The Senate

Select Committee on Electricity Prices

Reducing energy bills and improving efficiency

November 2012

ISBN 978-1-74229-712-5

This document was printed by the Senate Printing Unit, Parliament House, Canberra

Committee membership

Committee members
Senator Matt Thistlethwaite (ALP, NSW) (Chair)
Senator Mathias Cormann (LP, WA)
Senator Sean Edwards (LP, SA)
Senator Alex Gallacher (ALP, SA)
Senator Anne McEwen (ALP, SA)
Senator Christine Milne (AG, TAS)
Senator the Hon Lin Thorp (ALP, TAS)
Senator John Williams (NATS, NSW)

Substitute members
Senator the Hon Ian Macdonald (LP, QLD) substituted for
Senator Mathias Cormann (LP, WA) on 3 October 2012

Participating members
Senator the Hon Ron Boswell (NATS, QLD)
Senator Scott Ludlam (AG, WA)
Senator Larissa Waters (AG, QLD
Senator Nick Xenophon (IND, SA)

Committee secretariat
Ms Sophie Dunstone, Acting Secretary
Ms Toni Matulick, Inquiry Secretary
Dr Jon Bell, Principal Research Officer
Ms Sophie Power, Principal Research Officer
Mr Chris Lawley, Senior Research Officer
Ms Sharon Babyack, Senior Research Officer
Ms Jacquie Hawkins, Research Officer
Mrs Dianne Warhurst, Administration Officer

Committee address
PO Box 6100
Parliament House
Canberra ACT 2600
Tel: 02 6277 3525
Fax: 02 6277 5818
Email: electricityprices.sen@aph.gov.au
Internet: www.aph.gov.au/Parliamentary_Business/Committees/Senate_Committees?url=ec_ctte/index.htm

Table of Contents

Part III - Demand

Abbreviations

ABARE	Australian Bureau of Agriculture and Resource Economics
ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
ACCI	Australian Chamber of Commerce and Industry
ACOSS	Australian Council of Social Service
ACT	Australian Capital Territory
AEMA	Australian Energy Market Agreement
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
Ai Group	Australian Industry Group
AM	Member of the Order of Australia
AMI	advanced metering infrastructure
ASFA	Association of Superannuation Funds Australia
ATA	Alternative Technology Association
BREE	Bureau of Resources and Energy Economics
CALC	Consumer Action Law Centre
capex	capital expenditure
CEC	Clean Energy Council
COAG	Council of Australian Governments
committee, the	Senate Select Committee on Electricity Prices
COTA	Council of the Ageing

CPSA	Combined Pensioners and Superannuants Association of New South Wales
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CUAC	Consumer Utilities Advocacy Centre
DBs	distribution businesses
DCEE	Department of Climate Change and Energy Efficiency
DRET	Department of Resources, Energy and Tourism
EAPA	Energy Accounts Payable Assistance
EEC	Energy Efficiency Council
EEO	Energy Efficiency Opportunities
ENA	Energy Networks Association
ERA	Economic Regulation Authority of Western Australia
ERAA	Energy Retailers Association of Australia
ESAA	Energy Supply Association of Australia
ESI	Energy Savings Initiative
ESS	Energy Savings Scheme
EUAA	Energy Users Association of Australia
EWON	Energy and Water Ombudsman New South Wales
EWOV	Energy and Water Ombudsman Victoria
FiT	feed in tariff
GEMS	Greenhouse and Energy Minimum Standards
GFC	Global Financial Crisis
GW	gigawatt
HESS	Home Energy Savings Scheme
IHD	in-home display
IMO	Independent Market Operator

IPART	Independent Pricing and Regulatory Tribunal NSW
kV	kilovolts
kWh	kilowatt-hour
LRET	Large-scale Renewable Energy Target
MCE	Ministerial Council on Energy (replaced by the SCER)
MEU	Major Energy Users
MW	megawatt
NCCARF	National Climate Change Adoption Research Facility
NECF	National Energy Customer Framework
NEL	National Electricity Law
NEM	National Electricity Market
NEMLA	National Electricity Market Legislation Agreement
NEMMCO	National Electricity Market Management Company
NEO	National Electricity Objective
NER	National Electricity Rules
NERL	National Energy Retail Law
NERR	National Energy Retail Rules
NGF	National Generators Forum
NILS	No Interest Loan Scheme
NPV	net present value
NSP	network service provider
NSW	New South Wales
NWIS	North West Interconnected System
OECD	Organisation for Economic Co-operation and Development
opex	operational expenditure

PIAC	Public Interest Advocacy Centre
PJ	petajoules
PoC	*Power of Choice* draft report
PPI	purchasing power parity
PV	photovoltaic
QCOSS	Queensland Council of Social Services
REC	Renewable Energy Certificate
REES	Residential Energy Efficiency Scheme
RET	Renewable Energy Target
SCER	Standing Council on Energy and Resources (formerly the MCE)
SRES	Small-scale Renewable Energy Scheme
STOU	seasonal time of use
SWIS	South West Interconnected System
TEC	Total Environment Centre
totex	total expenditure
UTS	University of Technology Sydney
VEET	Victorian Energy Efficiency Target
W	watt
WA	Western Australia
WEM	Wholesale Electricity Market

Executive Summary

There are many reasons for recent large increases in electricity prices, including the replacement of out-dated infrastructure and increased peak demand. However, in the committee's view, the most significant of these is inefficient over-investment in network infrastructure—the poles and wires.

