rate payer, consumer and business associations to encourage them to nominate some of their members to perform the equivalent of periodic "jury service" in energy consumer representation. These individuals should be supported through access to a standing panel of technical advisors who they can select and direct as they choose, to assist them in their task of representing consumer interests. Such a model is likely to result in consumer representation that might be able to claim greater legitimacy as representing the perspectives of households and businesses that actually pay the bills.[93]

4.91 Rewiring Australia called for the reformation of all market bodies to include at least one consumer representative on their boards.[94]

4.92 AEMO noted that it runs a dedicated consumer forum to provide regular updates and exchange information on key AEMO initiatives for consumer and community advocates. It also noted that its newly formed Consumer and Community Reference Group (CCRG) will complement the work being undertaken by its other consultation groups in providing additional, broader, views and context to specific issues.[95]

4.93 Engineers Australia and the Australian Academy of Technological Sciences and Engineering, in a joint submission, while noting the work of the CCRG, submitted that even those with technical experience such as electrical engineers do not have sufficient time to examine any proposed changes to processes and

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90 Australian Pipelines and Gas Association, *Submission 77*, pp. 10–11.

91 The Justice and Equity Centre, *Submission 28*, p. 6.

92 Dr Ron Ben-David, *Submission 64*, p. 11.

93 Professor Bruce Mountain, *Submission 8*, p. 29.

94 Rewiring Australia, *Submission 78*, p. 4.

95 Australian Energy Market Operator, *Submission 14*, p. 16.

rules. Further, 'most energy consumers would not even be aware these processes are taking place'.[96]

4.94 Erne Energy stated that:

> …too often consumers have no influence because industry…have decided on the outcome and the consultation is window dressing. Additionally, the market bodies give greater weight to industry and political stakeholder views, and this would be the case even if consumers were able to flood a consultation with submissions.[97]

CER advocacy

4.95 As noted above, submitters are broadly supportive of the work of the ECA but some noted that it has traditionally focused on advocating for traditional energy customers (particularly those in vulnerable populations). As such, submitters called for specific representation of CER consumers, noting their particular needs.

4.96 Nexa Advisory recommended that a new independent consumer representative body be established separate to ECA, representing CER consumers within policy and decision-making. It suggested that such a body would ensure transparency regarding how such consumers are considered within the governance of each market and regulatory body.[98]

Financial impost on consumers

4.97 As noted above, the transformation of the energy market over recent decades has not been without some cost to the consumer. SACOSS told the committee:

> …energy policy changes or outcomes will inevitably have social equity implications, for better or worse. Recent changes to energy market design, rules and regulations; changes in technologies, services and market conditions; and the unequal distribution of energy market costs, have already created wide-ranging and negative social equity impacts. Unfortunately, there is potential for this to get worse.[99]

4.98 In examining issues related to the integration of CER into the existing market, the committee received evidence regarding the imposition of time-of-use tariffs and export charges. For example, in July 2024, Ausgrid, the largest distributor of electricity on Australia's east coast, announced the introduction of a two-way tariff for residential and small business customers to encourage the export of electricity to the grid later in the day. Customers will be charged 1.2

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96 Engineers Australia and Australian Academy of Technological Sciences & Engineering, *Submission 18*, p. 4. See also Department of Climate Change, Energy, the Environment and Water, *Submission 12*, p. 5.

97 Erne Energy, *Submission 32*, p. 7.

98 Nexa Advisory, *Submission 26*, p. 12.

99 SACOSS, *Submission 11*, p. 2.

cents/kilowatt hour (kWh) for the electricity they export above a free threshold during the peak export period (10am to 3pm). Customers will also receive a payment or credit of 2.3 cents/kWh for the electricity exported during the peak demand period (4pm to 9pm).[100]

4.99 Mrs Clare Savage, Chair, AER, told the committee that tariffs 'encourage and incentivise…optimal use of solar and batteries through the day'.[101] Mrs Savage explained:

> Time of use network tariffs are a critical way that networks communicate to retailers when their assets can be used. Increasingly, there is some opposition to time of use tariffs. If we don't like time of use tariffs and giving people price signals, we will need to have greater levels of control about when different assets are used through the day. If we don't do those things in combination or one or the other or the two together, we risk higher bills. It's very much a potential risk at this point rather than an actuality. What I'm trying to do as the AER chair is make sure that we are doing everything to make sure that doesn't eventuate.[102]

4.100 Other witnesses however, told the committee that a 'shift to "time-of-use" cost-reflective tariffs will leave some consumers worse off if they don't have the "life flexibility" or resources to afford technology to enable them to change energy usage patterns'.[103]

4.101 Ms Stephanie Bashir, CEO, Nexa Advisory, told the committee that a 'proper review on how we actually get tariffs that are up to date and consistent' is important. Ms Bashir stated that at present, 'we continue to introduce mechanisms and tariffs that penalise consumers who are trying to do the right thing'.[104] Ms Bashir argued for network tariff reform that would incentivise the uptake of household batteries which would 'resolve' the issue of high electricity prices and 'people really struggling to pay their bills'.[105] Ms Bashir stated:

> We've had over 400,000 batteries installed over the last decade. In this year alone 147,000 batteries have been installed. You can look at just the pure cost. You can also look at it from a broader perspective. What are some of the things we can do to help actually incentivise these batteries? An example is tariff reform. We've talked about network tariff reform for decades. We still don't have the right tariffs that incentivise these types of purchases. It is

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100 Ausgrid, Two-way pricing for grid exports Factsheet, Ausgrid Two-Way Pricing Fact Sheet FINAL - PRINT, (accessed 10 December 2024).

101 Mrs Clare Savage, Chair, AER, *Committee Hansard*, 23 October 204, p. 36.

102 Mrs Clare Savage, Chair, AER, *Committee Hansard*, 5 December 2024, p. 34.

103 SACOSS, *Submission 11*, p. 2.

104 Ms Stephanie Bashir, Chief Executive Officer, Nexa Advisory, *Committee Hansard*, 30 October 2024, p. 10.

105 Ms Stephanie Bashir, Chief Executive Officer, Nexa Advisory, *Committee Hansard*, 30 October 2024, p. 9.

> just like what we had with solar a decade ago. Solar technology was very expensive. With the right incentives, tariffs, demand for it and competition, Australia now leads the way in rooftop solar. We really should be looking at how we can replicate a similar model for behind the meter batteries.[106]

4.102 Submitters also noted that 'network costs make up two-fifths of the electricity bill (more in some network areas) and at present are recovered via consumption tariffs through a combination of fixed and usage charges'. Households able to substantially reduce their usage, particularly those able to afford technologies such as rooftop solar, contribute less to network costs. As such, households unable to afford such technologies pay a greater share of all network costs through network revenue caps and non-cost reflective tariffs.[107] ACOSS stated:

> As more and more costs of the energy transition are being loaded on to energy bills via subsidies and tariffs people experiencing financial disadvantage are paying disproportionately more of the costs of the transition. For example, there is research that finds subsidy schemes for small-scale solar panels recovered through electricity bills are inequitable and regressive, such as feed-in tariffs and the Small-Scale Renewable Energy Scheme (SRES), which provide direct financial benefits to solar households.[108]

4.103 The AER also noted that 'electricity network costs are now increasing'. It submitted that 'a significant driver of this has been the economy-wide factors of higher inflation and rising interest rates, causing a higher rate of return compared with levels in previous 5-year regulatory periods'. The AER also told the committee that it has implemented a range of incentive schemes which have resulted in lower costs for consumers. These schemes include:

- Efficiency benefit sharing scheme (EBSS) which provides networks with additional financial incentives to undertake efficient operating expenditure over time.
- Capital expenditure sharing scheme (CESS) which provides networks with additional financial incentives to undertake efficient capital expenditure over time, to ensure that only efficient capital expenditure is added to the regulated asset bases.
- Service target performance incentive scheme (STPIS) which provides electricity network service providers with additional financial incentives for maintaining and improving network performance, to the extent that consumers are willing to pay for such improvements.[109]

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106 Ms Stephanie Bashir, Chief Executive Officer, Nexa Advisory, *Committee Hansard*, 30 October 2024, p. 9.

107 ACOSS, *Submission 52*, p. 3. See also, Ms Kellie Caught, ACOSS, *Committee Hansard*, 31 October 2024, p. 65. See also, SACOSS, *Submission 11*, p. 2.

108 ACOSS, *Submission 52*, p. 3.

109 AER, *Submission 15*, pp. 7–8.

4.104 However, 'while the incentive framework drives businesses to be more efficient, we are now seeing significant increases in proposed capital expenditure in electricity network businesses' revenue proposals'.[110] This increase has been driven by a range of factors, including the integration of new investments in renewable energy for transmission networks, and integration of CER distribution networks. The AER stated:

> These types of investment are critical in aiding the energy transition. However, given network charges make up over 40% of customer bills, it is important that such investments are prudent and efficient so that they involve least cost for consumers.[111]

4.105 The AEMC told the committee that it is undertaking a 'holistic review' of the way electricity prices are structured for residential customers, which includes looking at the way distribution network charges are set, how they feed into retail prices, and how that turns up for customers in relation to both products and services'. Ms Anna Collyer, Chair, AEMC, stated:

> In that respect, in particular, we're very interested in understanding different customer cohorts—customers who are able to access the assets I talked about earlier but recognising very clearly there are customers who are not in that category—and seeking to ensure that electricity prices work for all of those customers and that we don't end up with a greater energy divide as a result of the transition.[112]

110 AER, *Submission 15*, p. 8.

111 AER, *Submission 15*, p. 8.

112 Ms Anna Collyer, Chair, AEMC, *Committee Hansard*, 5 December 2024, p. 23.

Chapter 5
Concluding comments and recommendations

Concluding comments

5.1 The committee acknowledges the extensive changes in the technology, demand patterns, consumers' expectations and the introduction of decarbonisation targets since the introduction of Australia's energy market legislation in the 1990s. Despite these changes and the complexities linked to decarbonising our economy, very little within the energy governance framework has substantially changed or evolved since the original setup. The committee notes that some submitters suggested that a major overhaul of the National Energy Market (NEM) framework would be required to address the challenges of opportunities of the energy transition.

5.2 The committee received a range of concerning evidence regarding a perceived lack of accountability and transparency on the part of market bodies tasked with governing the NEM. The need for reform is obvious. Effective governance is critical for the future of a secure, cost-effective and efficient energy market. Effective planning has never been more important to successfully deliver the National Electricity Objectives (NEO). In this context, the Integrated System Plan (ISP) framework must enable the development of a plan, which can meet the energy needs of homes and businesses and achieve decarbonisation objectives without putting enormous costs on consumers because of inefficient system expansion. However, as discussed throughout Chapter 3, submitters were critical of various aspects of the ISP planning process, methodology used, approach to deliver the NEOs and the resulting ISP projects deemed actionable.

5.3 Australians cannot simply opt out of the electricity market. While the conceptualisation of consumers in regulatory frameworks has shifted in focus to those who are now able to actively participate in the market, many Australians remain passive consumers unable to shape their experience in the energy market. Further, many Australians are being left to grapple with rising energy costs, exacerbated by a range of tariffs and charges, during a cost-of-living crisis. It is clear that the energy market continues to evolve, but that planning and policy frameworks have not kept pace with the many and rapid changes.

5.4 This committee was established to address the need to review the operation of the NEM including its governance, planning and performance in decarbonising the economy. However, while acknowledging the importance and urgency of this inquiry, the committee notes the short reporting date and the ways this has limited its ability to further explore many of the complex issues raised in evidence. The committee suggests that the importance of this issue warrants an

ongoing inquiry in the next Parliament through a Joint Standing Committee tasked with regulatory oversight, inquiry into specific aspects of the NEM, and potential reforms.

5.5 In addition to parliamentary scrutiny, the urgent need for an independent sector-wide review is evident. It has been over ten years since the Productivity Commission undertook its review into Electricity Network Regulation. As such, the committee is of the view that the Productivity Commission remains best placed to inquire into the current state of the regulation of the national energy market. The committee believes that such an inquiry should examine a range of issues including the adequacy of the planning regime and where responsibility for planning should lie; potential conflicts of interest in government ownership of energy assets; management of project costs; impacts on consumers; and transmission access reform.

5.6 The Productivity Commission should also examine whether any of its recommendations from its 2013 Electricity Network Regulation inquiry remain outstanding, or require updates.

Recommendation 1

5.7 The committee recommends that the Australian Government request the Productivity Commission undertake an inquiry into the Australian energy network, with particular focus on:

- **the adequacy of the planning regime in delivering economically efficient outcomes, including a proposed economic test as part of, or separate to, the Regulatory Investment Test for Transmission (RIT-T);**
- **reviewing all current Actionable Projects within six months to ensure they provide sufficient economic value and are in the public interest;**
- **the impact of opportunities in the RIT-T to increase project costs;**
- **the apportionment of system charges including whether project overspend risk should be carried by consumers alone;**
- **transmission access and pricing reform;**
- **reviewing any conflicts of interest, and if required, the development of a plan of divestiture of the Australian Energy Market Operator (AEMO) subsidiaries;**
- **whether responsibility for planning should be the responsibility of states and territories rather than AEMO;**
- **whether conflicts of interest are arising from governments owning energy assets; and**
- **undertaking an assessment of the competitive landscape across the National Energy Market (NEM) to determine where more competition can increase economic efficiency.**

5.8 The committee also recommends the inquiry also examine whether any of the Productivity Commission's recommendations made in the 2013 Electricity Network Regulation Inquiry remain outstanding, or require updating.

Governance

5.9 The evidence received by the committee indicates that the governance arrangements for the market bodies are no longer fit-for-purpose given how quickly the NEM has changed this decade and how much it will continue to change. Throughout the inquiry, the committee heard that the energy governance system lacks transparency, accountability and that the roles and responsibilities of the different governing bodies are ill-defined. In particular, the roles and responsibilities in relation to system planning have evolved considerably. However, very little has changed in relation to oversight, accountability and governance arrangements. The committee is of the view that measures to address these issues must be urgently considered and actioned.

5.10 Noting that the Strategic Energy Plan, which emanated from the Finkel Review was completed early in 2020, the committee is of the view that developing a renewed Strategic Energy Plan for the NEM would provide clarity of direction to market bodies and a clear signal to market participants around delivery and implementation of policies.

Recommendation 2

5.11 The committee recommends the Energy and Climate Change Ministerial Council (ECMC) develop and publish an updated Strategic Energy Plan.

AEMO

5.12 In particular, the committee notes inquiry participants' concerns about the multiple roles and responsibilities that AEMO holds, suggesting that this could create potential conflicts of interest, citing issues with its dual planning functions and operational functions. The issue of AEMO's lack of accountability was highlighted by a number of submitters, notably in relation to the ISP planning process and actionable ISP projects, which are discussed in Chapter 3.

5.13 Given the complexity and the importance of the matter, as a first step, the committee believes that the proposed independent review of Australia's energy governance arrangements will address some of these issues. Importantly, measures to ensure oversight of the AEMO must be considered. Further recommendations towards strengthening AEMO's accountability are discussed in the Planning section below.

Recommendation 3

5.14 The committee recommends terms of reference for the Australian Government's recently commissioned National Electricity Market wholesale market settings review to review the governance structures of the market

participants including an examination of the responsibilities of AEMO, the Australian Energy Market Commission (AEMC), Australian Energy Regulator (AER), and the Transmission Network Service Providers in the Integrated System Plan (ISP), RIT-T, and Feedback Loop process.

Recommendation 4

5.15 The committee recommends the ECMC consider requesting the Commonwealth Finance Minister make the AEMO a corporate Commonwealth entity through a rule made under the *Public Governance, Performance and Accountability Act 2013* (PGPA Act).

5.16 The committee notes that submitters expressed concerns about the lack of transparency and accountability of the Energy and Climate Change Ministerial Council (ECMC) itself. The committee agrees that very little information is publicly available in relation to their work and decision-making processes. As such, it is difficult to assess the effectiveness of the ECMC in providing oversight to the market bodies. The committee also agrees with submitters that the role of the Energy Advisory Panel (EAP) is lacking clarity. The committee sees value in the Department of Climate Change, Energy, the Environment and Water (the Department) making publicly available more information about the role and work program of both the ECMC and EAP.

Recommendation 5

5.17 The committee recommends the Australian Government publish on the Department of Climate Change, Energy, the Environment and Water's website relevant information about the role, function, decision-making processes and work program of the Energy and Climate Change Ministerial Council (ECMC) and the Energy Advisory Panel (EAP), including the terms of reference and operating charter of the EAP.

5.18 In relation to the AER, in addition to the issue of its relationship with the Australian Competition and Consumer Commission (ACCC), the committee recognises that the question of a lack of independent assessment of its performance was raised by some submitters.

AEMC rule-making powers

5.19 The AEMC's rule-making powers were also a cause for concerns as there is no formal mechanism for scrutiny. As such, the committee sees value in the suggestion of Post Implementation Reviews (PIRs) across major policy changes within the National Electricity Rules (NER).

Recommendation 6

5.20 The committee recommends the ECMC direct the AEMC to conduct post-implementation reviews on rule changes to determine whether rule changes

are effective and operate as intended. These reviews should be published on the AEMC's website once concluded.

Planning

5.21 The committee acknowledges the recent review of the ISP framework led by the Department, and the response to the review's 15 recommendations provided by the ECMC. As outlined in Chapter 3, the key areas of focus within the ECMC's response focused on the following matters:

- Integrating gas into the ISP
- Enhancing energy demand forecasting
- Better data on C&I [commercial and industrial] forecasting
- Optimising for the demand side
- Coal fired generation shutdown scenarios
- Improving locational information
- Enhanced analysis of system security
- Jurisdictional policy transparency
- Clarifying policy inclusions
- Improving the accessibility of the ISP
- Incorporating Community sentiment
- Additional Planning inputs.