Current regulation of the National Electricity Market (NEM) creates a perverse incentive for network businesses to engage in inefficient over-investment. To deal with this, the committee has made a number of recommendations to ensure greater scrutiny of network business investment proposals by the Australian Energy Regulator (AER). These include:

- adoption of new guidelines for assessing rates of return and a requirement that these guidelines are reviewed every three years;
- changes to the National Electricity Rules (NER) to ensure more efficient forecasting of capital returns, return on debt, and capital and operational expenditure as well as decoupling of network revenues from energy volumes;
- greater guidance for tariff-setting by network businesses; and
- the ability for the AER to conduct ex post reviews of network business capital expenditure.

The National Electricity Objective (NEO) outlines the purpose of the National Electricity Law (NEL). To ensure that regulation and operation of the NEM reflects the current energy policy framework and promotes broader environmental policy objectives, the committee has recommended that the NEO is better aligned with these broader policies.

Peak demand has also contributed to recent electricity price rises. On very hot or very cold days, demand for electricity increases dramatically. These peak demand events generally occur for less than 40 hours per year; however, network businesses have been investing in infrastructure to ensure the electricity grid can handle peak demand and this puts pressure on retail electricity prices.

To reduce the impact of peak demand events on the system and subsequently on retail electricity prices, the committee has recommended that the Standing Council on Energy and Resources (SCER) agree:

- to the introduction of cost reflective pricing for electricity consumers, subject to continued provision of a flat, regulated tariff for vulnerable consumers;
- to the roll-out of smart meters for households and businesses in certain circumstances;
- that prior to the introduction of these measures, Australian governments fund and undertake a comprehensive consumer education and information campaign; and

- to introduce changes to the regulation and operation of the NEM that would encourage and allow consumers, or authorised third parties, to sell their demand in the wholesale electricity market.

Many residential and commercial electricity consumers are installing embedded generation (for example co- and tri-generation and solar photovoltaic generation) in their homes and businesses: this has a positive impact on both electricity prices and the environment. The committee heard that network design, connection and cost barriers currently impede energy produced via embedded generation being fed into the grid. The committee believes that SCER should examine these barriers and consider appropriate regulatory and operational reforms to encourage the connection of embedded generation to the electricity grid.

Most residential consumers are poorly informed when it comes to retail electricity arrangements, the price of electricity and how their electricity consumption impacts on their bill. As a consequence, consumers have been unable to choose retail electricity offers better suited to their needs or modify their electricity consumption in ways that would help minimise their electricity costs. Further, and also to the detriment of consumers, their interests are poorly protected and represented in the NEM. To address this, the committee supports the introduction of the National Energy Customer Framework (NECF) and has recommended that all states and territories adopt these model laws by 1 July 2013. The committee has also recommended establishment of a national consumer advocacy body to promote the interests of electricity consumers in NEM regulation and decision-making.

Part I
Introduction and background

Chapter 1
Introduction

Conduct of the inquiry

1.1 On 23 August 2012, the Senate established the Select Committee on Electricity Prices (the committee) to inquire and report on the following matters by 1 November 2012:[1]

(a) identification of the key causes of electricity price increases over recent years and those likely in the future;

(b) the legislative and regulatory arrangements relating to network transmission decision making and its impact on electricity bills;

(c) options to reduce peak demand and improve the productivity of the national electricity system;

(d) investigation of mechanisms that could assist households and businesses to reduce their energy costs, including:

  (i) the identification of practical low cost energy efficiency options to assist low income earners reduce their electricity costs;

  (ii) the opportunities for improved customer advocacy;

  (iii) the opportunities and possible mechanisms for the wider adoption of technologies to provide consumers with greater information to assist in managing their electricity use;

  (iv) the adequacy of current consumer information, choice and protection measures, including the benefits of uniform adoption of the National Energy Customer Framework;

  (v) the arrangements to support and assist low income and vulnerable consumers with electricity pricing, in particular relating to the role and extent of dividend redistribution from electricity infrastructure;

  (vi) the arrangements for network businesses to assist their customers to save energy and reduce peak demand as a more cost effective alternative to network infrastructure spending; and

  (vii) the improved reporting by electricity businesses of their performance in assisting customers to save energy and reduce bills; and

(e) investigation of opportunities and barriers to the wider adoption of new and innovative technologies, including:

  (i) direct load control and pricing incentives;

---

1 *Journals of the Senate*, 23 August 2012, pp 2873–2874.

(ii) storage technology;

(iii) energy efficiency; and

(iv) distributed clean and renewable energy generation.

(f) any related matter.