Review of the Integrated System Plan

5.22 The review was noted in passing by the Department but no other evidence was given, nor was it provided to the committee for its consideration. Given the significance of such a review, in particular as it was conducted instead of the planned AEMC review, the committee is at a loss to understand why it was not raised in evidence. For completeness, the Chair tabled it on becoming in possession of the review.

5.23 The review identified many similar, if not the same, deficiencies as noted by the committee, including but not limited to:

- The ISP now has a significant influence on several segments of the electricity supply chain, in addition to its own role as an electricity transmission plan.
- The need for the integration of gas in the ISP given it will be required for analysing how Distribution Network Service Provider (DNSP) investments, programs and annual plans, may impact Community Energy Resources (CER) and distributed resources development; and thereby the Optimal Development Pathway (ODP) for transmission; and include these findings in the ISP in order to send clearer signals to inform DNSP planning.
- Enhancing consideration of energy storage and renewable generation.
- AEMO giving greater consideration of system security trade-offs for assessing the optimal mix of generation, storage, transmission and other infrastructure that AEMO provide more clarity on if and how uncertain or

unfunded policies are considered in the 2026 ISP to enhance stakeholder understanding and engagement.
- Improving the accessibility of the ISP.
- Incorporating community acceptance considerations into transmission expansion options

5.24 The committee noted that although the Review was completed in early 2024 none of the recommendations were incorporated in the 2024 ISP (or its Draft) and that this was a missed opportunity.

5.25 The committee is of the view that some of the actions endorsed by the ECMC would assist in addressing some of the concerns raised by submitters. The committee notes that the Department and AEMO are discussing these actions and how they will be applied within the 2026 ISP. The committee notes that changes to the legislative framework that governs the development of the ISP, and the establishment of enhanced data and modelling approaches, will be required to implement the key recommendations. The committee believes that work must continue to improve the development of future ISPs and accelerating project delivery across the board. Many of the recommendations made in this report are aligned with the actions endorsed by the ECMC and currently reviewed for potential implementation.

AEMO planning function and accountability

5.26 The committee notes that adding planning to the AEMO's role is at odds with the 2015 Vertigan's recommendation that AEMO's main focus should be on market operations and should not be tasked with policy or market development. Whilst the AER ensures compliance with NERs and as such holds AEMO accountable for the proper running of energy markets and networks it has no oversight of these planning decisions other than deciding where a dispute arises. The committee is concerned that there seems to be very little oversight of the final ISP. It would be reassuring for stakeholders to have the assurance that the ISP meets the NEOs. This could be achieved through the ECMC and AEMO's Board of Directors publicly attesting that the ISP Plan meets the NEOs.

Recommendation 7

5.27 The committee recommends the ECMC member ministers table a statement that each Final Integrated System Plan (ISP) meets the National Energy Objectives (NEOs) in their parliament within 30 days of AEMO publishing the Final ISP, starting with the 2026 ISP.

Recommendation 8

5.28 The committee recommends the ECMC consider a rule change so AEMO's directors must sign off on both Draft and Final ISP attesting the plans meet the NEOs.

Actionable projects

5.29 The committee received a range of evidence about how AEMO identifies actionable projects. Concerns relating to the process included perception of bias, unilateral decisions from AEMO and being too prescriptive. In effect, AEMO has not only planning power through the ISP it has also acquired 'actionable' powers that allow it to predetermine investment decisions without a clear business case nor appropriate accountability. The committee believes it would be prudent to pause AEMO's actionable projects powers until more accountability is built in the market bodies' governance arrangements.

Recommendation 9

5.30 The committee recommends the ECMC consider a rule change to remove AEMO's power to make projects actionable for the 2026 and 2028 ISP subject to the findings of the Productivity Commission review (i.e., Recommendation 1).

5.31 The 2017 Finkel Review recommended that the RIT-T 'should be subject to further review within three years'. The committee heard no evidence that any review has been conducted since. This lack of oversight reinforces the concern that the RIT-T process is conducted without external review. The committee considers it to be a 'closed loop' which reinforces existing biases within AEMO. As such, the committee recommends broader considerations and stricter testing within AEMO's planning processes.

Recommendation 10

5.32 The committee recommends the ECMC consider a rule change to ensure the modelling carried out that determines actionable projects include an economic test, labour market impacts, pricing impacts, and productivity impacts, not just a cost-benefit analysis process.

Contestability mechanisms

5.33 The committee heard a range of evidence around how incumbency favours the existing market bodies and deters new entrants into the market. This likely stifles or at least discourages innovation and improvement, and impedes or defers proposed reforms. A lack of contestability in the procurement, building, ownership and operation functions of new infrastructure projects is artificially restricting consideration of solutions that could reduce cost blowouts, delays and passing excessive costs onto consumers.

5.34 The committee notes the 2022 Options Paper carried out by AEMC looking at 'Transmission Planning and Investing – Contestability', and advocates for the assessment of the models proposed with the goal of increasing a healthy amount of contestability into the system.

Recommendation 11

5.35 The committee recommends the National Electricity Rules (NER) be reviewed to accommodate a rule change that encourages greater contestability and a diversity of providers in the NEM by adopting competitive bidding and recommendations from work carried out by the AEMC in 2022.

Transparency and consultation process

5.36 Issues raised by submitters about the lack of transparency around modelling assumptions, and the difficulty for stakeholders to reproduce ISP modelling is concerning. It is paramount that AEMO ensure that market participants and other stakeholders can easily access all the information necessary to understand AEMO's approach and methodology to modelling. The committee is aware that open-source electricity planning tools are increasingly used worldwide. These could be used alongside PLEXOS to ensure transparency and access, and that alternative approaches and potential methodological improvements are explored.

Recommendation 12

5.37 The committee recommends the AEMO align its modelling approach with open-source software and open data principles.

5.38 The committee acknowledges AEMO's statements on its consultation process and its efforts to consult with consumers. It welcomes the recent establishment of the Consumer and Community Reference Group.

Modelling

5.39 The committee received varied evidence around the adequacy of modelling. The committee acknowledges the governments' policies and legislative framework that need to be taken into account when developing the ISP and its modelling approach. There is however value in ensuring transparency and accountability through the provision of alternative modelling scenarios.

5.40 The committee notes that AEMO's primary function is to be the National Transmission Planner as set out in legislation. However, submitters and stakeholders are of the view that the ISP should not primarily focus on transmission projects. The committee heard numerous criticisms of AEMO's unwarranted slant towards transmission projects, as well as the negative consequences exemplified in cases such as VNI-West and HumeLink. The committee notes the use of counterfactuals in assessing proposals, and the restrictions on this modelling outlined in the ISP methodology. It is of the view that there is some value in expanding the counterfactuals utilised to include consideration of non-network solutions and virtual power plants, and consumer energy resources.

Recommendation 13

5.41 The committee recommends the ECMC consider a rule change to ensure the ISP include the creation of further Candidate Development Paths that incorporate greater use of non-network solutions and non-interconnection versions.

Recommendation 14

5.42 The committee recommends the ECMC consider a rule change to amend the ISP methodology to include consideration of additional counterfactuals when undertaking cost benefit analyses to include consideration of non-network solutions including but not limited to all forms of storage, Virtual Transmission Lines (VTL), virtual power plants (VPP) and other consumer energy resources.

Recommendation 15

5.43 The committee recommends the ECMC consider a rule change to the Cost Benefit Analysis Guidelines so that costs deemed as 'sunk costs' are included in a separate analysis so evidence is clear.

Consumers

CER Roadmap

5.44 The committee welcomes the release of the CER Roadmap in July 2024 and notes its importance in ensuring a consistent, nationally coordinated approach to CER integration.

5.45 It is clear that integration or orchestration of CER is critical for the effective operation of the ISP, yet the responsibility for many critical aspects of such integration sits outside the ISP. As it stands, customers are significantly impacted by a lack of integration, and while a range of reviews are being undertaken by market bodies, the committee considers that further work is required.

5.46 The committee notes with concern evidence received from the 2026 ISP Consumer Panel that the CER Roadmap is under-resourced, and that it will take up to six years to deliver necessary reforms. Noting the rapidly changing energy market marked by widespread uptake of CER, and scheduled closures of existing coal-fired power plants, the need for urgency is evident.

Recommendation 16

5.47 The committee recommends the Australian Government adequately resource the implementation of the Community Energy Resources (CER) Roadmap to accelerate CER integration into future ISPs.

Consumers' interests

5.48 It is vitally important that the interests of ordinary Australians are centred in energy policy and in the work of the market bodies. Appropriate consultation to identify the interests of consumers requires adequate funding and resources, and sufficient technical expertise.

5.49 Though the long-term interests of consumers are purportedly at the heart of Australia's energy market planning, it is evident that market regulators and industry service providers are falling short on delivering this promise.

5.50 Consumers must also be adequately informed and supported in becoming active, engaged market participants. The committee notes initiatives such as the Better Bills Guideline, and the Energy Made Easy website, however it is of the view that more can be done to inform consumers.

5.51 The committee notes the suggestion that a positive duty of care model which would require service providers to act in the best interests of consumers when offering or providing services under contract, and is of the view that further examination of the proposal is warranted.

5.52 The committee also notes the evidence it received in relation to the professional and technical expertise of the boards of the AEMO, AER and AEMC. It is of the view that it would be prudent for market bodies to ensure that the unique views and interests of consumers are appropriately represented in executive positions, and governing boards.

5.53 It is clear from evidence received by the committee that existing consumer advocacy organisations such as Energy Consumers Australia (ECA) are under-resourced to provide advocacy for all sectors of the consumer cohort. In particular, CER consumers are under-represented and as the transition of the energy market continues apace, their views and interests require additional representation.

Recommendation 17

5.54 The committee recommends the ECMC establish a CER consumer advocacy body to assist and enhance the work of Energy Consumers Australia (ECA).

Recommendation 18

5.55 The committee recommends the ECMC commission an independent review of the ECA board to ensure that the interests of consumers are best represented by members with appropriate skills and knowledge to do so.

Recommendation 19

5.56 The committee recommends the AER examine whether a positive duty of care should be imposed on energy market service providers to ensure appropriate protections are offered to consumers.

Recommendation 20

5.57 The committee recommends the ECMC review the National Energy Objectives so that greater weight is given to the long-term interests of consumers.

Technical standards and consumer protections

5.58 The committee accepts the evidence it received in relation to the rapid advancements of CER technology not being appropriately reflected in consumer protection frameworks. Differing technical standards and consumer protection frameworks between state and territory jurisdictions creates confusion and uncertainty for consumers.

5.59 The committee welcomes the CER Roadmap recommendation that a CER Technical Regulator be established. The committee also welcomes the establishment of a CER taskforce to deliver key priorities including nationally consistent standards and consumer protection frameworks. It is of the view that these measures should be expedited to provide important certainty and protection for consumers.

Recommendation 21

5.60 The committee recommends the Australian Government accelerate the establishment of a CER Technical Regulator, and the development of nationally consistent standards and consumer frameworks.

Tariffs and charges

5.61 The committee received a range of evidence in relation to tariffs and charges being paid by consumers, and the impost this is having particularly on vulnerable consumers unable to participate in CER integration. The committee notes that consumers, even those with some access to CER, are not always able to avoid tariffs and charges through behaviour change.

5.62 The committee is of the view that a comprehensive review of electricity pricing is required to ensure that incentivising consumer behaviour through the application of charges and tariffs does not result in the unfair penalisation of those unable to fully participate in the market.

Recommendation 22

5.63 The committee recommends the Australian Government undertake a comprehensive review of network charges to ensure that consumers are not being unfairly penalised.

Senator David Van
Committee Chair
Independent Senator for Victoria

Dissenting Report - Labor Senators

Opening remarks

1.1 Labor Senators thank the Chair for his report and for good faith engagement of the Chair through the inquiry process. Labor senators view this dissenting report as necessary for several reasons. While the inquiry has raised issues with respect to the governance and regulation of energy markets that have merit, and some issues which are not supported by robust evidence or not directly relevant to the terms of reference, we feel the Chair's report and its recommendations largely fail to adequately consider reforms underway, fail to acknowledge past reviews and transparency and consultation processes already in place, and fail to consider the disruptive and duplicative consequences of some recommendations. Labor Senators feel that if all recommendations from the Committee's report were adopted as policy, they would have the effect of:

- Undermining the governance structures of the National Electricity Market (NEM), including the shared responsibilities between states and the Commonwealth with respect to energy market governance,
- Undermine the progress of reforms underway,
- Undermine the reliability and affordability of energy supply by creating investment uncertainty, and
- Diverting valuable resources of government and market bodies from delivering a more affordable and reliable energy system for consumers.

1.2 One of the Chair's key contentions is that there is a lack of transparency in energy planning, governance and regulation. Yet this inquiry has demonstrated that such criticism is unfounded. Australia has one of the world's most open, comprehensive, widely and openly consulted on, and transparently delivered energy system planning mechanisms in the world in the form of the Australian Energy Market Operator's (AEMO's) Integrated System Plan (ISP). The ISP is seen internationally as world's best practise electricity and transmission system planning.[1] Where genuine opportunities for improvement exist, progress is largely already underway, including through reforms to the ISP informed by the recent Commonwealth ISP Review. Indeed, for many of the report's recommendations that Labor Senators do agree with, work has already begun to enact reforms and improvements that will deliver the stated goals as laid out in the Chair's report. What will not assist in the achievement of these goals is the imposition of unnecessary, duplicative and meaningless layers of bureaucracy and parallel processes that will do little to improve transparency or outcomes and instead create wasteful, duplicative work at the expense of efficiency and at the risk of creating investor uncertainty.

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1 Mr Westerman, *Committee Hansard*, 5 December 2024, pp. 34 & 44.

1.3 Labor senators note or agree-in-principle to a number of recommendations but cannot agree with others for these reasons.

1.4 This dissenting report seeks to re-centre the conversation on what matters: evidence-based solutions that ensure Australia's energy transition is practical, equitable, and achievable – delivering the lowest cost electricity for consumers, while delivering a reliable grid and meeting legislated emission reduction goals. Labor Senators affirm the need for strategic investment in transmission and distribution networks, including in new technology and novel solutions to avoid unnecessary capital expenditures, respect for the established regulatory frameworks that govern our energy market, and a commitment to solutions that can be deployed rapidly and economically.

1.5 Australians deserve an energy plan that reflects urgency, clarity, and a deep understanding of how our energy sector operates. Instead, the Committee's report risks stalling progress, creating confusion, and undermining public and investor confidence at a time when certainty and decisive leadership are more critical than ever.

Nuclear energy

1.6 No inquiry on energy planning and regulation in Australia could avoid the underlying imperative to transition the grid to net zero. That this transition represents the most significant shift in the energy grid's makeup since its inception was a key theme of the inquiry.

1.7 Unfortunately, Coalition Senators used the inquiry as an opportunity to prosecute an ideological position on nuclear energy, despite a concurrent House inquiry specifically examining nuclear energy generation in Australia (The House Select Committee on Nuclear Energy). Indeed, the amount of time that discussion regarding nuclear energy took up in this inquiry's hearings is completely disproportionate to the inquiry's terms of reference or (to the credit of the Chair) even its presence in the final report. It is therefore necessary to briefly highlight concerns raised by many witnesses regarding nuclear energy in Australia's energy mix.

1.8 Several witnesses highlighted the inability of nuclear energy to address the urgent need to transition the grid away from coal within the requisite timeframe, determined by likely coal closure dates as well as the imperative to transition energy to meet emission reduction goals, including in other sectors of the economy. Witnesses cited the lengthy process required to adjust the regulatory environment and the substantial time needed to physically construct nuclear power plants as significant impediments to its adoption in Australia.[2]

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[2] See: Ms Savage, *Committee Hansard*, 23 October 2024, p. 3; Ms Boyer, *Committee Hansard*, 31 October 2024, p. 51; Mr Reed, *Committee Hansard*, 31 October 2024, p. 63.

1.9 Mr Feeney from the Australian Energy Council put it simply when given the hypothetical of nuclear prohibitions being lifted tomorrow: "[I]f it were lifted tomorrow, I don't think it would obviate the need to invest in renewables from a timing perspective."[3]

1.10 Additionally, witnesses discussed the high cost of nuclear energy in comparison to firmed renewables.[4] The economic feasibility of nuclear energy remains a critical concern, with renewable energy consistently proving to be a more cost-effective solution, even when firming and storage costs are taken into account.

1.11 Critically, a proponent of nuclear energy, Mr Parker, founder of Nuclear for Climate Australia, advised that reaching net zero by 2050 would likely require the construction of 22 nuclear plants.[5] This figure far exceeds the Coalition's proposed seven plants, starkly illustrating how poorly suited the Coalition's nuclear energy plan is to addressing Australia's energy transition needs.

1.12 Furthermore, considering the national energy market is at least 40 per cent renewable generation already, Dr McConnell from the University of New South Wales provided testimony underscoring that nuclear energy's reliance on high capacity factors makes it incompatible with a grid increasingly dominated by flexible and cost-effective renewable energy:

> One of the challenges that is facing coal plants today and one of the reasons that they are under increasing economic pressure is renewable energy undermining their preferred profile and utilisation rates as well as prices. You would expect the same dynamics for something like a nuclear power plant in 10-plus years from now. How they interact with renewable energy does present a challenge for their economic viability.[6]

1.13 Labor Senators affirm that Australia's energy grid transition must prioritise reliable, lowest cost renewable energy solutions that can be deployed rapidly and economically to meet the challenges of climate change and energy security.

Transmission and distribution

1.14 One of the recurring themes throughout the inquiry was the critical role of both transmission and distribution networks within Australia's energy grid. Extensive discussions highlighted the distinct functions and challenges of each network and underscored their shared importance in achieving a reliable and renewable energy future.

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3 Mr Feeney, *Committee Hansard*, 30 October 2024, p. 5.

4 See: Ms Boyer, *Committee Hansard*, 31 October 2024, p. 5; Mr Reed, *Committee Hansard*, 31 October 2024, p. 63.

5 Mr Parker, *Committee Hansard*, 31 October 2024, p. 42.

6 Dr McConnell, *Committee Hansard*, 29 October 2024, p. 9.

1.15 A key insight from the evidence presented is that the issue at hand is not an "either/or" proposition;[7] rather, investment in both transmission and distribution networks is essential to ensure the grid's reliability and capacity to integrate renewable energy sources. This dual focus is critical to meeting Australia's energy needs sustainably and equitably.

1.16 CEO of Energy Networks Australia spoke to the need for continued transmission investment:

> [Coal-fired power stations] are closing because they are ageing and they are becoming less reliable. We are as a society committed to net zero. Removing coal from the electricity system is one of the lowest cost ways to get there. Added to this, we are expecting the electricity grid to increase significantly—to more than double. This necessarily means building new transmission infrastructure to connect energy from where it is produced in the future in the solar and wind rich regions into our cities and our regions.[8]

1.17 When questioned on what the consequences of delayed investment in transmission would be, Ms Bashir, CEO of Nexa Advisory was clear: "It's higher electricity prices."[9] For this reason alone, Labor Senators view anything that will delay transmission investments, whether it be the creation of regulatory uncertainty, or the promise of a potential federal Liberal government cancelling thus far unspecified transmission projects, as detrimental to consumers and the national interest.

1.18 On the distribution side, the Australian Energy Regulator (AER) provided valuable insights with its focus on enhancing the efficiency of distribution networks as a priority before further capital investments are pursued. This approach is necessary to prevent undue financial burdens on consumers, who are at risk of being adversely affected by excessive capital expenditure.

1.19 Clare Savage, representing the AER, articulated this approach clearly during her testimony:

> The AER is open to addressing barriers to more efficient utilisation of the network and has demonstrated a willingness to look at ring fencing waivers or regulatory sandboxes if it will result in a better outcome for consumers. We need to understand the barriers to the more efficient utilisation of network infrastructure. We need to get crystal clear on the role of distribution system operation. We need to establish what level of network visibility or control over distributor resources is needed to moderate increasing capital expenditure.[10]

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7 Ms van den Berg, *Committee Hansard*, 30 October 2024, p. 4.

8 Ms van den Berg, *Committee Hansard*, 30 October 2024, p. 5.

9 Ms Bashir, *Committee Hansard*, 30 October 2024, p. 11.

10 Ms Savage, *Committee Hansard*, 23 October 2024, p. 29.

1.20 Labor Senators are particularly supportive of the AER's work to address these barriers, which is essential for ensuring that the distribution network operates at maximum efficiency and remains equitable for consumers. Labor Senators also note the endorsement of this work by energy ministers at the recent Energy and Climate Change Ministerial Council (ECMC) meeting in Adelaide on 6 December, noting the Communique statement "Ministers welcomed the initiative of the Australian Energy Regulator on policy led sandboxing to improve access and accelerate deployment and orchestration of CER/DER."[11]

1.21 Criticism of the Integrated System Plan's focus on transmission over distribution is addressed below.

Recommendation 1

1.22 Labor Senators recommend that the Australian Government and States continue to support the Australian Energy Regulator's work to improve the efficiency of the distribution network.

Integrated System Plan

1.23 Another key focus of the inquiry was the Integrated System Plan (ISP) and its perceived shortcomings as a tool in energy planning in Australia. Labor Senators recognise that in developing the ISP every two years, the Australian Energy Market Operator (AEMO) works within a highly prescriptive legislative framework adopted on the basis of the Finkel Review in 2017 under the former Coalition Government.

1.24 Labor Senators note that while the ISP was the basis of much discussion throughout the inquiry, a comprehensive review of the ISP was in fact completed in January 2024 by the Department of Climate Change, Energy, the Environment and Water. All 15 recommendations of the review were accepted by Energy Ministers at the Energy and Climate Change Ministerial Council (ECMC) in March 2024. Furthermore, Energy Ministers agreed to a set of actions to implement the review's recommendations.[12]

1.25 The Chair's view that this was not raised in evidence is not an accurate characterisation. Mr Duggan from DCCEEW raised the review in response to criticism of the ISP by the Chair at the second hearing of the inquiry.[13] DCCEEW

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[11] Energy and Climate Change Ministerial Council, *Meeting Communique*, 6 December 2024, available at: https://www.energy.gov.au/energy-and-climate-change-ministerial-council/meetings-and-communiques.

[12] Energy and Climate Change Ministerial Council, *Response to the Review of the Integrated System Plan*, April 2024

[13] Mr Duggan, *Committee Hansard*, 29 October 2024, p. 42.

also referenced the review in their submission.[14] Additionally, the review was mentioned by a number of other witnesses and submitters.[15] It was the Chair's prerogative (and any other participating Senators) to question witnesses further on the review when they raised it if, as it appears, he required more information.

1.26 Labor Senators view the critical outcomes from the review as:

- Better integration of the changing role of gas in an energy grid dominated by renewables
- Enhancing consideration of consumer energy resources and the distribution network
- Improving the clarity of communication regarding the ISP

1.27 The primacy of these areas was supported by evidence given by AEMO on their foci following the ISP review.[16] Labor Senators view this review and the Energy Ministers' response to it as an appropriate remedy to issues affecting the efficacy of the ISP and look forward to the implementation of its recommendations in the 2026 ISP.

1.28 Indeed, several of the Committee's recommendations regarding the ISP are already being implemented due to the recommendations arising from the review. These are noted below in the Labor Senators' response to each recommendation.

1.29 Labor Senators also congratulate the review for enabling a framework that will allow for more continuous improvement of the ISP into the future.[17]

Recommendation 2

1.30 Labor Senators recommend that the Australian Government continue to support the implementation of recommendations and actions arising from the Commonwealth's ISP Review.

Energy Advisory Panel

1.31 Labor Senators wish to make note of the transition of the Energy Security Board (ESB) to the Energy Advisory Panel (EAP). Clare Savage, Chair of the EAP, described this change as a shift from a focus on implementation of the Finkel Review's recommendations to a coordinating role of market bodies' advice to government.[18]

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14 DCCEEW, *Submission 12*, pp. 4-5.

15 See for example: ISP Consumer Panel, *Submission 76*, p. 6; Dr McConnell, *Committee Hansard*, 29 October 2024, p. 3; Ms Collyer, *Committee Hansard*, 23 October 2024, p. 59.

16 Ms York, *Committee Hansard*, 5 December 2024, p. 33.

17 Mr Westerman, *Committee Hansard*, 5 December 2024, p. 43.

18 Ms Savage, *Committee Hansard*, 5 December 2024, p. 2.

1.32 Labor Senators view this as an improvement to the administrative architecture governing energy markets, avoiding duplication and ensuring efficient and coordinated provision of advice to ministers from multiple perspectives. Clare Savage's testimony supports this:

> From our perspective, we find the opportunity to come together and talk about the sorts of key policy issues that ministers might be considering useful. We've all got our various perspectives. I bring a regulatory focus, Ms Collyer brings a rules focus, and Mr Westerman brings a system operation focus, so it gives us an opportunity to consider what ministers currently have on their plates and to look at our advice in that context. It's certainly useful to us and, we would hope, useful to ministers as well.[19]

1.33 Labor Senators commend this shift and believe it positions the Energy Advisory Panel as a more collaborative and streamlined body for delivering comprehensive and balanced advice to government.

Transparency

1.34 Labor Senators note that much of the criticism about a lack of transparency, from governments as well as market bodies, is not supported by evidence beyond opinion provided. Labor Senators note the ISP goes through a rigorous and open consultation process, from the very beginning of the ISP development process, through to the delivery of the final bi-annual ISP. For example, during the development of the 2024 ISP, AEMO consulted with more than 2,100 stakeholders and considered 220 submissions from industry, investors, consumer and community representatives, network planners and governments.[20]

1.35 Similar levels of consultation and transparency apply to the operation of the AER and Australian Energy Markets Commission (AEMC). Rigorous consultation processes are set out in the National Electricity Rules, as well as National Electricity Law, National Gas Law, and National Energy Retail Law, governing the work of the AER and AEMC. For example, any Australian individual or organisation (except for the AEMC itself) can apply for a National Electricity Rule change with the AEMC.[21] The AEMC initially holds a completely open consultation process on the proposed rule to inform its draft determination. Following the release of a draft determination, the AEMC engages in another round of open consultation before issuing a final rule change

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19 Ms Savage, *Committee Hansard*, 5 December 2024, p. 3.

20 AEMO, *Submission 14*, p. 11.

21 AEMC, *Submission 16*, p. 13.

determination.[22] Similar open consultation processes exist for AER determinations.[23]

1.36 Labor Senators note that witnesses to the inquiry raised the length of time needed to implement rules and other changes and action projects,[24] while also calling for greater transparency and consultation. These two objectives are by necessity in conflict, with greater consultation taking greater time. Labor Senators view the balance struck by current processes is the right one and note the natural conflict between consultation and openness on the one hand, and speed of reform delivery on the other, will inevitably mean market bodies will be criticised for both not engaging in consultation enough and working too slowly.

1.37 In response to criticism that the ECMC, the ultimate governing body for the National Electricity Market, lacks transparency, Labor Senators note ECMC is a sub-committee of National Cabinet and as such must comply with Cabinet Confidentiality. Even though ECMC is covered by Cabinet Confidentiality, ECMC releases a detailed communique after every meeting discussing decisions made and issues discussed.

Labor Senators' Response to Committee Recommendations

Recommendation 1

1.38 Labor Senators **do not support** a review conducted by the Productivity Commission into the Australian energy network. Such a review would create investor uncertainty and confusion, would undermine the work of the National Electricity Market wholesale market settings review[25] currently underway, and in so doing would hurt investment outcomes at a time when AEMO and other market bodies and experts warn the timely delivery of generation, storage and transmission investment is crucial to ensure the reliability and affordability of energy supply. In addition, in recent years there have been a number of reviews addressing the areas outlined in the recommendation including, but not limited to:

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22 AEMC, *Changing the energy rules – a unique process*, available at: https://www.aemc.gov.au/our-work/changing-energy-rules.

23 AER, *Submission 15.*

24 See for example: Professor Brear, *Committee Hansard*, 29 October 2024, pp. 1-2; Dr McConnell, *Committee Hansard*, 29 October 2024, p. 2; Ms Bashir, *Committee Hansard*, 30 October 2024, p. 12; Professor Crossley, 31 October 2024, p. 24; Dr Kuiper, *Committee Hansard*, 31 October 2024, p. 48.

25 DCCEEW, *National Electricity Market wholesale market settings review*, available at: https://www.dcceew.gov.au/energy/markets/nem-wms-review.

- Transmission Planning and Investment Review[26]
- Electricity network economic regulatory framework review 2020[27]
- Coordination of generation and transmission investment[28]
- Transmission Frameworks Review[29]
- Updating the regulatory frameworks for distributor-led stand-alone power systems[30]
- Review of the regulatory frameworks for stand-alone power systems[31]
- Post 2025 market design[32]
- AEMO Renewable Integration Study (RIS)[33]
- ACCC Inquiry into the National Electricity Market[34]

1.39 Labor Senators view the reviews and the ongoing processes of the bodies as sufficient. An additional review by the Productivity Commission would be duplicative and wasteful. It is not clear what the Chair hopes will be achieved by such a review that would provide a different outcome from those already conducted.

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[26] AEMC, *Transmission Planning and Investment Review*, available at: https://www.aemc.gov.au/market-reviews-advice/transmission-planning-and-investment-review.

[27] AEMC, *Electricity network economic regulatory framework review 2020*, available at: https://www.aemc.gov.au/market-reviews-advice/electricity-network-economic-regulatory-framework-review-2020.

[28] AEMC, *Coordination of generation and transmission investment*, available at: https://www.aemc.gov.au/markets-reviews-advice/reporting-on-drivers-of-change-that-impact-transmi.

[29] AEMC, *Transmission Frameworks Review*, available at: https://www.aemc.gov.au/markets-reviews-advice/transmission-frameworks-review.

[30] AEMC, *Updating the regulatory frameworks for distributor-led stand-alone power systems*, available at: https://www.aemc.gov.au/market-reviews-advice/updating-regulatory-frameworks-distributor-led-stand-alone-power-systems.

[31] AEMC, *Review of the regulatory frameworks for stand-alone power systems*, available at: https://www.aemc.gov.au/market-reviews-advice/review-regulatory-frameworks-stand-alone-power-systems.

[32] DCCEEW, *Post-2025 market design*, available at: https://www.energy.gov.au/energy-and-climate-change-ministerial-council/working-groups/energy-transformation-enablers-working-group/post-2025-market-design.

[33] AEMO, *Renewable Integration Study (RIS)*, available at: https://www.aemo.com.au/energy-systems/major-publications/renewable-integration-study-ris.

[34] ACCC, *Inquiry into the National Electricity Market*, available at: https://www.accc.gov.au/system/files/accc-inquiry-national-electricity-market-december-2023-report_0.pdf.

Recommendation 2

1.40 Labor Senators **do not support** the development of an updated Strategic Energy Plan by ECMC. It is the Labor Senators' understanding that the ISP in effects serves as a strategic energy plan so to develop another one would, again, be duplicative and wasteful and create significant industry and investment uncertainty and confusion – impacting investment decisions and as a result the affordability and reliability of energy supply. Issues with the ISP as it currently stands are being addressed through the recommendations from the Commonwealth ISP review which has been endorsed by ECMC.

Recommendation 3

1.41 Labor Senators **do not support** amending the terms of reference of the National Electricity Market (NEM) wholesale market settings review to include issues relating to governance. The review is by definition inquiring into the market settings needed to support a renewable intensive electricity market, and issues of market governance where relevant to the terms of reference will be addressed.

Recommendation 4

1.42 Labor Senators **do not support** making the AEMO a corporate Commonwealth entity. This recommendation is neither deliverable nor needed. This recommendation is fundamentally inconsistent with the National Energy Market Agreement[35] (AEMA) between states and the Commonwealth which underpins the agreed governance framework of national energy markets including the NEM, and as such would represent a breach of that agreement. Under the AEMA AEMO is accountable to ECMC rather than any one minister or jurisdiction, as is viewed appropriate given AEMO's cross jurisdictional as well as inter-jurisdictional role. Labor Senators agree that AEMO has significant accountability via the structure of the market bodies and ministerial oversight through ECMC.

Recommendation 5

1.43 Labor Senators **note** this recommendation, as it is redundant. Ample information regarding the role and functioning of ECMC are already published[36] including the AEMA cited above which serves as the terms of reference for ECMC.

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[35] DCCEEW, *Australian Energy Market Agreement (as amended December 2013)*, available at: https://www.energy.gov.au/energy-and-climate-change-ministerial-council/energy-ministers-publications/australian-energy-market-agreement-amended-december-2013.

[36] DCCEEW, *Energy and Climate Change Ministerial Council*, available at: https://www.energy.gov.au/energy-and-climate-change-ministerial-council.

Recommendation 6

1.44 While Labor Senators **agree-in-principle** that the Australian Energy Market Commission should conduct post-implementation reviews of rule changes, noting that there are sometimes relatively minor changes that don't necessarily require review, Labor Senators also note that the NEM wholesale market settings review will practically perform this role in its work, to report back to ECMC in 2025. In addition, Labor Senators note that the structure of the rule change process effectively allows for any rule change to be reviewed through the lodgement of a proposed change to the rule. As a result, while Labor senators agree-in-principle to this recommendation, we do not see it as a priority for immediate implementation.

Recommendation 7

1.45 Labor Senators **do not support** ECMC ministers tabling a statement that each Final ISP meets the NEOs in their parliament. This is an unnecessary and burdensome extra level of administration. The ISP by definition must meet the NEOs so the tabling of this statement in the various parliaments of Australia is tautological and wasteful.

Recommendation 8

1.46 Labor Senators **do not support** a rule change so that AEMO's directors must sign off on both the Draft and Final ISP attesting the plans meet the NEOs. The criticism of this recommendation is the same as Recommendation 7; it is an unnecessary step that is already implied in the rules and guidelines that underpin the development of the ISP. In effect, this recommendation is redundant as the AEMO board already signed off on the ISP and draft ISP, including its compliance with relevant laws, rules, and guidelines including compliance with the NEO.

Recommendation 9

1.47 Labor Senators **do not support** removing AEMO's power to make a project actionable for the 2026 and 2028 ISPs. This recommendation seeks to undermine and wind back the improvements to transmission planning and delivery made since the Finkel Review without a strong evidence base that such a change is necessary, and would create significant investor uncertainty resulting in costly delays to transmission projects. This recommendation is also contingent on Recommendation 1 for which reasons against have already been outlined. Regardless, such a step would unacceptably slow the planning process immensely.

Recommendation 10

1.48 While Labor Senators **agree-in-principle** with the recommendation to include additional analysis when conducting modelling to determine actionable projects, in particular on labour market and economic impacts. However, Labor

Senators question whether this is best done by AEMO in the context of the ISP given AEMO energy expertise (rather than broader economic analysis expertise) and given resource constraints. Labor Senators therefore recommend government consider the most appropriate approach to consideration of actionable project economic assessments.

Recommendation 11

1.49 Labor Senators **do not support** this recommendation and note the AEMC continues to monitor developments in the implementation of jurisdictional contestability regimes in NSW, Victoria and overseas to capture useful insights.

1.50 The AEMC's transmission access reform report recommended that jurisdictions and market bodies establish a collaborative forum to support the effective delivery of jurisdictional schemes. While this forum will have a focus on operational issues and congestion, the implementation of contestability can be a key part of jurisdictional schemes and will therefore likely be considered and monitored as part of this forum.