1.2 In accordance with usual practice, the committee advertised the inquiry in *The Australian* and on its website. The committee also wrote to relevant organisations inviting submissions by 14 September 2012.[2] The committee received 113 submissions. A full list of submissions is provided at Appendix 1.

1.3 The committee held five public hearings in the following cities:

- Sydney, 25 September 2012;
- Melbourne, 27 September 2012;
- Perth, 2 October 2012;
- Brisbane, 3 October 2012; and
- Canberra, 9 October 2012.

1.4 A list of stakeholders who gave evidence to the committee at these public hearings is provided at Appendix 2.

1.5 The committee also made site visits to Macquarie Generation's Liddell Power Station which uses solar thermal augmentation to coal-fired generation,[3] the Commonwealth Scientific and Industrial Research Organisation (CSIRO) Energy Centre and Ausgrid's Smart Grid, Smart City trial, both in Newcastle.[4]

Report Structure

1.6 This report is divided into three parts as follows.

Part I: Introduction and background

1.7 Chapter 1 details information on the conduct of the inquiry.

1.8 Chapter 2 provides an overview of Australia's electricity market and a snapshot of electricity consumption in Australia.

---

2 See Senate Select Committee on Electricity Prices, available: www.aph.gov.au/Parliamentary_Business/Committees/Senate_Committees?url=electricityprices_ctte/electricityprices/index.htm (accessed 10 October 2012).

3 For further information see Macquarie Generation, *Liddell Power Station*, available: www.macgen.com.au/Generation-Portfolio/ (accessed 10 October 2012).

4 For further information see CSIRO, *CSIRO Energy Centre*, available: www.csiro.au/en/Outcomes/Climate/Reducing-GHG/Newcastle.aspx (accessed 10 October 2012) and Smart Grid, Smart City, available: www.smartgridsmartcity.com.au/ (accessed 10 October 2012).

Part II: Price setting and regulation

1.9 Chapter 3 discusses how electricity prices are set and the key causes of electricity price rises.

1.10 Chapter 4 examines the regulation of the electricity market.

Part III: Demand

1.11 Chapter 5 examines demand management and ways in which consumers can reduce their electricity consumption.

1.12 Chapter 6 discusses consumer protections, particularly for low income and vulnerable consumers.

Acknowledgements

1.13 The committee thanks all the individuals and organisations that contributed to the inquiry. The committee also extends its thanks to Macquarie Generation, CSIRO and Ausgrid for hosting the committee on its site visits.

Chapter 2

Background

2.1 This chapter provides background information on the electricity market in Australia, including a snapshot of electricity consumption.

Electricity

2.2 Electricity is an essential resource for Australian households and businesses. It provides the energy needed to power lights, heaters, air conditioners, refrigerators, appliances and many more important machines.

2.3 Electricity is a form of energy produced by the flow of electrons along a conductor. It is a secondary energy source as it is produced by the conversion of other energy sources such as the chemical energy in coal, natural gas and oil. Other primary sources of energy, like the sun and wind, are increasingly being used to produce electricity.[1]

2.4 Electricity can be produced by either chemical means or mechanical action. Electricity produced by chemical means relies on a flow of charged particles from cells in a battery. This type of electricity production is expensive and can meet only limited, specific requirements.[2]

2.5 Electricity generated by mechanical means requires large, powerful magnets to spin rapidly inside coils of conducting wire driven by steam, gas or water turbines. This is how many generators in modern power stations produce electricity.[3]

2.6 Electrical energy cannot be stored (except in a limited number of circumstances) and therefore its supply must match demand. If it does not, then generation and transmission systems may become unstable and dangerous. Electrical energy can be measured, and being measurable, can be bought and sold according to the quantities delivered.

2.7 A unit of electrical energy is referred to as a watt (W). Electricity to consumers is usually measured in kilowatt-hours (kWh) with one kilowatt-hour being the amount of energy consumed by an appliance in one hour if it operates at a power of one thousand watts.

2.8 Once electricity has been generated, it is transmitted to where it is needed at near the speed of light though a sequence of specific events:

---

1 Australian Energy Market Operator (AEMO), *An introduction to Australia's National Electricity Market*, July 2012, available: www.aemo.com.au/~/media/Files/Other/corporate/0000-0262%20pdf.pdf (accessed 11 October 2012), p. 2.

2 AEMO, *An introduction to Australia's National Electricity Market*, July 2012, p. 2.

3 AEMO, *An introduction to Australia's National Electricity Market*, July 2012, p. 2.

- A transformer converts the electricity produced at a generation plant from low to high voltage to enable its efficient transport within the high voltage transmission network.
- The energy then passes through a step down transformer to a lower voltage line for supply into the wider distribution network.
- The energy then travels along a distribution line to the point of use. For domestic consumers, the energy undergoes a final reduction which converts the electricity to a voltage compatible with household appliances.[4]

2.9 Electricity supply can therefore be thought of as having four key components:

- Generation—power stations create electricity from sources such as fossil fuels, hydro, wind and solar power.
- Transmission—electricity is transferred by high voltage power lines from power stations to population centres.
- Distribution—electricity is sent by low voltage power lines from specified high voltage distribution points to homes and business.
- Retail—electricity is sold to end users.