1.51 In addition, recent work programs have considered contestability in networks. These include work undertaken by States in establishing jurisdictional frameworks:

- Work undertaken in NSW to establish and implement the Electricity Infrastructure Investment Act 2020 (the EII Act).[37] This includes the AER's consultation processes in developing its revenue determination guideline for NSW contestable projects.
- Work undertaken in Victoria to establish and implement the Victorian Transmission Investment Framework (VTIF),[38] notwithstanding that contestable works already formed part of Victoria's transmission planning.
- Work programs to consider the effectiveness of contestability in the context of ring-fencing and the use of non-network solutions, including:
  - On 18 July 2023, the AER completed a review of its ring-fencing guideline for electricity transmission.[39]

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[37] NSW Government, *Electricity Infrastructure Investment Act 2020 No 44*, available at: https://legislation.nsw.gov.au/view/html/inforce/current/act-2020-044.

[38] DEECA, *Victorian Transmission Investment Framework*, available at: https://www.energy.vic.gov.au/renewable-energy/vicgrid/victorian-transmission-investment-framework.

[39] AER, *Review of options to address gaps in transmission ring-fencing framework | Australian Energy Regulator (AER)*, available at: https://www.aer.gov.au/industry/registers/resources/reviews/review-options-address-gaps-transmission-ring-fencing-framework.

- On 9 December 2024, the AER commenced a review of its ring-fencing guideline for electricity distribution.[40]
- On 12 December 2017, the AEMC made a rule on the contestability of energy services that sought to facilitate competition in the emerging energy services market.[41]

Recommendation 12

1.52 Labor Senators **do not support** dictating to AEMO their approach on software and data used in their work. Labor Senators acknowledge these decisions should be made by technical experts to deliver the most sophisticated and robust analysis possible. The inquiry ascertained that AEMO goes to significant lengths to ensure the transparency of it modelling and most agreed that this is of a high standard and is sufficient. Government should not dictate its process given this existing high level of transparency.

Recommendation 13 and 14

1.53 Labor Senators **agree-in-principle** with these improvements to the ISP but note they are already being addressed as part of the implementation of the Commonwealth's ISP review.

Recommendation 15

1.54 Labor Senators **note** this recommendation and have no objection in principle to adjusting the Cost Benefit Analysis Guidelines should such a change be deemed warranted following stakeholder consultation and AER analysis, but any such change should be done through the usual process which involves significant consultation by the AER. Labor Senators also note on 21 November 2024, the AER published final amendments to the Cost Benefit Analysis (CBA) guidelines, the Regulatory Investment Test (RIT) application guidelines and instruments for the Regulatory Investment Test for Transmission (RIT-T) and Regulatory Investment Test for Distribution (RIT-D) following the 2024 Review of the cost benefit analysis and regulatory investment test guidelines,[42] which went

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40 AER, *AER consults on proposed changes to transmission ring-fencing guideline | Australian Energy Regulator (AER)*, available at: https://www.aer.gov.au/news/articles/communications/aer-consults-proposed-changes-transmission-ring-fencing-guideline.

41 AEMC, *Contestability of energy services | AEMC*, available at: https://www.aemc.gov.au/rule-changes/contestability-of-energy-services#:~:text=rule%20change%20requests.-,On%2012%20December%202017%20the%20AEMC%20published%20a%20final%20rule,energy%20services%20rule%20change%20requests.&text=The%20final%20rule%2C%20which%20is,assets%20located%20'behind%20the%20meter'.

42 AER, *2024 Review of the cost benefit analysis and regulatory investment test guidelines*, available at: https://www.aer.gov.au/industry/registers/resources/reviews/2024-review-cost-benefit-analysis-and-regulatory-investment-test-guidelines.

through a significant consultation process including public forums, stakeholder forums and written submissions.

Recommendation 16

1.55 Labor Senators **agree** that the implantation of the CER Roadmap be adequately resourced and note the MYEFO commitment for $36.9 million over six years from 2024–25 to support the optimisation and utilisation of existing grid infrastructure through regulatory reforms and grid enhancing technologies.[43]

Recommendation 17

1.56 Labor Senators **do not support** the establishment of a separate CER consumer advocacy body. Labor Senators view this as something that is and should be part of Energy Consumer Australia's work and rather than a new duplicative body, the existing body should rather be resourced adequately to deliver this work.

Recommendation 18

1.57 Labor Senators **note** this recommendation and note the ECA board is currently determined by agreement by ECMC as set by the ECA constitution. In picking the board of ECA, ECMC must have regard to a skills matrix including relevant skills and expertise to ensure ECA performs its consumer focussed role.

Recommendation 19

1.58 Labor Senators **agree-in-principle** that the AER (and ECMC more broadly) examine whether a positive duty of care should be imposed on energy market service providers, but Labor Senators also note this is already underway, noting the most recent ECMC communique stated:

> Ministers tasked Senior Officials with developing options to strengthen consumer protections and modernise the consumer regulatory framework to reflect the fact that consumers are interacting with the energy system in new and different ways through the clean energy transformation, including producing and storing energy through solar panels and batteries. Senior Officials will bring forward options for consumer regulatory framework reform to the next meeting of the ECMC.[44]

Recommendation 20

1.59 Labor Senators **do not support** conducting an additional review of the NEO given one was conducted recently by ECMC in the context of the decision to include emission reduction as part of the NEO. Labor Senators also note the

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[43] The Commonwealth of Australia, *Mid-Year Economic And Fiscal Outlook*, p. 223, available at: https://budget.gov.au/content/myefo/index.htm.

[44] ECMC, *Meeting Communique*, 6 December 2024, p. 2, available at: https://www.energy.gov.au/energy-and-climate-change-ministerial-council/meetings-and-communiques.

NEO does not provide weights to its components. Labor Senators are confident consumer outcomes are already understood to be a high priority by stakeholders, market bodies and governments, in accordance with the existing NEO.

Recommendation 21

1.60 Labor Senators **agree** that the Australian Government will need to make decisions about a CER Technical Regulator, and the development of nationally consistent standards and consumer frameworks. Labor Senators note this work is ongoing as part of the CER Roadmap, and ECMC recently stated in their most recent communique:

> Ministers welcomed the progress to date on the National Consumer Energy Resources (CER) Roadmap, given the increasingly important role CER will play in delivering dispatchable capacity. Ministers maintain their focus on delivering for consumers and communities, and actions under the Roadmap will achieve this by lowering bills, improving access to CER and improving overall system operation.[45]

Recommendation 22

1.61 Labor Senators **do not support** a review of network charges as this recommendation is entirely duplicative with the statutory responsibilities of the AER. A Commonwealth review would be unnecessary and would duplicate that ongoing work of the AER.

Senator Varun Ghosh
Australian Labor Party Senator for Western Australia

Senator Karen Grogan
Australian Labor Party Senator for Western Australia

[45] Ibid., p. 1.

Additional Comments - Senator Matthew Canavan

1.1 The Chair's report makes sensible recommendations that would improve the governance and oversight of Australia's energy regulatory frameworks, and for this reason I support them.

1.2 However, Australia's energy system is failing on a scale that befits a much more radical rethink of how our energy system is planned, regulated and run.

1.3 Despite Australia having the largest energy reserves per person in the world, Australian families and businesses are suffering from an unprecedented increase in energy prices. It has not always been this way. Just a generation ago, Australia had some of the cheapest energy prices in the world. We now have some of the highest.

1.4 Energy price rises are feeding into Australia's record inflation rates as the cost of energy affects everything from food, to building materials to transport. Just in the past few years Australia has lost its last remaining urea fertiliser and plastics industries. These materials are crucial for Australia's farming industry, around half of our food is produced using urea, and water tanks and poly pipes are all made from the plastics that used to be made here. Australia's energy crisis is now impacting our food security too.

1.5 The most underwhelming aspect of this inquiry has been the disinterested approach from the government and regulators to get to the bottom of why Australians are paying so much for energy than other countries with similar energy endowments (like the United States). Australia's energy policy decision makers have adopted a set of "net zero" blinkers that seem to blind them from any other distraction than the obsessive pursuit of a net zero emissions agenda, and related renewable energy targets.

1.6 My recommendations aim to remove these blinkers and let sunlight invade the energy policy decision-making space. Australians struggling to pay their power bills deserve to know the true cost of the radical climate and renewable energy policies that have been adopted by their governments. The fact that a proper cost benefit study of the net zero emissions was not conducted before its adoption is one of the greatest policy making failures in Australian history.

Making the Integrated System Plan better

1.7 The greatest demonstration of the close-minded approach to energy policy making is AEMO's Integrated System Plan (ISP). This plan began as a good-faith effort to improve transmission planning decisions which, given the natural monopoly nature of transmission lines, clearly require a degree of coordination from central agencies.

1.8 Unfortunately, the ISP has morphed to yet another propaganda exercise for climate targets. Under repeated questioning in this Committee, AEMO's CEO, Mr Daniel Westerman, admitted that the ISP does not estimate whether renewable energy is the cheapest form of generating electricity. Instead, the ISP estimates the "least cost pathway" of meeting various government targets, including the Federal Government's 82 per cent renewable target by 2030. As AEMO stated to the Committee:

> Senator CANAVAN: So in no way can the ISP be characterised as any cost-benefit analysis of the decision to impose certain carbon budgets, net zero targets, renewable energy targets or any other energy policy settings that are an input to your modelling?
>
> Ms York: No, we're only permitted, within the framework that we have as set out in the rules, to take those policies as set out in the target statement as an input and then to work out what is the lowest cost way to get to net zero by 2050, which every state has included in the target statement, and the other range of policies that are included—what's the lowest cost pathway given those parameters.[1]

1.9 In other words, the use of renewable energy is not the output of the ISP model "choosing" it as the cheapest option. The predominant use of renewable energy is built into the ISP model as an assumption.

1.10 Despite this admission, Mr Westerman has often implied that renewable energy is the cheapest without reference to the caveat that its conclusion is restricted by government-imposed targets. For example, on 28 June 2024, Mr Westerman told Sky News Australia that:

> What this plan lays out is obviously the lowest cost pathway to meet Australia's energy needs, as our coal fired power stations retire, and as our energy needs grow. You point out the lowest cost is renewable energy backed up with what we call firming, so batteries and storage, but ultimately backed up by gas, flexible gas powered generation.[2]

1.11 Mr Westerman presents his lowest cost pathway estimates as simply done to "meet our energy needs" without reference to the fact these energy needs are constrained and set by strict government targets in his modelling. It would serve the Australian public debate about energy much better if our energy regulators could be more accurate in their public statements about their own work.

1.12 These statements appear to be naively believed by Australian Energy Ministers who either clearly do not read the full ISP or wilfully distort its findings. For

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[1] Senator Matthew Canavan and Ms Merryn York, Executive General Manager, System Design, AEMO, *Committee Hansard,* 23 October 2024, p. 5.

[2] Renewables are 'lowest cost' of energy: AEMO CEO, https://www.skynews.com.au/business/energy/renewables-are-lowest-cost-of-energy-aemo-ceo/video/2d7b6938ffe73aed7687d413b3c1d07f, (accessed 19 December 2024)

example, in December 2023, Minister Chris Bowen issued a media release about the Draft Integrated System Plan titled "Energy Market Operator shows firmed renewables the path for a cleaner, cheaper, more reliable grid" in which he said:

> Today's updated draft energy plan from AEMO reiterates what we already know, firmed renewable energy is not just clean, it's the cheapest way to ensure a reliable grid, Minister Bowen said.
>
> After ten years of neglect, the task to build our modern grid that supports household and businesses with reliable energy as aging coal exits and solar surges is as urgent as ever.
>
> While today's draft forecasts 90% of the increasingly unreliable coal fleet is likely to retire by 2035 – the LNP's only semblance of a plan is a technology that by their own admission will not be commercial before then – risking energy security for households and industry across the country.
>
> It's past time for Dutton and O'Brien to be honest with Australians about how they plan to replace the 90% of aging, and increasingly unreliable coal-fired power generation forecast to close over the next decade - given they have called for a pause on all new renewables and transmission.[3]

1.13 Minister Bowen made no reference in his media release to the fact the closure timeline of coal fired power stations is directly impacted by the government climate and renewable energy targets assumed in the model. The ISP makes this clear when it says:

> For any given scenario, the jurisdictional carbon budgets are first imposed onto the SSLT, where the carbon budget is met by influencing the retirement timing of fossil-fuel generation.[4]

1.14 This was also confirmed by AEMO at the Committee's hearings:

> Senator DUNIAM: With respect to coal—I think it was touched on before—you have asset owners and state governments working together. There is the underwriting of coal assets to prolong life. I think that puts the ISP at odds with reality. How do you factor that in? How do you deal with that divergence?
>
> Ms York: It's a good question. The emissions reduction is what largely drives the profile of coal closures.[5]

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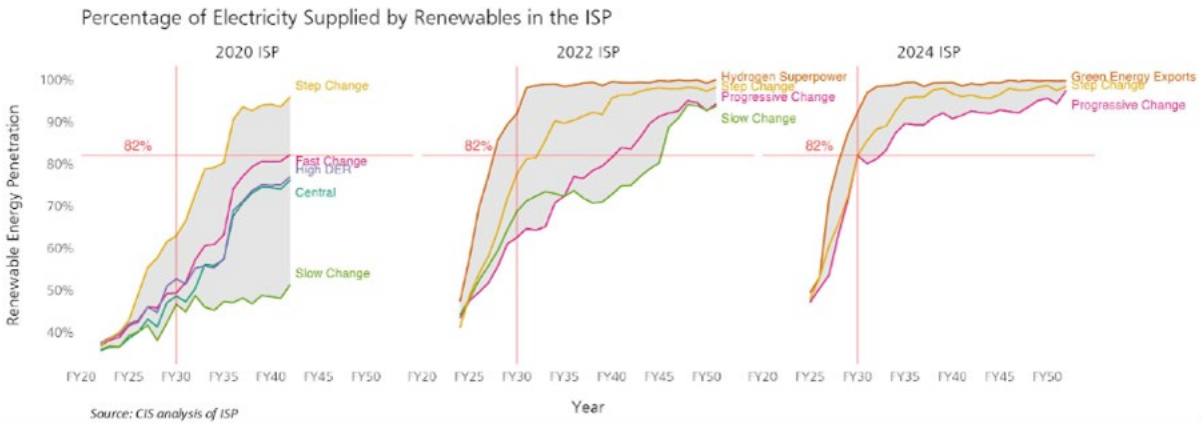
[3] The Hon Chris Bowen MP, Minister for Climate Change and Energy, *Energy Market Operator shows firmed renewables the path for a cleaner, cheaper, more reliable grid*, 15 December 2023, https://minister.dcceew.gov.au/bowen/media-releases/energy-market-operator-shows-firmed-renewables-path-cleaner-cheaper-more-reliable-grid (accessed 19 December 2024)

[4] Australian Energy Market Operator, *ISP Methodology*, June 2023, p. 47, isp-methodology june-2023.pdf, (accessed 18 December 2024).

[5] Senator Duniam and Ms Merryn York, Executive General Manager, System Design, AEMO, *Committee Hansard*, 23 October 2024, p. 25.

1.15 It would be helpful for Australia's public policy debate if Energy Ministers could read important documents like the ISP and properly represent them in public debate.

1.16 Still, it would be even more helpful if the ISP could contemplate a broader range of scenarios so that more information is provided to the Australian public about the relative cost of different government policy interventions. Over recent iterations, the ISP has been more constrained by government targets and especially increasingly ambitious and strict renewable energy targets. For example, the Centre for Independent Studies has shown how in 2020 the ISP contemplated renewable shares of between around 45 and 60 per cent. The latest ISP is constrained to only consider renewable energy shares of over 82 per cent.[6]



1.17 In effect, the ISP now provides much less useful information about relative energy costs because it simply does not evaluate the costs of using different energy types. This has real world consequences when the ISP is then used to justify billions of dollars in new transmission lines that would likely not be justified but for government imposed renewable energy targets.

1.18 Many organisations supported expanding the range of scenarios considered by the ISP. For example, the Australian Energy Council said that:

> We believe modelling an "efficient development of the power system" that satisfies the NEO requires a baseline scenario that is the best estimate from which other scenarios can be compared with. Given the scale, cost and pace of the energy transition, AEMO should include a scenario of what it thinks is likely and make this available to stakeholders and the public at large.[7]

1.19 This was supported by the Centre for Independent Studies:

> When constructing scenarios of plausible futures, this positive effect of policies on the likelihood of outcomes must be considered. However, government policies are not the sole determinant of plausibility. Other factors constraining the construction of new renewable energy projects — such as workforce constraints, social license and grid connections — must

6 Centre for Independent Studies, *Submission 3*, p. 8.

7 Australian Energy Council, *Submission 2*, p. 4.

> also be considered alongside government targets when forming plausible scenarios. The assumption that all government policy will inevitably be successful effectively negates the usefulness of constructing scenarios to span the likely outcomes of an uncertain future.[8]

1.20 Dr Bongers, from Gamma Energy Technology, also raised the issue of the ISP not considering all types of energy solutions:

> My issue with the ISP is the question that they have asked in the first place and chosen to model. Why have they restricted the technologies to wind, solar, batteries and gas backup? What about carbon capture and storage? What about looking at nuclear? Even though it is currently illegal, they could still do it as a scenario. Dr Barr and I have both looked at nuclear and CCS in terms of what it could bring to the table in terms of value.[9]

1.21 AEMO claims that the National Electricity Rules prevent them from considering a wider range of energy scenarios. There is some debate about whether these rules are binding on AEMO.

1.22 Notwithstanding that debate, it would make sense for the National Electricity Rules to be amended to require AEMO to model a range of scenarios that shed light on the relative costs of different electricity mixes. This should include at the very least a "baseline" scenario in which there are no government policies to impose arbitrary carbon budgets or targets for particular fuel types. Modelling such a baseline is essential to understand the true cost of government interventions.