History of Australian electricity markets

2.10 Prior to the 1990s, electricity in Australia had been a utility provided by state or territory governments. State government-owned utilities provided all four components of electricity supply in each state (generation, transmission, distribution and retail). [5] Each state had its own separate electrical supply systems with only limited interconnection. Individual state agencies were responsible for planning, developing, commissioning and operating these electricity systems.[6]

2.11 Reviews by the Industry Commission and the Independent Committee of Inquiry into a National Competition Policy for Australia (the Hilmer Inquiry) in the early 1990s identified the significant benefits that were potentially available from introducing competitive market arrangements for the trading of electricity.[7]

2.12 In May 1996, New South Wales (NSW), Victoria, Queensland, South Australia and the Australian Capital Territory (ACT) entered into an agreement

---

4 Commonwealth Scientific and Industrial Research Organisation (CSIRO), *Intelligent grid: A value proposition for distributed energy in Australia*, 2009, available: www.csiro.au/en/Outcomes/Energy/Carbon-Footprint/IG-report.aspx (accessed 11 October 2012), p. 68.

5 Council of Australian Governments (COAG), *Parer Review: Towards a truly national and efficient energy market*, 2002, available: www.ret.gov.au/Documents/mce/_documents/FinalReport20December200220050602124631.pdf (accessed 11 October 2012), p. 62.

6 Productivity Commission, *The growth and revenue implications of Hilmer and related reforms*, March 1995, p. 223 and 226.

7 COAG, *Parer Review: Towards a truly national and efficient energy market*, 2002, p. 62.

known as the National Electricity Market Legislation Agreement (NEMLA) under which each of the participating jurisdictions agreed to enact a National Electricity Law (NEL), with South Australia as the lead jurisdiction.[8]

2.13 Enactment of the NEL in each of these states ensured that all significant electricity industry participants (such as generators, distributions and retailers) were required to participate in a single electricity market—the National Electricity Market (NEM).[9] The regulatory arrangements established for the NEM were consistent with the reforms taking place in national competition policy.

2.14 The NEM commenced operation on 13 December 1998.[10] Each of the participating jurisdictions developed complementary reforms which involved the separation of government-owned utilities and introduced competition between the generators and, on a phased basis, between the retailers.[11] The establishment of the NEM also brought the monopoly network elements under economic and access regulation to ensure open access at fair and reasonable tariffs. Electricity generated in one state could now be transmitted and sold to a retail customer in another state.

2.15 In 2004, the Commonwealth, state and territory governments replaced the NEMLA with the Australian Energy Market Agreement (AEMA). This agreement sets the ongoing agenda for a transition from standalone electricity systems to national energy regulation. The AEMA also aims to '…promote the long term interests of consumers with regard to the price, quality and reliability of electricity and gas services'.[12]

2.16 Under the AEMA, the Standing Council on Energy and Resources (SCER)[13] is the national energy policy and governance body for Australia's energy markets. Membership of SCER comprises the federal, state and territory and New Zealand

---

8 The National Electricity Law (NEL) is a schedule of the *National Electricity (South Australia) Act 1996 (SA)*. It is also applied, by virtue of jurisdictional Application Acts, as a law in each of the jurisdictions that participate in the National Electricity Market (NEM).

9 *National Electricity (South Australia) Act 1996*, section 9.

10 AEMO, *Frequently asked questions*, http://www.aemo.com.au/About-the-Industry/Frequently-Asked-Questions, (accessed 24 October 2012).

11 COAG, *Parer Review: Towards a truly national and efficient energy market*, 2002, p. 63.

12 Department of Resources, Energy and Tourism (DRET), *Australian Energy Market Agreement*, June 2004, available: www.ret.gov.au/Documents/mce/_documents/IGA_FINAL_%2830JUNE2004%292004071310032320041112162849.pdf (accessed 12 October 2012), p. 6.

13 SCER is an amalgamation of the Ministerial Council on Energy (MCE) and Ministerial Council on Mineral and Petroleum Resources.

See SCER, *Background*, available: http://www.scer.gov.au/about-us/background/ (accessed 21 October 2012).

energy and resources ministers, chaired by the Commonwealth Minister for Resources and Energy.[14]

2.17 Western Australia and the Northern Territory were not included in the development of the NEM, primarily because of their geographical distance from the east coast. In 2006, a wholesale electricity market was established in the South West Interconnected System (SWIS) in Western Australia.[15]

The National Electricity Market

2.18 The NEM is a wholesale market though which generators sell electricity in Queensland, NSW, the ACT, Victoria, South Australia and Tasmania.

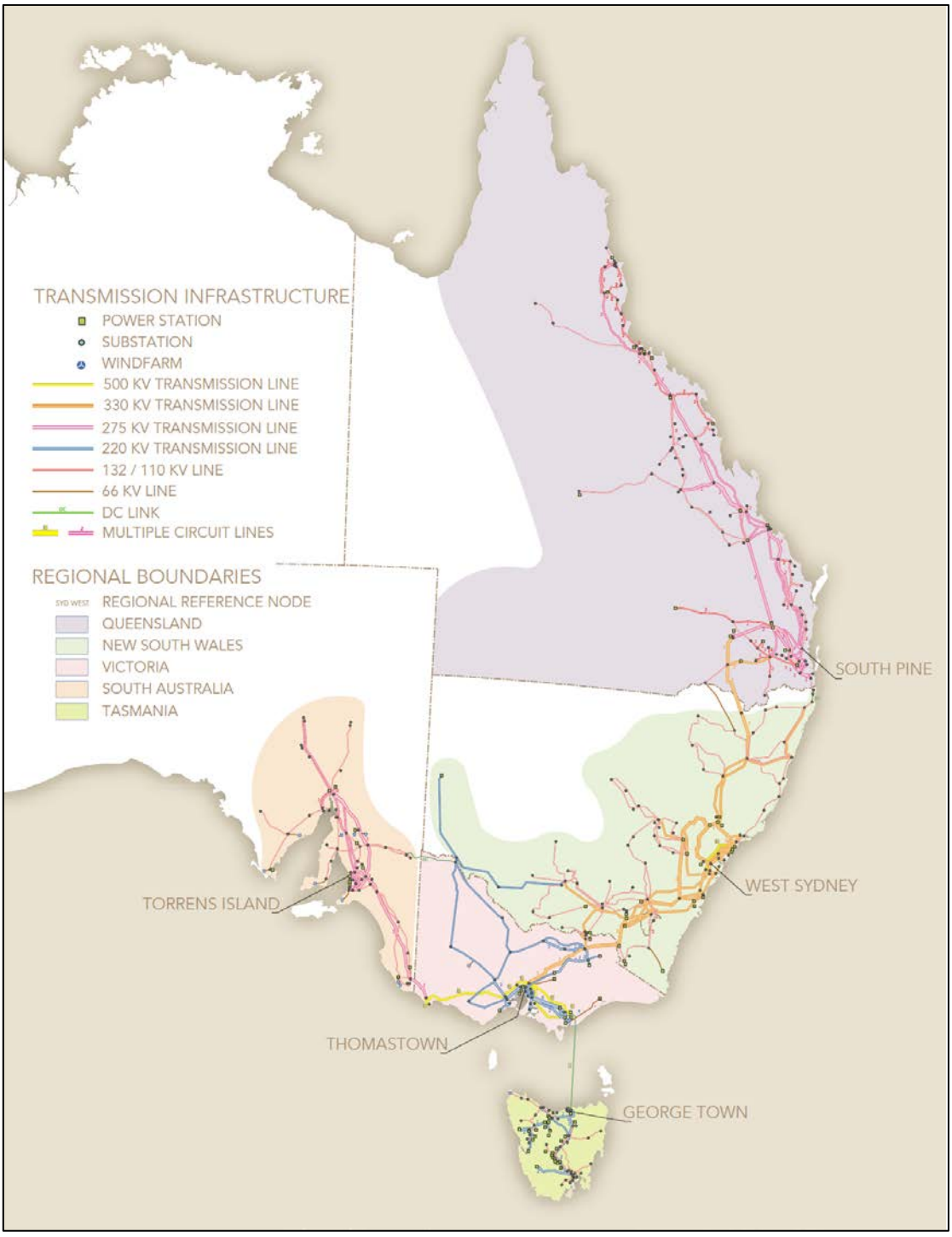
2.19 As mentioned above, the market commenced operation in December 1998 and physically links five regions—Queensland, NSW (including the ACT), Victoria, South Australia and Tasmania—by an interconnected transmission network (Figure 2.1).[16]

14 SCER, *Membership*, available: www.scer.gov.au/about-us/membership/ (accessed 12 October 2012).

15 Economic Regulation Authority (Western Australia), *2011 Annual Wholesale Electricity Market Report for the Minister for Energy*, 5 April 2012, p. 5.

16 Tasmania joined the NEM in 2005 and was physically interconnected by the Basslink undersea power cable in April 2006.

Figure 2.1 Regions and networks in the National Electricity Market[17]



2.20 The NEM is the most geographically dispersed electricity network in the world.[18] It stretches for more than 4000 kilometres from Port Douglas in the north of

17 AEMO, *An introduction to Australia's National Electricity Market*, July 2012, p. 25.

18 Productivity Commission, *Productivity Commission Issues Paper: Electricity network regulation*, February 2012, available: www.pc.gov.au/__data/assets/pdf_file/0017/115541/electricity-issues-paper.pdf (accessed 11 October 2012), p. 8.

Queensland to Port Lincoln in South Australia and via the Basslink undersea cable between Victoria and Tasmania. The physical infrastructure encompasses high powered transmission lines known as interconnectors, which carry electricity between five regions (roughly created around state borders), and transmission and distribution networks within each region.