Recommendation 1

1.23 Australian governments should amend the National Electricity Rules to clarify that AEMO should run a range of scenarios in its Integrated Systems Plan including:

- **a baseline scenario with no government carbon emissions or fuel type restrictions (including no ban on nuclear);**
- **a scenario which only models the impact of the Commonwealth Government's carbon emissions targets as outlined in its Nationally Determined Contribution under the Paris Agreement; and**
- **a scenario that includes other government policies to reduce emissions or to favour or penalise certain fuel types.**

1.24 AEMO should report the relative impact of each of these scenarios on wholesale and (where possible) retail electricity prices.

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8 Centre for Independent Studies, *Submission 3*, p. 3.

9 Dr Geoffrey Bongers, Director, Gamma Energy Technology, *Committee Hansard,* 29 October 2024, p. 32.

A proper cost-benefit study of net zero emissions

1.25 The Chair's report identifies the urgent need for an independent sector-wide review. It has been over ten years since the Productivity Commission undertook its review into Electricity Network Regulation. Given the deficiencies in the current energy planning approach, however, a broader review is required.

1.26 In evidence to the committee, Mr Daniel Westerman, Chief Executive Officer of AEMO, explained that the ISP requires AEMO to find, within the parameters of the meeting the government's net zero targets by 2050, 'the lowest cost pathway for meeting reliability and security of the power system at each point through to 2050'.[10]

1.27 In further questioning, I sought clarification of the impact of not-zero modelling on future costs:

> So, in no way can the ISP be characterised as any cost-benefit analysis of the decision to impose certain carbon budgets, net zero targets, renewable energy targets or any other energy policy settings that are an input to your modelling?[11]

1.28 In response, Ms Merryn York, Executive General Manager, AEMO stated:

> No, we're only permitted, within the framework that we have as set out in the rules, to take those policies as set out in the target statement as an input and then to work out what is the lowest cost way to get to net zero by 2050, which every state has included in the target statement, and the other range of policies that are included—what's the lowest cost pathway given those parameters.[12]

1.29 It is shocking that a policy of such significance as a net zero emissions target could be adopted without a simple calculation of its costs and benefits. A net zero emissions target requires fundamental change to almost all aspects of human life: how we grow our food, how we make our goods, how we build our homes and how we move around. The goal is to do all of this in a generation. A pace of change that would be unprecedented in all of human existence.

1.30 Unlike Australia, New Zealand at least did conduct a proper cost benefit analysis of its adoption of a net zero emissions target. The New Zealand Institute of Economic Research found that net zero emissions by 2040 would reduce the size of the New Zealand economy by 10 to 20 per cent.[13] In Australian terms that would amount to a $200 billion to $400 billion annual impact. Employment

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10 Mr Daniel Westerman, Chief Executive Officer, AEMO, *Committee Hansard*, 23 October 2024, p. 4.

11 Senator Matthew Canavan, *Committee Hansard*, 23 October 2024, p. 5.

12 Ms Merryn York, Executive General Manager, System Design, AEMO, *Committee Hansard*, 23 October 2024, p. 5.

13 NZIER, *Economic impact analysis of 2050 emissions targets : A dynamic Computable General Equilibrium analysis*, 19 June 2018, https://www.nzier.org.nz/news/key-results-from-economic-modelling-of-2050-emissions-targets

would fall by 2 to 4 per cent. If that happened in Australia 200,000 to 400,000 people would lose their jobs.

1.31 Depending on the development of different technologies, wages would reduce by 8 to 28 per cent. In Australian terms, that would mean a $7000 to $24,000 annual hit to an average worker.

1.32 Of course, the economic impact on Australia would be bigger given that we have larger coal and gas industries than New Zealand.

1.33 This modelling showed that to reach net zero emissions, New Zealand would require an "implied" or "shadow" carbon price of NZ$272 per tonne, or A$246 at today's exchange rates.

1.34 During this inquiry, AEMO admitted that their modelling concluded that a shadow carbon price of A$262 per tonne was needed to generate a net zero emissions outcome. Given the similar estimates of these figures, net zero emissions is likely to have just as similar, large negative impact on Australian living standards.

1.35 Any policy that would reduce average Australian wages by between $7000 and $24,000 per year deserves close scrutiny.

Recommendation 2

1.36 The Government should add to the proposed Productivity Commission inquiry a cost-benefit study of its net zero emissions by 2050 target. This study should look at the impact of the target on the entire Australian economy including how higher electricity prices and stricter carbon emissions target could impact the viability of individual Australian manufacturing industries.

Removing the nuclear ban

1.37 Australia is one of just a few countries in the world that ban nuclear power. Of the 20 richest nations in the world only three do not have nuclear power: Australia, Saudi Arabia and Italy. Saudi Arabia is building a nuclear power station and Italy gets much of its imported electricity from France, where over 60 per cent of the electricity is produced by nuclear power.[14]

1.38 Australians face soaring energy costs, record levels of hardship, small business insolvencies, and growing uncertainty under a renewables-only energy plan.

1.39 Frontier Economics have recently estimated that modifying the ISP to include nuclear (and extend the life of coal fired power stations) could reduce the cost of supplying electricity by $263 billion - a 44 per cent reduction. Curiously, the Australian Government has approached this modelling with much more

[14] Coalition Senators' Dissenting Report, Senate Environment and Communications Legislation Committee, *Environment and Other Legislation Amendment (Removing Nuclear Energy Prohibitions) Bill 2022*, August 2023.

scepticism than the modelling it receives about its own plans. Whatever the arguments about particular economic modelling approaches, the Frontier Economics works shows that it is mad to maintain a nuclear power ban based on an argument about economic cost alone.[15]

1.40 Furthermore, the current ISP fails to properly consider the enormous increase in electricity demand that may come from the growth in data centres.

1.41 In the 1990s, Australia's nuclear ban did not impose significant costs because we relied on coal and gas fired power. However, our coal fired power fleet is now old, and governments have not supported constructing new ones because of concerns over climate change. While there was never a justification for banning nuclear energy, this ban is now an accident waiting to happen if we try to move our energy system to one almost completely dependent on the weather.[16]

1.42 Given the cost blowouts that are occurring on major projects like Snowy Hydro 2.0 and the Battery of the Nation, Australia should diversify its sources of energy. Nuclear power would reduce the need for large storage or transmission projects.

1.43 As the Australian Energy Council said at the Committee's hearings:

> Senator GHOSH: One of the suggestions that emerged from testimony yesterday was that the removal of legal prohibitions on the nuclear industry in Australia would offer a benefit to the Australian energy system. From the Australian Energy Council's point of view, is there industry interest in developing and investing in nuclear power in Australia?
>
> Mr Feeney: ... If policymakers were to change that approach at some point in the future, I think there would be interest in exploring it. Generally speaking, killing off options and taking options off the table in an environment where there's uncertainty over the next 10 or 20 years isn't advisable. Our perspective is very much a technology neutral perspective.[17]

1.44 In giving evidence to the committee, Dr David Carland, Executive Director, Australian Resources Development Pty Ltd stated:

> My first major issue is that, under the national electricity objective, the ISP is required to make sure that renewable energy targets are met—essentially carbon dioxide emissions. The ISP assumes that this can be met only by firmed renewables. No other option is looked at...In particular, there's no

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15 The Hon Peter Dutton MP, Leader of the Opposition, *Dutton, Littleproud, O'Brien – Media Release – A Cheaper, Cleaner, and More Consistent Energy Plan for Australia*, 13 December 2024, https://www.peterdutton.com.au/dutton-littleproud-obrien-media-release-a-cheaper-cleaner-and-more-consistent-energy-plan-for-australia/ (accessed 19 December 2024).

16 Coalition Senators' Dissenting Report, Senate Environment and Communications Legislation Committee,, *Environment and Other Legislation Amendment (Removing Nuclear Energy Prohibitions) Bill 2022*, August 2023.

17 Senator Gosh and Mr David Feeney, General Manager, Wholesale and Environment, Australian Energy Council, *Committee Hansard*, 30 October 2024, p. 5.

> analysis of the nuclear option, which is another way of getting to low emissions. The reason it is not analysed—it is directly said by AEMO—is that the technology is banned. I think this is a highly disingenuous statement. Because a particular technology is banned doesn't stop us from analysing it. It hasn't stopped another committee analysing it here. It hasn't stopped the CSIRO analysing it here. It hasn't stopped AUKUS in the investigation of nuclear submarines. I think that is a very limp reason not to investigate nuclear.[18]

1.45 Given the scale of Australia's energy crisis it is unwise for us to rule options out. Australia's prohibition on nuclear energy is out of step with developments in the rest of the world and should be removed.

Recommendation 3

1.46 The Australian Government should remove the ban on nuclear power.

Ending the radical 82 per cent renewable energy target

1.47 The 82 per cent renewable target is resulting in a rushed transition and significant impact on regional communities that are bearing the brunt of our push to a net zero economy by 2050.

1.48 The CIS noted that were the 82 per cent renewable energy target not been a binding constraint that the Humelink project would not be advanced today.

1.49 Frontier Economics compiled a database of all the actionable and future transmission projects in the current ISP. These transmission projects amount to a total cost of between $42 and $66 billion.

1.50 It is unclear how many of these projects would not be required or could be deferred if the 82 per cent renewable energy target was ended. However, given the evidence provided in regard to Humelink it is probable that billions of dollars on transmission projects could be spent to meet the renewable energy target. These extra costs would be passed on to consumers in higher electricity bills.

1.51 Evidence to this Committee supported the view that there is too much emphasis on transmission investments in the current ISP.

1.52 For example, Professor Bruce Mountain described AEMO as employing 'a biased counter-factual trick', stating:

> AEMO has done this for example by assuming that all Victorian brown coal generators would have closed by 2028, so as to generate the "benefit" of keeping them open if their transmission project was developed. But of course, all Victorian coal generators will not be closed by 2028![19]

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[18] Dr David Carland, Executive Director, Australian Resources Development Pty Ltd, *Committee Hansard*, 30 October 2024, p. 20.

[19] Professor Bruce Mountain, *Submission 8*, p. 8.

1.53 Professor Mountain was also critical of what he saw as a bias towards transmission planning under the ISP:

> In addition to the inevitable subjectivity of optimisation modelling, another layer of subjectivity (and opportunity for manipulation) arises in the process of establishing the costs and benefits of transmission augmentations. Through our reviews of AEMO's ISPs and of transmission network services providers' (TNSPs) regulatory investment tests we documented seven "tricks" that AEMO and network services providers can and do play to get their cost-benefit assessments to deliver the results they want.[20]

1.54 As a consequence, these projects are being rushed, with communities being impacted by them feeling ignored by the planning processes that are undertaken with the community groups before the committee raising significant concerns about how they were being treated by AEMO.

> Lots has been reported and lodged as complaints to AEMO. It has then gone to Andrew Dyer because it hasn't been actioned. It has been disappointing and completely shocking. Everyone has had an experience run by our own government that they couldn't believe would be part of their life.[21] (…)
>
> Ms O'Sullivan: They asked that they deal with them by email and not be on their property, but then they would come back.
>
> Senator CANAVAN: They would come anyway even though they were asked not to?
>
> Ms O'Sullivan: Yes. People now have cameras up so they can see.
>
> Ms McIntyre: People are frightened.
>
> Ms O'Sullivan: They are frightened, yes.[22]

1.55 The rushed rollout to meet an arbitrary 2030 is resulting in renewable companies not building the social licence in the communities where the infrastructure is being built. Without buy in from the local communities we are further isolating and disenfranchising people from engagement in government. Communities do not deserve to see their natural environment and amenity destroyed to meet an arbitrary target made for political reasons.

Recommendation 4

1.56 The Australian Government should drop its target of 82 per cent renewables by 2030.

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20 Professor Bruce Mountain, *Submission 8*, p. 8.

21 Ms Cindy O'Sullivan, Wallaloo and Gre District Alliance Incorporated, *Committee Hansard*, 30 October 2024, p. 16.

22 Senator Canavan, Ms Cindy O'Sullivan, Wallaloo and Gre District Alliance Incorporated, Ms Marcia McIntyre, Executive, Wallaloo and Gre District Alliance Incorporated, *Committee Hansard*, 30 October 2024, p. 17.

The need for a technologically neutral capacity scheme

1.57 Over this summer, the shortage of power has hit home in average Australian households. Families in Sydney have been told not to use dishwashers, and almost every week brings new fears of widespread power outages when the weather does not line up with the needs of our now weather-dependent system.

1.58 The risks of these shortages have been evident for some time. For example, in 2022, the then Energy Security Board warned that:

> While 5 GW of coal capacity has already announced it will close by 2030, as much as 14 GW may become uneconomic by that time. 14 GW represents around one-third of the NEM's dispatchable capacity, a significant amount to exit over an eight year period. Replacement would require the equivalent of another Snowy 2.0 to be connected every year from now until 2030.[23]

1.59 Since that time, the Federal Government has announced the establishment of a Capacity Investment Scheme which is aimed to provide incentives for reliable power sources to be built. However, this scheme goes against the recommendations of the Energy Security Board which were to create a technologically neutral scheme:

> ...a mechanism should be technologically neutral while recognising the rapid pace of change, noting there are design principles which relate to these criteria that will be addressed during the process.[24]

1.60 The Government's Capacity Investment Scheme instead restricts support to "renewable" sources of supply and explicitly rules out support for coal and gas power to keep the lights on.

1.61 Many submissions and witnesses to this inquiry raised the importance of returning to a technologically neutral approach. For example, Mr David Feeney, General Manager of the Australian Energy Council, said that:

> Our perspective is very much a technology neutral perspective … It is also worth making the point that you want a mixture of different generation types. They have different economic and technical characteristics. This idea that you should just have one or two generation types I think introduces more risk into the system than is required.[25]

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[23] Energy Security Board, *Capacity mechanism High-level Design Paper*, p. 9, June 2022, https://www.energy.gov.au/sites/default/files/2022-06/Capacity%20mechanism%20high-level%20design%20consultation%20paper.pdf (accessed 19 December 2024)

[24] Energy Security Board, Capacity mechanism High-level Design Paper, p. 4, June 2022, https://www.energy.gov.au/sites/default/files/2022-06/Capacity%20mechanism%20high-level%20design%20consultation%20paper.pdf (accessed 19 December 2024)

[25] Mr David Feeney, General Manager, Wholesale and Environment, Australian Energy Council, *Committee Hansard*, 30 October 2024, p. 5.

1.62 Ms Kylie Walker, Chief Executive Officer, Australian Academy of Technological Sciences and Engineering told the committee that:

> …it is important to take a whole-of-system approach…we need to move from an incremental to a transformational approach to planning and executing our energy present and our energy future. We need to move from what's been to date a very piecemeal approach to energy planning and execution because of the various legislation, regulation, market forces and different jurisdictions that have been involved. The opportunity here for Australia is to take a strategic and holistic approach and to actually set a standard... We are technology neutral. Our stance is that, however we get to a low-carbon, net zero, reliable energy grid, we're here to discuss it…to understand what the options are and what the implications might be.[26]

1.63 The ESB rightly pointed out that "one primary consideration is that variable renewable energy (VRE) is variable in its output, based on the weather. Because electricity supply and demand must remain precisely in balance in real time, VRE must be complemented and backed up by 'dispatchable' capacity providers that can output electricity on demand when VRE generation is low.[27]

1.64 The current ISP ignores this very point. The ESB pointed to the Draft 2022 ISP Step Change that "forecasts the NEM will require approximately 60 GW of dispatchable capacity in 2050, and significant further investment in transmission, to maintain reliability in a VRE-based system. There is much that could go wrong if the resources required to keep our system reliable and affordable are not built in a timely manner to replace existing assets. Existing assets, each of which can represent a significant proportion of generation in their region, might close before replacement capacity is in place. A single coal generation facility can account for as much as a third of a state's power needs. After an abrupt closure, price impacts can be similarly substantial – wholesale prices in Victoria jumped 85 per cent following the sudden closure of the Hazelwood power station before any replacement capacity could be built. The economic viability of many coal generators is under increasing pressure due to ongoing investment in VRE and rising fuel costs. As capacity factors and margins fall, there is an increased risk of the disorderly exit of these facilities, without the ability to plan for and construct replacement capacity.[28]

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[26] Ms Kylie Walker, Chief Executive Officer, Australian Academy of Technological Sciences and Engineering, *Committee Hansard*, 31 October 2024, p. 60.

[27] Energy Security Board, Capacity mechanism High-level Design Paper, p. 8, June 2022, https://www.energy.gov.au/sites/default/files/2022-06/Capacity%20mechanism%20high-level%20design%20consultation%20paper.pdf (accessed 19 December 2024)

[28] Energy Security Board, Capacity mechanism High-level Design Paper, p. 8, June 2022, https://www.energy.gov.au/sites/default/files/2022-06/Capacity%20mechanism%20high-level%20design%20consultation%20paper.pdf (accessed 19 December 2024)

1.65 The Australian Government should amend the terms of its Capacity Investment Scheme to be technologically neutral, so it is aligned with the recommendations of previous energy inquiries.

Recommendation 5

1.66 The Australian Government should expand its Capacity Investment Scheme to include all types of power, including coal, gas and nuclear.

Senator the Hon Matthew Canavan
Nationals Senator for Queensland

Additional Comments - Senator David Pocock

Introduction

1.1 The Terms of Reference for this Inquiry go to the governance of the National Energy Market (NEM) – the institutional and legal frameworks that govern its operations. That task is well beyond the capacity of a short Senate inquiry of this nature. NEM governance is founded in a complex of Commonwealth-State arrangements involving a Commonwealth-State Energy Market Agreement, a Commonwealth-State National Energy Transformation Partnership, three national laws, a daunting and unstable body of thousands of pages of rules, the Energy and Climate Change Ministers Council (ECMC), three regulatory bodies, and a consumer advisory panel. Four inquiries over the last two decades, each expert-led and enabled with appropriate reporting timeframes and resources, have advised governments on reform of the NEM – with quite varying levels of acceptance of their recommendations.[1] The field of NEM governance is fraught with political and inter-jurisdictional tensions, and is mired in a world of technical complexity very much exacerbated by an intense pace of technical evolution.