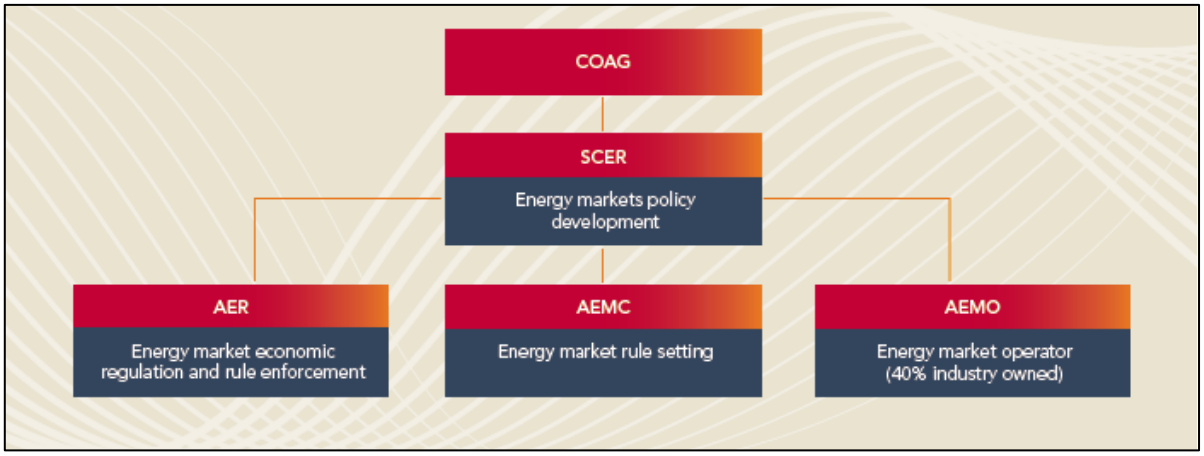
2.21 The NEM has a registered capacity of 49 110 megawatts (MW).[19] There are 305 registered generators in the NEM who service nine million customers.[20]

2.22 Some assets that comprise the NEM's infrastructure are owned and operated by state governments and some are owned and operated under private business arrangements.[21]

Regulation

2.23 The Council of Australian Governments (COAG) is the peak intergovernmental forum in Australia. Through it, SCER is responsible for developing inter-jurisdictional policies related to the electricity and gas markets. Beneath COAG and SCER, the Australian Energy Market Commission (AEMC), Australian Energy Market Operator (AEMO) and Australian Energy Regulator (AER) have responsibility for managing, operating and regulating the NEM (Figure 2.2).

Figure 2.2: Governance structure in the National Electricity Market[22]



2.24 The NEM is established by the NEL under the *National Electricity (South Australia) Act 1996*. The NEL is applied as law in each participating jurisdiction of the NEM by application statutes.[23]

---

19 Australian Energy Regulator (AER), *State of the energy market: 2011*, Australian Competition and Consumer Commission (ACCC), Canberra, 2011, p. 25.

20 AER, *State of the energy market: 2011*, ACCC, Canberra, 2011, p. 25.

21 AEMO, *An introduction to Australia's National Electricity Market*, July 2012, p. 4.

22 AEMO, *Pivotal to Australia's energy future*, August 2012, p. 6.

23 Australian Energy Market Commission (AEMC), *Relevant legislation*, available: www.aemc.gov.au/electricity/legislation.html (accessed 14 October 2012).

2.25 The National Electricity Rules (NER) govern the operation of the NEM.[24] The rules have the force of law, and are made under the NEL.[25]

Australian Energy Market Operator

2.26 The NEM is managed and operated by AEMO. AEMO has had this function since 1 July 2009 when operational responsibility was transferred from the National Electricity Market Management Company (NEMMCO) which managed the market prior to this date.[26]

2.27 The primary responsibility of AEMO is to balance the demand and supply of electricity by dispatching the generation necessary to meet demand.[27] In respect to the electricity market, AEMO is responsible for the management of the NEM, pricing for network services, overseeing reliability and security, directing generators to increase production during periods of supply shortfall, and instructing load shedding to rebalance supply and demand to protect power system operations.[28]

2.28 AEMO also has responsibility for national transmission planning in eastern and southern Australia, electricity emergency management and facilitation of full retail competition.[29]

2.29 AEMO operates on a cost recovery basis as a corporate entity limited by guarantee under the Corporations Law.[30] Its membership structure is split between government and industry (60 per cent and 40 per cent, respectively). Government members of AEMO include the governments of the Commonwealth, Queensland, NSW, Victoria, South Australia, Tasmania and the ACT. Industry members comprise electricity generators, network businesses and retailers.[31]

2.30 AEMO performs its functions under the NEL and NER. AEMO's functions are prescribed in the NEL while procedures and processes for market operations, power system security, network connection and access, pricing and national transmission planning are all prescribed in the NER.

---

24 AEMC, *National Electricity Rules: Current rules*, available: www.aemc.gov.au/Electricity/National-Electricity-Rules/Current-Rules.html (accessed 14 October 2012).

25 AEMC, *National Electricity Rules: Current rules*, available: http://www.aemc.gov.au/Electricity/National-Electricity-Rules/Current-Rules.html (accessed 24 October 2012).

26 AEMO, *About AEMO: History*, available: http://www.aemo.com.au/About-AEMO/History (accessed 21 October 2012).

27 AEMO, *An introduction to Australia's National Electricity Market*, July 2012, p. 5.

28 AEMO, *An introduction to Australia's National Electricity Market*, July 2012, p. 5.

29 AEMO, *An introduction to Australia's National Electricity Market*, July 2012, p. 5.

30 AEMO, *An introduction to Australia's National Electricity Market*, July 2012, p. 5.

31 AEMO, *Membership*, available: www.aemo.com.au/About-AEMO/Membership (accessed 14 October 2012).

Australian Energy Regulator

2.31 The AER is the NEM regulator. It is an independent statutory authority and a constituent part of the Australian Competition and Consumer Commission (ACCC). The AER operates under the *Competition and Consumer Act 2010*.

2.32 The NER set out how the AER must regulate electricity and gas networks. According to the rules, the AER is required to:

- set the prices charged for using energy networks (electricity poles and wires and gas pipelines) to transport energy to customers;
- monitor wholesale electricity and gas markets to ensure suppliers comply with the legislation and rules, and taking enforcement action where necessary;
- publish information on energy markets; and
- assist the ACCC with energy-related issues arising under the Competition and Consumer Act, including enforcement, mergers and authorisations.[32]

2.33 The AER is also responsible for regulation of the retail electricity and gas markets where jurisdictions have adopted the *National Energy Retail Law (South Australia) Act 2011*. The National Energy Retail Law (NERL), together with the National Energy Retail Rules (NERR), establishes the National Energy Customer Framework (NECF).[33] To date, only Tasmania and the ACT have applied the NECF.[34]

2.34 The AER board comprises one member nominated by the Commonwealth government and two nominated by state and territory governments.[35] Board members are appointed by the Governor-General for terms of up to five years, and one of them is appointed as chair of the AER.

2.35 The AER is funded by the Commonwealth government with staff, resources and facilities provided through the ACCC.

Australian Energy Market Commission

2.36 The AEMC was established in 2005 under the *Australian Energy Market Commission Establishment Act 2004 (South Australia)*. The AEMC is responsible for developing the NER under the NEL and conducting independent reviews of energy markets for SCER.[36]

2.37 Under the current statutory rule making process, the AEMC is required to assess any proposed change to the NER against the National Electricity Objective (NEO) and in doing so must 'follow an open and consultative process to ensure

---

32 AER, *AER's role in energy*, available: www.aer.gov.au/node/1287 (accessed 25 October 2012).

33 *National Energy Retail Law (South Australia) Act 2011*.

34 DRET, *Submission 61*, pp 9–10.

35 AER, *AER board*, available: www.aer.gov.au/node/6021 (accessed 12 October 2012).

36 AEMC, *Who we are*, available: www.aemc.gov.au/about-us/who-we-are.html (accessed 14 October 2012).

decisions take account of the views of stakeholders'.[37] Any individual or organisation, other than the AEMC, can propose a rule change.[38]

2.38 Once the AEMC makes a final determination on a proposed rule change, the NER are amended. Separate government approval is not required for rule changes to take effect.

2.39 In accordance with the provisions of the AEMC Establishment Act, two of the three commissioners are appointed to the AEMC on the recommendation of the participating state and territory jurisdictions; the other is appointed on the recommendation of the Commonwealth government.

2.40 The AEMC is fully funded by state and territory governments based on an agreed cost sharing arrangement.[39]

Western Australian and Northern Territory electricity markets

2.41 Western Australia's electricity market is divided into several distinct systems: the SWIS, the North West Interconnected System (NWIS) and 29 isolated regional power systems. The SWIS operates as a wholesale electricity market, whilst the NWIS remains a fully vertically integrated system with one state-owned corporation providing the transmission, distribution and retailing of electricity.[40]

2.42 The SWIS includes Perth and extends from Albany in the south, to Kalgoorlie in the east and to Kalbarri in the north (see Figure 2.3). The NWIS services the communities of Dampier, Wickham, Pannawonica, Paraburdoo and Tom Price through the Pilbara Iron Network and Port Hedland, South Hedland, Karratha, Roebourne and Point Samson through the Horizon Power Network (Figure 2.3).[41]

37 AEMC, *Submission 28*, pp 1–2.

38 AEMC, *Submission 28*, p. 1.

39 DRET, *Submission 61*, p. 7.

40 Horizon Power, *About us*, available: www.horizonpower.com.au/about_us.html (accessed 11 October 2012).

41 North West Interconnected System (NWIS), *The NWIS*, available: www.nwis.com.au/aboutus.html (accessed 14 October 2012).