1.2 In these circumstances, it would be irresponsible of this Committee – acutely limited in its time and its resources - to venture recommendations on the governance of the NEM, and I shall not do so in these additional comments.

1.3 I shall focus on a number of key issues emerging from submissions to the Inquiry and suggest ways in which these could be progressed, in some cases through the existing patchwork of NEM-related inquiries and work programs currently on foot. These themes are:

- the need for a new market paradigm articulated into NEM strategy;
- the need to harness demand-side energy resources as part of the new paradigm;
- the need to expedite utility-scale investment, addressing social licence and approvals;
- aligning institutions to the new paradigm;
- reforming national energy law to make it an efficient enabler of the energy transition; and
- addressing energy poverty as an emerging consequence of the energy transition.

1.4 I commend individuals and organisations on the quality of their submissions, which in so many cases reflect deep consideration of what NEM reform should

[1] Cited in: Erne Energy, *Submission 32*, p 1. The reviews having been Parer (2002), Vertigan (2015), Finkel (2017), and Edwards (2020).

look like. I cannot do justice in these short additional comments to the quality of those submissions. I do, however, propose more appropriate channels of inquiry which could more appropriately and deeply consider these submissions.

1.5 I do not, in these additional comments, speak to the issues raised by the gas industry. I acknowledge that natural gas will have a small continued role in firming the NEM for some time, and I note the potential for hydrogen and biomethane drawing on a repurposed gas network to feed the hard-to-abate industrial sectors. I am confident the gas sector can address its concerns in these matters independently of this inquiry.

1.6 I do not agree with the significant number of submissions that do not accept the necessity of decarbonizing the NEM, or which argue for technology agnosticism in designing the NEM. I place faith in the climate science community – a community whose discipline is founded on the same rules of evidence that have yielded all that we value in, for example, medicine, transport, communications, engineering and so much else. Climate science shows that we will exceed 1.5°C, if we have not already done so in 2024, with no sign that the burning of fossil fuels has yet peaked.[2] The path to breaching the Paris Agreement goal of limiting global warming to 2.0°C is shortening every year, beyond which lies dire consequences for all of us, for our children and for future generations.

1.7 Following a decade of climate denial, Australia now faces the task of reining in its emissions in a very short time to achieve its 2030 target of a 43 per cent reduction on its 2005 emissions. The Climate Change Authority has identified the enormity of the task:

> After emissions fell by 3 Mt CO2-e in 2023-24, they will need to fall by an average of 15 Mt CO2-e each year for the next 6 years to reach Australia's 2030 target.[3]

1.8 Central to achieving that target is transitioning the grid to 82 per cent renewables by 2030.

A new paradigm

1.9 The departure point for many submissions to this inquiry was a call for a paradigm shift in design of the NEM. Submissions consistently argued that governance could not be addressed without first articulating a paradigm shift

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[2] Global Carbon Budget, 'Fossil fuel CO2 emissions increase again in 2024', 13 November 2024, (accessed 12 December 2024)

[3] Climate Change Authority, 'Media Release: Emissions need to fall further, faster: Climate Change Authority – 2024 Annual Progress report released today', 28 November 2024, (accessed 12 December 2024)

into strategic guidance. The Grattan Institute articulated the views of many submissions:

> …a system designed in the 1990s is now creaking under strain. The key assumptions that underpinned that design – generators that consume fuel, slow and predictable demand patterns, and passive consumers – have been invalidated by technology change.[4]

1.10 Engineers Australia and AATSE underscored the risks inherent in perpetuating the current incrementalism:

> We are currently focused on incremental rather than transformational strategic change…This situation risks ad hoc interventions to address immediate problems rather than long-term planning.[5]

1.11 In similar vein, the Clean Energy Investor Group stated:

> CEIG advocates for a deep, coordinated rethink of the NEM and associated governance frameworks to provide a clear pathway for investment in clean energy technologies, transmission, and storage.[6]

1.12 Erne Energy captured the view of other submitters in pointing to the deadweight of incumbent advantage in resisting reforms to the NEM, observing that:

> …the market bodies, the market operator, market participants (retailers and gentailers) and electricity network service providers (NSPs, both distribution and transmission) are very comfortable with the governance regime that has been in place since the start of the NEM. These incumbents are in direct competition with Australians who are generating their own electricity through their rooftop solar PV.[7]

1.13 A new paradigm is only as good as its stability in guiding long-term investment. The Australian Financial Markets Association argued:

> ….the greatest regulatory challenge remains a lack of clear policy intent over the medium and longer-term resulting in a lack of clear market signals to participants.[8]

1.14 The new paradigm should also be clear in its endpoint: to sustain the energy needs of the Australian economy as we know it, or to enable expansion to a renewable energy superpower. The choice bears heavily on intended capacity. The Superpower Institute captured the issue as follows:

> It is imperative that the legal frameworks and institutions responsible for the energy transition keep pace with the scale of change required for

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4 The Grattan Institute, *Submission 48*, p. 2.

5 Engineers Australia and AATSE, *Submission 18*, pp. 5-6.

6 Clean Energy Investor Group, *Submission 17*, pp. 1-2.

7 Erne Energy, *Submission 32*, p. 1.

8 Australian Financial Markets Association, *Submission 66*, p. 2.

> Australia's energy needs, including the needs of the superpower opportunity.[9]

1.15 The market design of the NEM is a work in progress and a partial one at that. Two projects on foot – the recently released Consumer Energy Resources (CER) Roadmap[10] work program and the forthcoming review of NEM wholesale market settings (*Post-2030 Review*)[11] – address core issues for the future NEM, yet together they do not make for an integral, coherent blueprint. Where utility-scale capacity is driven by targets which in turn drive fiscal and regulatory interventions to achieve those targets, CER and the broader demand side, are not.

1.16 The CER Roadmap is directed at enabling the market rather than driving or unleashing the market. This inevitably leads to imbalance in how policy shapes the emerging market, biasing signals to investors, consumers and regulators alike. At its worst, it leads to over-investment in utility-scale projects and failure to mobilise the demand side.

1.17 In ordinary circumstances, market design of the NEM could well have been referred to the Productivity Commission for advice, as suggested by several submissions.[12] The Commission, in a broad ranging inquiry, could also have taken in the broader suite of issues address in submissions. That opportunity has passed with commissioning of the *Post-2030 Review* which would have occupied a central part of a PC inquiry.

1.18 The appropriate way forward now is to have the *Post-2030 Review* broadened to address the market design of the NEM as a whole. This would likely require an extension of the review's time and resources. Conscious of the Government's long lead time for advice on post-2030 arrangements to be considered through the ECMC, it may be necessary to limit an extension to, say, 18 months.

Recommendation 1

1.19 Extend the scope of the Post-2030 Review to address the design of the National Electricity Market as a whole. Without limiting its scope, it should:

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9 The Superpower Institute, *Submission 24*, p. 4.

10 DCCEEW, Energy and Climate Change Ministerial Council, National Consumer Energy Resources Roadmap – Powering Decarbonised Homes and Communities, 19 July 2024 (accessed 13 December 2024).

11 The Hon Chris Bowen MP, Minister for Climate Change and Energy, Media Release, Making the National Electricity Market fit for purpose, 26 November 2024 (accessed 11 December 24)

12 Superpower Institute, *Submission 24*, p. 4; Justice and Equity Centre, *Submission 28*, p. 2; Grattan Institute, *Committee Hansard*, 31 October 2024; Nexa Advisory stated this inquiry was not the appropriate path to resolving the issues raised in its submission, *Submission 26*, p. 1.

- **design for a market that will deliver a rapid transition to renewable energy and allows for rapid technology shifts, including to technologies not yet contemplated;**
- **design for both utility-scale supply and the active participation of demand-side actors;**
- **articulate this design into long-term, strategic guidance for investors and consumers alike;**
- **advise the implications for strategic level regulatory reform, including inter-governmental agreements, the three national energy laws and the three market bodies;**
- **advise on post-2030 arrangements as per the existing Terms of Reference; and**
- **advise on higher-level adjustments required of policy for other components of the market, including the demand side.**

1.20 The review shall report no later than June 2026, with the option for the Minister to extend its term should staged reporting be necessary.

Harnessing Demand

1.21 The emerging potential of CER is the most important factor demanding a paradigm shift for the NEM and its significance is difficult to overstate. The Australian Energy Market Operator (AEMO), in designing its Optimal Development Path to net-zero by 2050, estimates CER will account for almost half the NEM's capacity, around a fifth of energy consumption, and two thirds of energy storage by 2050.[13] The Energy Efficiency Council cites ARENA in estimating that demand flexibility could save consumers up to $18 billion in net present value.[14]

1.22 Of comparable importance is the potential for mobilising Commercial and Industrial Energy Resources (C&I), particularly rooftop solar and storage. This offers a relatively cheap and rapid pathway to installing up to 28 GW of solar generation on C&I rooftops in the short to medium term and is a specific focus of the Climate Change Authority's *2024 Annual Progress Report*.[15]

1.23 The importance of CER and C&I within the NEM extends beyond their potential for generation and storage. The localisaton of generation and storage with consumption can alleviate demand for new utility-scale generation, storage and transmission – reducing not just investment costs but the strain on social licence amongst affected regional communities.

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[13] Australian Energy Market Operator, *2024 Integrated System Plan*, 26 June 2024, pp. 50, 67.

[14] Energy Efficiency Council, *Submission 47*, p 1.

[15] Climate Change Authority, *2024 Annual Progress Report*, 15 November 2024, p 64, quoting Roberts et al, 2019.

1.24 There is growing risk that CER and C&I will not be mobilised to realise their potential in supplying NEM generation and storage, and it is reported that AEMO is adjusting down its projected uptake of CER in its assumptions for the 2026 Integrated System Plan.[16] While the Commonwealth and States are implementing policies to incentivise the uptake of electric vehicles, it is less clear that there has been adequate response in pricing and regulation to incentivise the uptake of CER more generally and the uptake of C&I.

1.25 The CER Roadmap released by the Energy and Climate Change Ministers' Council (ECMC) earlier this year is intended to address the CER component of this policy gap. The CER Roadmap is comprehensive and scheduled in a detailed workplan. The Clean Energy Council considers the development of a new CER Technical regulator under the Roadmap to be critically important. The Clean Energy Council also notes the significance of establishing a Distribution System Operator under the Roadmap.[17]

1.26 The Roadmap does not appear, however, to drive towards a capacity target, in contrast to the outcomes-driven approach of the Capacity Investment Scheme (CIS). In a similar vein, the Roadmap, unlike the CIS, does not appear to envision incentives – pricing signals, fiscal measures, taxation measures – directed at compensating consumers for their capital outlays and easing their path to participation in orchestration. It allows for market offers to this effect, but stops short of direct incentives.

1.27 There does not appear to be an equivalent of the CER Roadmap for the C&I sector. The Climate Change Authority notes this sector falls beneath the generation threshold for assistance under the CIS and that no other incentives are on offer.[18] The Authority recommends policy development to mobilise the C&I sector.

1.28 Specific concerns regarding CER raised in submissions included:

- the role and performance of distribution networks in facilitating uptake of CER, and including consumers in decision making to secure social licence for orchestration of CER;[19]
- establishing national technical standards, enhancing consumer protection frameworks, removing distribution network barriers, and providing investment support for low-income households.[20]

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16 Sophie Vorrath, Renew Economy, 'AEMO dials back forecasts for home battery uptake, VPP participation, as push for rebate grows', 11 December 2024, (accessed 13 December 2024).

17 Clean Energy Council, *Submission 69*, pp. 2-3.

18 Climate Change Authority (2024), p. 6.

19 Nexa Advisory, *Submission 26*, pp. 12-13.

20 ACTU, *Submission 51*, p 2.

1.29 A pervasive concern was to give consumers a voice in policy and rulemaking for the NEM. This matter is considered under institutional reform below.

1.30 The submissions of ACOSS and the Energy Efficiency Council referenced a paper entitled *Demanding Better* sponsored by these two organisations together with the AiGroup and The Property Council. *Demanding Better* mounts a compelling argument for consolidating demand-side policy in the dimensions of both energy resources and energy efficiency. The paper argues for a unitary approach driven by a stand-alone agency.[21]

1.31 My Recommendation 1 above proposes dialing demand-side participation into the design of a reformed NEM and issuing strategic guidance for the demand-side in consequence. There are tasks, however, that should proceed in parallel with the high-level market design proposed in Recommendation 1. There is urgent need to commission development of a C&I Roadmap equivalent to the CER Roadmap – indeed, particular urgency attaches to this because mobilizing C&I is seen by the Climate Change Authority as a cost-efficient means to rapidly develop a significant part of the capacity required to meet the 2030 target of 82 per cent renewables. Development of a C&I roadmap should be expedited for consideration by ECMC no later than December 2025.

1.32 The CER Roadmap schedules implementation over the six years to 2030. It would be timely to undertake an interim review of the Roadmap to report to ECMC no later than June 2026, for consideration jointly with the outcomes of the expanded *Post-2030 Review*. The interim review should assess progress in implementing the Roadmap as approved by ECMC, but it should also assess its efficacy in mobilizing CER for its full potential within the NEM and advise on policies – regulatory, taxation and fiscal – required for this end.

Recommendation 2

1.33 Commission development of a C&I Roadmap for consideration by ECMC no later than December 2025. The Roadmap should include proposed measures, as appropriate, in the regulatory, fiscal and taxation domains, to mobilise the potential of C&I to help meet the capacity gaps in achieving the 2030 target of 82 per cent renewables.

Recommendation 3

1.34 Commission an interim review of progress in implementing the CER Roadmap for consideration by ECMC no later than June 2026, in conjunction with consideration of the expanded *Post-2030 Review*. The interim review

[21] Energy Efficiency Council, *Submission 47*, Attachment, and ACOSS, *Submission 52*, Attachment, referencing ACOSS, AiGroup, EEC, Property Council of Australia, '*Demanding better: A reform agenda for harnessing the power and flexibility of demand side energy resources*', no date, (accessed 13 December 2024).

should assess the efficacy of the CER Roadmap in mobilising CER and identify key areas that should be prioritised in order for CER to reach its full potential with the NEM and advise on policy – regulatory, fiscal and taxation – required for achieving this end.

1.35 In the context of inhibiting the participation of CER in the NEM, Distributed Network Service Providers (DNSPs) attracted comment from a range of submissions.

1.36 The Smart Energy Council stated:

> Some distributed network service providers (DNSPs) are using their monopoly powers with a lack of transparency, leading to adverse outcomes for the renewable industry and energy consumers, particularly in the consumer energy space. As a result, we are calling for an independent review of the role they play in the distribution network…[22]

1.37 The Clean Energy Council noted the importance of the CER Roadmap committing to work on establishing a Distribution System Operator. The Council remarked that:

> The DSO work may result in changing responsibilities of the market bodies within the scope of this review…The Select Committee should consider expanding the scope to include expanding functions of these other bodies – particularly in respect of DNSPs who may ultimately absorb functions more similar to the existing market bodies, as the DSO work progresses.[23]

1.38 Rewiring Australia recommended that:

> The role and economic regulation of DNSPs should be a particular area of reform and improvement.[24]

1.39 Nexa Advisory went further to recommend:

> ...an independent review of the role and performance of electricity distribution networks, considering: their role in facilitating the transition; their ability to adapt their business models to facilitate the integration of CER; and how existing governance arrangements and regulatory oversight ensure value for energy consumers.[25]

Recommendation 4

1.40 Commission an independent review, to be considered by ECMC no later than December 2025, of the role and performance of DNSPs, considering their role in facilitating the energy transition, their ability to adapt their business

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22 Smart Energy Council, *Submission 36*, p. 2.

23 Clean Energy Council, *Submission 69*, p. 3.

24 Rewiring Australia, *Submission 78*, p. 2.

25 Nexa Advisory, *Submission 26*, p. 13.

models to facilitate the integration of CER, and how existing governance arrangements and regulatory oversight ensure value for energy consumers.

Expediting utility scale investment

1.41 Alongside CER and C&I, utility scale investment will remain a central plank in decarbonizing the NEM. AEMO estimates an annualised capital cost of $122 billion to 2050 for its Optimal Development Path.[26] The key stimulant to this investment is the Commonwealth's expanded CIS targeting an additional 32 GW of new capacity nationally by 2030.[27]

1.42 The *Post-2030 Review* announced by Minister Bowen on 26 November 2024 will:

> …recommend future market settings to promote investment in firmed, renewable generation and storage capacity in the NEM following conclusion of CIS tenders in 2027' and will focus on 'staged implementation of reforms to the NEM wholesale market…[28]

1.43 The expanded CIS has been significantly over-subscribed in its initial tender, reflecting a very great deal of market interest in decarbonising the NEM. Yet the pace of investment has been significantly held back by the pace of planning and environmental approvals. This in turn reflects, in large measure, resistance on the part of regional communities to granting social licence. It may also reflect a lack of priority on the part of Commonwealth and State environmental and development approvals. The brake on investment poses serious risk to Australia meeting its 2030 target of 82 per cent renewables – a major concern flagged by the Climate Change Authority in its 2024 Progress Report where it recommends:

> Through the National Cabinet, task relevant ministers to work together to overcome barriers to the energy transition.[29]

1.44 In like vein, The Grattan Institute recommends that:

> State Governments should improve the planning and permitting processes for transmission and generation projects.[30]

1.45 The Smart Energy Council noted that the delayed reforms to the Commonwealth's own *Environmental Protection and Biodiversity Conservation Act 1999* is contributing to the deadweight on environmental approvals for renewables projects.[31]

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[26] AEMO, '*2024 Integrated System Plan Overview*', 26 June 2024, p. 1, (accessed 13 December 2024).

[27] DCCEEW, '*Capacity Investment Scheme*', (accessed 13 December 2024).

[28] DCCEEW, '*Terms of Reference: Review of Market Settings in the National Electricity Market to Follow the Capacity Investment Scheme*', (accessed 11 December 2024).

[29] Climate Change Authority (2024), Recommendation 6, p. 15.

[30] Grattan Institute, *Submission 48*, p. 3.

[31] Smart Energy Council, *Submission 36*, p. 1.

1.46 The brake on investment may jeopardise Australia's ability to maintain major investments in high value-adding, vertically integrated, energy-intensive industries – a major concern of the Australian Aluminium Council:

> The fundamental pillar of global competitiveness is low-cost renewable energy, firming and transmission. Despite recent announcements, such as the expansion of the Capacity Investment Scheme (CIS), the scale of the investment at this stage does not match the scale of investment of Australia's competitors.[32]

1.47 The absence of social licence amongst regional communities is reflected in a number of submissions to this inquiry. This is, in some submissions, coupled with a rejection of climate science and/or a rejection of AEMO's modelling of the Optimal Development Path and/or a rejection of the cost/benefit analyses justifying specific projects. The generic issue of social licence, however, independent of these other agendas, is captured by the Energy Grid Alliance:

> Key criticisms of AEMO reveal systemic failures in community engagement and transparency. Its approach to social licence is superficial, reducing community concerns to mere checkboxes in project planning processes. The operator's lack of accountability breeds mistrust, leading to public opposition that jeopardises Australia's energy transition.[33]

1.48 Rainforest Reserves Australia add the concern for environmental balance in pressing the pace of utility-scale renewables investment:

> The energy transition in Australia is essential for achieving carbon neutrality and mitigating climate change. However, the current regulatory frameworks governing renewable energy projects are insufficient to ensure that these developments are environmentally, socially, and economically sustainable. Addressing the gaps in governance, carbon accounting, and environmental impact assessments is critical to creating a regulatory environment that fosters responsible and sustainable renewable energy development.[34]

1.49 Rainforest Reserves Australia recommends amending the National Electricity Law (NEL) and National Gas Law (NGL) to ensure that:

> …biodiversity, habitat loss, and carbon emissions are integral factors in decision-making processes.[35]

1.50 The Commonwealth commissioned the Australian Energy Infrastructure Commissioner (AEIC) to conduct an independent Community Engagement Review to address the matter of social licence. The review was released in February 2024 with all recommendations accepted in full or in principle by the

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32 Australian Aluminium Council, *Submission 56*, p. 4.

33 Energy Grid Alliance, *Submission 54*, p. 1.

34 Rainforest Reserves Australia, *Submission 22*, p. 5.

35 Rainforest Reserves Australia, *Submission 22*, p. 2.

Australian Government. The review recommended actions directed at better informing communities in their engagement with developers. The review stopped short of recommending regulatory interventions in the relationships between landholders and communities and developers. The Government has funded additional resources to boost the AEIC's capability, development of a new national developer rating scheme, and research on a regulatory package to support community benefits.[36]

1.51 Recent polling by Farmers for Climate Action revealed that 70 per cent of rural Australians living in renewable energy zones (N=1,001) support the energy shift, but many do not realise they are part of the quiet majority. Key findings from farmer focus groups from every state across Australia were that:

- clean energy rent is seen as a good way to diversify farm income;
- farmers hope renewables can deliver more reliable energy to them and their communities;
- the majority of farmers support "renewables done right" on farmland; and
- farmers do not trust developers and called for strong regulation from government on decommissioning.[37]

1.52 The message is clear: most farmers are open to renewables and transmission projects, but Government needs to address their deep distrust of developers through regulatory intervention and, most particularly responsibility for decommissioning.

Recommendation 5

1.53 Submit for consideration by ECMC no later than June 2025 an action plan responding to Recommendation 6 ('Through the National Cabinet, task relevant ministers to work together to overcome barriers to the energy transition') of the Climate Change Authority's *2024 Annual Progress Report*. The action plan to address, amongst other things, expediting development and environmental approvals for utility-scale renewables projects (generation, storage and transmission) under strict timescales while balancing the interests of:

- **biodiversity conservation and the risks to biodiversity of unabated climate change; and**
- **bona fide community concerns with the risks of unabated climate change to regional economies and social wellbeing.**

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[36] DCCEEW, 'Community Engagement Review', (accessed 13 December 2024).

[37] Farmers for climate action, Media Release, '*The quiet majority: Australians in renewable energy zones support the energy shift*,' 26 November 2024, (accessed 13 December 2024).

Recommendation 6

1.54 Commission for consideration by ECMC no later than June 2025 a rapid review of implementation of the recommendations of the AEIC Review of Community Engagement. The review should identify any gaps in policies that would assist in securing community support for renewables projects, and particularly:

- **whether government needs to regulate the process of developer consultation and contracting with landholders and communities; and**
- **whether government needs to mandate decommissioning provisions that back legal obligations upon developers with financial provisioning (insurance, trusts, funds in escrow) to ensure those obligations can be met upon cessation of projects.**

Aligning institutions to the new paradigm

Clear policy mandate for the AEMC

1.55 A number of submissions remarked on the waning role of the Australian Energy Market Commission (AEMC) as the policy lead amongst the three market bodies. Senex Energy, referencing the east coast gas market governance model, put it thus:

> …the Australian Energy Market Commission's (AEMC) role in promoting and reviewing regulatory change has reduced due to the influence of other market bodies. This is despite it having the relevant skills and expertise to independently assess market performance against economic and other policy objectives and recommend appropriate action.[38]

1.56 Senex recommended that Government:

> Develop a plan to consolidate all market design and oversight functions within a single organisation and Senex recommends this be the AEMC given its role under the NGL.[39]

1.57 The Smart Energy Council and Nexa Advisory supported:

> …the establishment of an independent review of the Boards or commissions of all energy agencies, including the [Australian Energy Regulator] AER, AEMC, AEMO and Energy Consumers Australia - "to ensure alignment with the strategy, clarity of roles, that they have the right mix of skills and knowledge and are appropriately independent and fairly represent the renewable energy industry. (Nexa Advisory Submission)[40]

1.58 The Clean Energy Council pressed the case still further:

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[38] Senex Energy, *Submission 34*, p. 3.

[39] Senex Energy, *Submission 34*, p. 3.

[40] Smart Energy Council, *Submission 36*, p.3, endorsing the position of Nexa Advisory, *Submission 26*, p. 3.

> Acknowledging the historic or potential role of organisations like the Productivity Commission or ACCC to provide impartial advice on market development, ongoing responsibility for systemic market development should therefore sit solely with the AEMC.
>
> 'Furthermore, where the AER or AEMO make changes to their processes or systems that have material impacts on the efficient function of the energy market, this should be done in accordance with the overall reform direction established by the AEMC.[41]

Conflicting roles of AEMO

1.59 Submissions reflected widely divergent views on AEMO. Some contended that AEMO's cost estimates and cost/benefit analyses are ill-founded and inaccurate.[42] Other submissions commended AEMO for the quality of its analysis in the Integrated System Plan.

1.60 A common theme, however, is that AEMO wears too many hats as system operator, system planner, and service provider.

1.61 The Smart Energy Council suggests:

> AEMO should remain an independent institution as the market operator of the energy grid. Their independence is crucial to a competitive power system. However, AEMO must have transparency and accountability to primarily, the Federal Energy Minister, as well as all State Energy Ministers through the forum of the ECCMC. AEMO should also have a formal process as part of their governance arrangements whereby they must appear before Senate Estimates as well as for any applicable Senate inquiry.[43]

1.62 Erne Energy commented:

> The NEM should have a dedicated independent transmission system and market operator, who also undertakes NEM-wide transmission planning (but not distribution planning)…Any other functions that sit outside the remit of system and market operation, such as auctioneer for the Capacity Investment Scheme, Customer Trustee (NSW), Planner (Victoria), transmission developer (Victoria) should be overseen by a different entity to provide clear separation between commercial operations and NEM-wide functions.[44]

Separating AER from ACCC

1.63 The Australian Energy Regulator (AER) is presently constituted as a Division of the Australian Competition and Consumer Commission (ACCC). Professor Penelope Crossley observed that:

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41 Clean Energy Council, *Submission 69*, p. 3.

42 See, for example, Professor Bruce Mountain, *Submission 8*, p. 6.

43 Smart Energy Council, *Submission 36*, p. 2.

44 Erne Energy, *Submission 32*, pp. 4-5.

> There is consensus among the States and Territories that the goals of transparency and accountability are best served by the separation of the AER from the ACCC.[45]

1.64 The Australian Financial Markets Association points to dysfunctional outcomes resulting from the overlap between the AER and the ACCC:

> We particularly want to highlight that there is significant overlap between the AER's new Wholesale Market Monitoring function and the ACCC's continuing gas inquiry. These overlaps are costly and burdensome for industry while diverting unnecessary regulatory resources and creating inefficiencies.[46]

1.65 Erne Energy argues that the AER has 'lost its way, no longer protecting the interests of consumers,' and that:

> The AER needs to be independent of government and free to act without political interference. Recent decisions…suggest a degree of political influence and this does not serve the needs of consumers.[47]

A clean sweep of roles and responsibilities

1.66 Nexa Advisory proposed a clean sweep of roles and responsibilities amongst the market bodies, starting with State and Federal Energy Ministers publishing a renewed Strategic Energy Plan (SEP). This should outline the following strategic priorities for the transition and be implemented via:

- refreshed Statements of Expectations for the AEMC, AER and AEMO;
- an independent review of the Boards of the AER, AEMC, AEMO and Energy Consumers Australia to ensure alignment with the strategy;
- a new, independent consumer voice within policy and decision-making;
- an independent review of the role and performance of electricity distribution networks; and
- improved representation of innovators / investors within the governance of each market and regulatory body.[48]

Consumer voice

1.67 Many submissions called for effective representation of the consumer voice in NEM governance, with widespread concern that Energy Consumers Australia, while effective in representing vulnerable consumers, was not effective in representing consumers as households and small businesses actively participating in the energy market with Consumer Energy Resources.[49]

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45 Professor Penelope Crossley, *Submission 58*, p. 8.

46 Australian Financial Markets Association, *Submission 66*, p. 3.

47 Erne Energy, *Submission 32*, Attachment A, p. 1.

48 Nexa Advisory, *Submission 26*, pp. 6-13.

49 Erne Energy, *Submission 32*, p. 6.

1.68 Erne Energy captured a common sentiment amongst submissions as follows:

> The future electricity system should be co-designed by consumers, empowering them to shape how this essential service is delivered to meet their needs, not the needs of an industry that is outdated and fighting to maintain the status quo.[50]

1.69 Nexa Advisory and the Smart Energy Council advocate establishing 'a new, independent consumer voice representing the interests of new energy consumers within policy and decision-making'.[51] The Smart Energy Council also advocate for the establishment of a national Consumer Energy Office within DCCEEW:

> This office will develop policy work to ensure the right incentives and standards for consumer energy. This will ensure that home electrification and helping families to slash their power bills is at the centre of Government policy and carries an appropriate level of weight in energy planning and regulation operations.[52]

1.70 Nexa Advisory remarked that:

> There is a clear need to consider how governance arrangements enable market bodies to expand their engagement and decision-making beyond consumer advocacy and theoretical long-term consumer outcomes, towards meaningful inclusion of consumers within decision-making in a way which builds social licence.[53]

1.71 Erne Energy said the AEMC would benefit from having a specific consumer-only member of the executive team with the role to be the consumers' voice in all processes.[54]

1.72 The Justice and Equity Centre, noting the significant inconsistency amongst statutory frameworks and the challenges faced by consumers in engaging with NEM governance, stated:

> Opportunity exists to ensure that all government decision-making processes embed robust and transparent processes for consumer, community and stakeholder engagement…Increased recognition of the importance of engagement has not come with the required support to build and fund capability for consumer and community stakeholders to have the capacity to engage meaningfully.[55]

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50 Erne Energy, *Submission 32*, p. 2.

51 Nexa Advisory, *Submission 26*, Smart Energy Council, *Submission 36*, p. 12.

52 Smart Energy Council, *Submission 36*, p. 2.

53 Nexa Advisory, *Submission 26*, p. 2.

54 Erne Energy, *Submission 32*, Attachment, p. 4.

55 The Justice and Equity Centre, *Submission 28*, p. 3.

1.73 Submissions did not raise the related issue of C&I participation in policy and decision-making. This may reflect the absence from submissions of the relevant peak councils, such as the AiGroup and the Property Council of Australia. However, these latter two bodies, together with ACOSS and the Energy Efficiency Council, authored the paper '*Demanding better - A reform agenda for harnessing the power and flexibility of demand side energy resources*', mentioned above. That paper envisages a broader notion of energy consumer encompassing industrial and commercial energy consumers as well as households and small businesses. In addition to recommending establishment of a stand-alone National Energy Performance Agency, the paper calls for a targeted reform agenda to improve representation across relevant organisations, both at board level and within agencies and departments.[56]

Innovator and investor voice

1.74 The Clean Energy Investor Group recommends establishing an Innovator and Investor Panel, similar to Energy Consumers Australia, to provide formal guidance on legislation and regulation. The Smart Energy Council echoed the concern:

> Across all of the covered institutions and energy bodies, the representation of innovators and investors must be strengthened to better reflect the rapidly changing industry.[57]

1.75 Nexa Advisory similarly called for improvement to:

> …the representation of innovators / investors within the governance of each market and regulatory body, with transparency of how this is included in decision-making.[58]

Recommendation 7

1.76 Commission a review of institutional arrangements for governance of the NEM to be conducted in parallel with, and to report to ECMC in conjunction with, the expanded review of post-2030 arrangements. Without limiting the scope of the review, it should have particular regard to:

- **the roles and responsibilities of the four market bodies;**
- **eliminating overlap amongst the four market bodies;**
- **clarifying the policy lead amongst the four market bodies;**

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[56] ACOSS, AiGroup, Energy Efficiency Council, The Property Council, '*Demanding Better – A reform agenda for harnessing the power and flexibility of demand side energy resources*', no date, p. 14, (accessed 14 December 2024)

[57] Smart Energy Council, *Submission 36*, p. 2.

[58] Nexa Advisory, *Submission 26*, p. 13.

- **transparency and accountability in the conduct of the four market bodies, including in their collective advice to ECMC via the Energy Advisory Board;**
- **the independence of the AER vis-à-vis the ACCC;**
- **deconflicting the multiple roles of AEMO to restore its independence as market operator and planner;**
- **relocation or spinning off of AEMO's non-core roles, including its contracted service roles;**
- **establishing independent verification of AEMO's cost estimates and cost-benefit analyses for actionable investments;**
- **embedding consumer representation in the governance and executive structures of AEMC, AER and AEMO;**
- **reconstituting Energy Consumers Australia to represent consumers as active participants in CER and C&I (in addition to representing vulnerable consumers), embedding AEC in the Energy Advisory Panel to ECMC, and funding a capability development program to equip consumer representatives to participate in policy and decision-making advice on par with that provided by utility-scale investors; and**
- **a roadmap to guide ECMC in the rapid implementation of recommendations.**

Reforming law to enable the energy transition

1.77 A number of submissions pointed to the convolution of the law and administrative arrangements governing the NEM. Professor Penelope Crossley captured this complexity as follows:

> The National Electricity Rules alone are currently on version 217 and run to 1938 pages. This is the second version of the NER issued within the month of October, and our 14th version thus far in 2024. Over one 12 day period earlier in the year, 4 separate versions of the NER applied, with one version (212) only in force for 3 days. The frequency of these piecemeal changes, coupled with the hundreds of Sate and Territory derogations from the rules, only serves to amplify the problems associated with the complex regulatory and institutional arrangements.[59]

1.78 Professor Crossley went on to remark that NER rules are not subject to parliamentary oversight or disallowance.

1.79 The Australian Financial Markets Association expressed similar concerns:

> It is AFMA's experience that the energy regulatory framework contains inefficiencies, overlap and redundant elements. It is AFMA's view that the root cause of this lies in the legislative framework itself.[60]

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[59] Professor Penelope Crossley, *Submission 58*, pp. 5-6.

[60] Australian Financial Markets Association, *Submission 66*, p. 4.

1.80 The Association proposed that the National Energy Rules would benefit from review similar to the Australian Law Reform Commission's (ALRC) recent review of the complex and inefficient *Corporations Act 2001*.[61] The ALRC review took three years involving three interim reports before delivering its final report in January 2024.[62]

1.81 The Grattan Institute proposed, as a departure point, consolidating the three national energy laws into one:

> Energy market governance needs to be fit for a net-zero economy. The three laws governing energy markets should be merged into one, to best serve the interests of consumers. And governments must give better policy direction so that market bodies can make better, faster decisions.[63]

1.82 Administration of the convoluted NEM laws and rules is glacial in its pace and in no manner fit for the urgent task of the energy transition. Tilt renewables gave force to this reality as follows:

> Tilt Renewables considers that the rule change process timeframes are incompatible with the rapid transition of the electricity market. Most rule changes drift on for years by which time the problems to be add8essed may well have changed.[64]

Recommendation 8

1.83 Reduce red tape in the energy market. Commission a root and branch overhaul of the National Energy Rules and administrative procedures to make them coherent, lean, accessible and efficient in enabling the fast-moving pace of the energy transition. The overhaul should be commissioned to the ALRC or contracted to a suitably resourced legal task force. The overhaul should be commenced immediately and progress in parallel with, and be informed by, the expanded *Post-2030 Review*. The review should finalise no later than December 2026, unless extended with the agreement of ECMC. The review should, to the extent possible, report in stages that facilitate the progressive implementation of its recommendations through legislative amendments and rule changes.

Energy poverty

1.84 Several submissions sought to address the problem of energy poverty inherent in the high capital costs that attach to Consumer Energy Resources, and inherent in the circumstances of renters and many apartment dwellers.

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61 Australian Financial Markets Association, *Submission 66*, p. 4.

62 Australian Law Reform Commission, *Confronting Complexity: Reforming Corporations and Financial Services Legislation* (ALRC Report 141), 18 January 2024.

63 Grattan Institute, *Submission 48*, p. 2.

64 Tilt Renewables, *Submission 29*, p. 2.

1.85 The Renew Illawarra Network stated:

> There are currently forces active within the Generator-Transmission-Distribution-Retail system that are artificially restricting the free market and community governance of Consumer Energy Resources. As a consequence, consumers face inflated energy prices, with the only alternative being substantial capital investments that yield minimal returns, particularly for batteries. A large number of consumers, including low-income households, renters, and apartment residents, who are unable to make such investments, are bearing the brunt of this injustice.[65]

1.86 The Justice and Equity Centre noted:

> Energy law and regulation has objectives, but these need review and reframing to ensure they equitably protect and promote the interests of all consumers. Other energy policy and institutions (at Commonwealth and jurisdictional level) need to be more consistently aligned with these reformed objectives. In particular, there are opportunities to more explicitly ensure energy governance (and bodies) recognise and promote equity of outcomes in their decision-making and strengthen their independent remit to do so as 'expert' bodies.[66]

1.87 ACOSS recommended, amongst other things, amending the National Energy Objectives to address inequity, consumer risk and harm, and demand side through adding social equity and energy affordability as objectives, and, subject to consideration, avoiding exposure of consumers to risks they are ill-equipped to understand, manage or price.[67]

1.88 Government appears predisposed to pass to the three market regulators responsibility for mitigating energy poverty amongst consumers. While there is scope for regulation to counter some of the drivers of energy poverty, there is also scope – and likely very much more – for fiscal and taxation measures to rebalance the interests of those cannot participate in the energy transition because they lack the resources, or they rent, or they live in apartments. Time is running out before the drivers of energy poverty take enduring effect. This would be morally reprehensible. And it would severely erode political support for the energy transition.

Recommendation 9

1.89 Commission an inquiry, to report for consideration by ECMC no later than December 2025, on the nature, extent and trajectory for energy poverty resulting from the energy transition, and recommend policies to substantively negate such poverty. The inquiry to be led by a panel comprising experts in welfare, economics and the energy market.

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65 Renew Illawarra Network, *Submission 5*, p. 2.

66 The Justice and Equity Centre, *Submission 28*, p. 2.

67 ACOSS, *Submission 52*, p. 6.

Position on the majority report

1.90 Although I accept much of what is contained in the majority report, there are a number of recommendations that I do not support.

1.91 I do not support Recommendation 1 of the majority report. As outlined above, the more appropriate body to conduct a review is the *Post-2030 Review*.

1.92 I do not support Recommendation 3 of the majority report. The Terms of Reference for the *Post-2030 Review* should be broadened as set out in Recommendation 1 above.

1.93 I do not support Recommendations 9 or 10 of the majority report. AEMO's ability to make projects actionable is significant to facilitating our energy transition. I have concerns about the practicality of implementing these recommendations.

1.94 I support in principle Recommendation 11 of the majority report, but recommend the review be focussed as set out in Recommendation 8 above.

1.95 I support Recommendation 12 of the majority report.

1.96 I do not support Recommendation 15. I have concerns about the practicality of implementing this recommendation and I do not believe it will have a significant impact.

1.97 I strongly support Recommendations 16, 17 and 21 of the majority report in relation to Consumer Energy Resources.

Senator David Pocock
Independent Senator for the Australian Capital Territory

Appendix 1
Submissions and additional information

Submissions

1 Nuclear For Climate Australia
2 Australian Energy Council
3 Centre for Independent Studies
- 3.1 Supplementary submission
- 3.2 Supplementary submission

4 Electrical Trades Union of Australia
5 Renew Illawarra Network
6 Mr Ted Woodley
7 Independent Engineers, Scientists and Professionals
8 Professor Bruce Mountain
9 Mr Ben Beattie
10 National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA)
11 South Australian Council of Social Service (SACOSS)
12 Department of Climate Change, Energy, the Environment and Water
13 Energy Consumers Australia
14 Australian Energy Market Operator
15 Australian Energy Regulator
16 Australian Energy Market Commission
17 Clean Energy Investor Group
18 Engineers Australia and Australian Academy of Technological Sciences & Engineering
19 Energy Networks Australia
20 Institute for Energy Economics and Financial Analysis (IEEFA)
21 CHOICE
22 Rainforest Reserves Australia
23 Australian Resources Development Pty Ltd Limited
24 The Superpower Institute
25 Coalition for Conservation
26 Nexa Advisory
27 The Energy Hub of The Warren Centre at The University of Sydney
28 The Justice and Equity Centre
29 Tilt Renewables
30 Southerly Ten
31 Uarbry Tongy Lane Alliance Inc
32 Erne Energy
33 Mr Greg Peak

34 Senex Energy
35 Energy and Water Ombudsman Victoria
36 Smart Energy Council
37 Positive Energy Places
38 Tasmanian Government
39 Tamboran Resources
40 APA Group
42 Mr Paul Miskelly
43 Climate & Energy Realists of Five Dock
44 Institute of Public Affairs
45 CWO REZist Inc
46 Mr Barrie Hill
47 Energy Efficiency Council
48 Grattan Institute
49 Dr Anne Kallies and Dr Rowena Cantley-Smith
50 Professor Michael Brear
51 Australian Council of Trade Unions
52 Australian Council of Social Service (ACOSS)
- Attachment

53 HumeLink Alliance Incorporated
54 Energy Grid Alliance
55 Ivan R. Kennedy
- 55.1 Supplementary submission

56 Australian Aluminum Council
57 thepeopleproject
- Attachment

58 Professor Penelope Crossley
- Attachment

59 Mr Ian McDonald
60 Gamma Energy Technology
61 RE-Alliance
62 Dr Kesten Green
63 Ms Emma Jeffrey
64 Dr Ron Ben-David
65 Mr Andrew Reynolds
66 Australian Financial Markets Association (AFMA)
67 Mr Haydn Carmichael
68 Australian Energy Producers
69 Clean Energy Council (CEC)
- Attachment

70 The Hon Nick Duigan MLC, Tasmanian Minister for Energy & Renewables, Minister for Parks & Environment
71 Mr Bob King
72 Department of Mining and Energy, Northern Territory
73 Australian Gas Infrastructure Group
74 Rebecca Tobin
75 Bioenergy Australia
76 2026 ISP Consumer Panel
77 Australian Pipelines and Gas Association
78 Rewiring Australia
79 Climateworks Centre
80 UNSW Collaboration on Energy and Environmental Markets
81 National Regional Energy Network
- 10 attachments

82 Clean Energy Regulator
83 SolarCitizens
84 Mrs Kathryn Reynolds
85 Wallaloo and Gre Gre District Alliance
86 Glenda Watts
87 National Electrical & Communications Association (NECA)
- Attachment

Additional Information

1 Opening statement at a public hearing on 31 October 2024.
2 Opening statement at a public hearing on 31 October 2024.
3 Review of the Integrated System Plan – Final Report, January 2024, DCCEEW, provided by Senator Van on 23 November 2024

Answer to Question on Notice

1 Answer to Senator Canavan's question taken on notice by the Australian Energy Market Commission at a public hearing on 23 October 2024 regarding consultations undertaken concerning the Optimal Development Path; received 6 November 2024.
2 Answer to Senator Canavan's question taken on notice by Engineers Australia at a public hearing on 31 October 2024 regarding engineers' earnings in the fossil fuel sector compared to those in renewables; received 8 November 2024.
3 Answer to Senator Canavan's question taken on notice by Australian Resources Development Pty Ltd at a public hearing on 30 October 2024 regarding Australian electricity prices compared with consumer prices; received 8 November 2024.
4 Answer to Senator Canavan's questions taken on notice by Energy Networks Australia at a public hearing on 30 October 2024 regarding gas and electricity networks; received 13 November 2024.

5 Answer to Senators' questions taken on notice by the Australian Energy Market Operator at a public hearing on 23 October 2024; received 13 November 2024.

6 Answer to Senator Canavan's questions taken on notice by Energy Consumers Australia at a public hearing on 29 October 2024; received 13 November 2024.

7 Answer to Senator Canavan's question taken on notice by the Centre for Independent Studies at a public hearing on 31 October 2024 regarding the cost of upgrading distribution networks to integrate rooftop solar and consumer energy resources; received 13 November 2024.

8 Answer to Senator Canavan's question taken on notice by the Australian Academy of Technological Sciences & Engineering at a public hearing on 31 October 2024; received 14 November 2024.

9 Answer to Senator Canavan's question taken on notice by Professor Michael Brear at a public hearing on 29 October 2024; received 14 November 2024

10 Answer to Senator Van's question taken on notice by Dr Gabrielle Kuiper at a public hearing on 31 October 2024; received 15 November 2024.

11 Answer to Senator Canavan's question taken on notice by the Institute for Energy Economics and Financial Analysis at a public hearing on 31 October 2024; received 13 November 2024.

12 Answers to Senator's questions taken on notice by the Australian Energy Regulator at a public hearing on 23 October 2024; received 22 November 2024

13 Answer to Senator D. Pocock's question taken on notice by the Department of Climate Change, Energy, the Environment and Water at a public hearing on 29 October 2024; received 22 November 2024.

14 Answer to Senator Canavan's question taken on notice by the Department of Climate Change, Energy, the Environment and Water at a public hearing on 29 October 2024 (IQ24-000173); received 2 December 2024.

15 Answer to Senator Canavan's question taken on notice by the Department of Climate Change, Energy, the Environment and Water at a public hearing on 29 October 2024 (IQ24-000174); received 2 December 2024.

16 Answer to Senator Canavan's question taken on notice by the Department of Climate Change, Energy, the Environment and Water at a public hearing on 29 October 2024 (IQ24-000175); received 2 December 2024.

17 Answer to Senator Van's question taken on notice by the Department of Climate Change, Energy, the Environment and Water at a public hearing on 29 October 2024 (IQ24-000180); received 2 December 2024.

18 Answer to Senator Van's question taken on notice by the Department of Climate Change, Energy, the Environment and Water at a public hearing on 29 October 2024 (IQ24-000181); received 2 December 2024.

19 Answer to Senator Canavan's question taken on notice by the Department of Climate Change, Energy, the Environment and Water at a public hearing on 29 October 2024 (IQ24-000176); received 6 December 2024.

20 Answer to Senator Canavan's question on notice taken by the Energy Advisory Panel at a public hearing on 5 December; received 12 December 2024.

21 Answer to Senator Van's written question on notice by the Australian Energy Regulator; received 12 December 2024.

22 Answer to Senator Canavan's question on notice taken by the Australian Energy Regulator at a public hearing on 5 December; received 12 December 2024.

23 Answer to Senator Canavan's question on notice taken by the Australian Energy Market Commission at a public hearing on 5 December; received 12 December 2024.

24 Answer to questions taken on notice by the Australian Energy Market Operator at a public hearing on 5 December 2024; received 12 December 2024.

25 Answer to Senator Grogan's written question on notice by the Australian Energy Market Operator; received 12 December 2024.

26 Answer to Senator Van's written question on notice by the Australian Energy Market Operator; received 12 December 2024.

27 Correction to evidence by the Australian Energy Market Operator at a public hearing on 5 December 2024; received 12 December 2024.

28 Answer to Senator Canavan's question taken on notice by the Department of Climate Change, Energy, the Environment and Water at a public hearing on 29 October 2024 (IQ24-000182); received 16 December 2024.

29 Answer to Senator Canavan's question taken on notice by the Department of Climate Change, Energy, the Environment and Water at a public hearing on 29 October 2024 (IQ24-000183); received 16 December 2024.

30 Answer to Senator Canavan's question taken on notice by the Department of Climate Change, Energy, the Environment and Water at a public hearing on 29 October 2024 (IQ24-000177); received 18 December 2024.

Media Releases

1 Media release calling for submissions for the EPRA inquiry (24 September 2024).

Appendix 2
Public Hearings

Wednesday 23 October 2024

Committee Room 2S3
Parliament House
Canberra

Australian Energy Market Operator (AEMO)

- Mr Daniel Westerman, Chief Executive Officer
- Ms Rebecca Irwin, Executive General Manager, Government and Stakeholder
- Ms Merryn York, Executive General Manager, System Design

Australian Energy Regulator (AER)

- Mrs Clare Savage, Chair
- Mr Justin Oliver, Deputy Chair
- Mr Matt Garbutt, Executive General Manager, Compliance, Enforcement & Surveillance
- Ms Stephanie Jolly, Executive General Manager, Consumers Policy & Market
- Mr Kris Funston, Executive General Manager, Network Regulation
- Mr Geoff Purvis-Smith, General Counsel, Legal, Corporate & Governance

Australian Energy Market Commission (AEMC)

- Ms Anna Collyer, Chair
- Mr Benn Barr, Chief Executive

Panel – AEMO, AER and AEMC

Tuesday 29 October 2024

Committee Room 2S3
Parliament House
Canberra

Dr Dylan McConnell, Private capacity

Professor Michael Brear, Private capacity – via videoconference

Energy Consumers Australia

- Dr Michael Schaper, Chair – via videoconference
- Dr Brendan French, Chief Executive Officer – via videoconference

- Ms Liz Stephens, General Manager, Public Affairs & Strategy – via videoconference

Institute of Public Affairs

- Mr Scott Hargreaves, Executive Director
- Adjunct Professor Stephen Wilson, Visiting Fellow

Gamma Energy Technology

- Dr Geoffrey Bongers, Director – via videoconference

Electric Power Consultants

- Dr Robert Barr, Director

Department of Climate Change, Energy, the Environment and Water

- Mr Simon Duggan, Deputy Secretary
- Ms Melissa Pang, Head, Electricity Markets Branch
- Mr Adam McKissack, Chief Energy Economist, Office of Energy Economics
- Ms Kirsty Gowans, Division Head, Electricity Division
- Ms Lisa Beckmann, Acting Principal Advisor
- Mr Matt Minchin, Acting Head, National Energy Transformation Division

Wednesday 30 October 2024

Committee Room 2S3
Parliament House
Canberra

Energy Networks Australia

- Ms Dominique van den Berg, Chief Executive Officer
- Mr Dominic Adams, General Manager, Networks

Australian Energy Council

- Mr David Feeney, General Manager, Wholesale – via videoconference
- Mr Ben Barnes, General Manager, Corporate Affairs – via videoconference

Nexa Advisory

- Ms Stephanie Bashir, Chief Executive Officer

HumeLink Alliance Incorporated

- Mr Michael Katz, Director – via videoconference
- Ms Andrea Strong, President – via videoconference

Regional Victoria Power Alliance

- Ms Vicki Johnson, Chair – via videoconference

Wallaloo and Gre Gre District Alliance Incorporated

- Ms Marcia McIntyre, Executive – via videoconference
- Ms Jacinda O'Sullivan, Executive Committee Member – via videoconference

Australian Resources Development Pty Ltd

- Dr David Carland, Executive Director

Thursday 31 October 2024

Committee Room 2S3
Parliament House
Canberra

Mr Ted Woodley, Private capacity

Professor Bruce Mountain, Private capacity

Grattan Institute

- Mr Tony Wood, Program Director, Energy and Climate Change
- Ms Alison Reeve, Deputy Program Director

Justice and Equity Centre

- Mr Douglas McCloskey, Program Director, Energy and Water Justice – via videoconference
- Mr Craig Memery, Senior Advisor, Energy – via videoconference

Professor Penelope Crossley, Private capacity

Centre for Independent Studies

- Mr Aidan Morrison, Director of Energy Research
- Mr Alexander Bainton, Senior Policy Analyst, Energy Program
- Mr Chang-Yeh (Michael) Wu, Senior Policy Analyst, Energy Program

Nuclear For Climate Australia

- Mr Robert Parker, Founder – via videoconference

Mr Barrie Hill, Private capacity – via videoconference

Institute for Energy Economics and Financial Analysis (IEEFA)

- Ms Johanna Bowyer, Lead Analyst, Australian Electricity
- Mr Jay Gordon, Energy Finance Analyst

Dr Gabrielle Kuiper, Private capacity

The Energy Hub of The Warren Centre at The University of Sydney

- Mr James Phillis, Chair
- Mr Brian Menzies, Member – via videoconference

Independent Engineers, Scientists and Professionals

- Dr James Taylor, Lead Author

Engineers Australia and Australian Academy of Technological Sciences & Engineering

- Mrs Romilly Madew, Chief Executive Officer
- Ms Kathryn Summers, Fellow
- Ms Kylie Walker, Chief Executive Officer
- Professor Ken Baldwin, Fellow

Energy Efficiency Council

- Mr Jeremy Sung, Head of Policy – via videoconference

ACOSS

- Ms Kellie Caught, Program Director, Climate Change and Energy – via videoconference

AiG

- Mr Tennant Reed, Director, Climate Change and Energy – via videoconference

Property Council of Australia

- Ms Francesca Muskovic, National Policy Director – via videoconference

Clean Energy Investor Group

- Ms Marilyn Crestias, Head of Policy and Advocacy – via videoconference

Thursday 5 December 2024

Committee Room 2S3
Parliament House
Canberra

Energy Advisory Panel (including ACCC Commissioner)

- Ms Anna Brakey, Commissioner

Australian Energy Regulator (AER)

- Mr Justin Oliver, Chair
- Ms Claire Savage, Chair
- Ms Anthea Harris, Chief Executive Officer, Consumers, Policy and Market
- Ms Stephanie Jolly, Executive General Manager, Consumers, Policy and Market
- Mr Matt Garbutt, Executive General Manager, Compliance and Enforcement
- Mr Geoff Purvis-Smith, General Counsel, Legal, Corporate and Governance

Australian Energy Market Commission (AEMC)

- Ms Anna Collyer, Chair
- Mr Benn Barr, Chief Executive

Australian Energy Market Operator (AEMO)

- Mr Daniel Westerman, Chief Executive Officer
- Ms Rebecca Irwin, Executive General Manager, Government and Stakeholder
- Ms Merryn York, Executive General Manager, System Design