Figure 2.3: The South West Interconnected System (SWIS) and North West Interconnected System (NWIS)[42]

2.43 The electricity industry in the Northern Territory is small, reflecting the territory's small population. There are three relatively small regulated systems: Darwin-Katherine, Alice Springs and Tennant Creek. Given the scale of the Northern Territory market, it has not been considered feasible to establish a wholesale electricity spot market.[43] Market reforms were undertaken in 2000 to phase in competition of electricity supply and reduce the state government-owned Power and Water Corporation's natural monopoly.[44]

South West Interconnected System

2.44 On 21 September 2006, the Wholesale Electricity Market (WEM) for the SWIS commenced operation following a decision by the WA state government to

42 Perth Energy, *Markets and consumers*, available: www.perthenergy.com.au/electricity-market-mainmenu-69/market-a-consumers-mainmenu-72 (accessed 15 October 2012)

43 Utilities Commission (Northern Territory), *Annual Power System Review*, December 2007, pp 4–5.

44 Bureau of Resources, Energy and Economics (BREE), *Australian Energy Update 2012*, August 2012, p. 31.

reform the state's electricity industry.[45] The Western Power Corporation, which supplied electricity in the southern region of Western Australia, was restructured into four separate corporations providing generation, network infrastructure and retailing.[46]

2.45 The SWIS has a capacity of approximately 4500 MW and 46 registered generators.[47] The SWIS services approximately 980 000 customers.[48]

2.46 The WEM is run and operated by the Independent Market Operator (IMO) according to the Wholesale Electricity Market Rules.[49]

2.47 A second body, System Management, is responsible for the physical operation of the power system so as to ensure its secure and reliable operation.[50]

2.48 The Economic Regulation Authority (ERA) in Western Australia licences electricity operators, including generators, distributors and retailers.[51] The ERA also assesses the terms and conditions (including prices) offered by owners of monopoly infrastructure to third parties in the electricity industries. It interprets, applies and enforces the Electricity Networks Access Code which governs the operation of these networks.[52]

Australia's electricity generation and use[53]

2.49 The Bureau of Resources and Energy Economics (BREE) estimates that Australia's overall energy consumption in 2010–11 was around 6000 petajoules.[54] Over the past two decades Australia's energy consumption has increased at around two per cent per annum, a slower rate than production, which has been driven by global demand.

---

45 Independent Market Operator (IMO) (WA), *Overview*, available: www.imowa.com.au/wem_overview (accessed 11 October 2012).

46 Department of Finance (WA), *Electricity in WA*, available: www.finance.wa.gov.au/cms/content.aspx?id=15082 (accessed 12 October 2012).

47 Energy Action, *NEM vs. SWIS*, available: www.energyaction.com.au/nem-swis-comparison.html (accessed 14 October 2012).

48 Economic Regulation Authority (ERA) (WA), *2010/11 Annual Performance Report: Energy retailers*, Perth, March 2012, p. 3.

49 IMO, *History of IMO*, available: www.imowa.com.au/history (accessed 12 October 2012).

50 Western Power, *System management*, available: www.westernpower.com.au/retailersgenerators/systemManagement/System_management_.html (accessed 25 October 2012).

51 ERA, *Submission 81*, p. 1.

52 ERA, *Submission 81*, p. 1.

53 Unless otherwise referenced, statistics in this section have been taken from Bureau of Resources, Energy and Economics (BREE), *Energy in Australia 2012*, February 2012.

54 A petajoule is a measure of energy equivalent to 10^{15} joules. One petajoule is the heat energy approximately equivalent to 43 000 tonnes of black coal or 29 million litres of petrol. See BREE, *Energy in Australia 2012*, February 2012, p. xii.

Generation

2.50 In 2010–11, approximately 250 000 gigawatt (GW) hours of electricity was generated in Australia. Most of this electricity was produced using coal, which accounted for almost 70 per cent of total electricity generation.[55]

2.51 Gas is Australia's second largest energy source for electricity generation, accounting for 19 per cent of electricity generation in 2010–11.

2.52 Renewable energy sources accounted for around 10 per cent of electricity generation in 2010–11. Of this generation, hydro accounted for 67 per cent, wind 23 per cent, bioenergy 8 per cent and solar 3 per cent.[56]

2.53 In the five years to 2009–10 Australia's electricity generation capacity has grown steadily from 45 GW to 54 GW. As a result of that and the relatively constant output, capacity utilisation has fallen steadily from 56 to 49 per cent.[57]

2.54 The majority of Australia's electricity generation is supplied by steam plants, using coal or gas, with most of the black coal-fired generation capacity in NSW and Queensland. The largest gas-fired generation capacity is also in Queensland.[58]

> The distribution of clean energy production facilities in Australia reflects the climatic characteristics of different regions. Hydroelectricity capacity in Australia is located mostly in New South Wales, Tasmania, Queensland and Victoria; while wind farms are most abundant in South Australia and Victoria. Almost all bagasse-powered energy facilities are located in Queensland where sugarcane production is located. In contrast, there is a more even distribution of biogas-powered facilities across Australia, as these facilities are mostly based on gas generated from landfill and sewerage.[59]

Distribution

2.55 In 2008–09, the energy generated in the NEM was distributed among the states as follows:

- NSW—38 per cent;
- Queensland—25 per cent;
- Victoria—25 per cent,
- South Australia—7 per cent, and
- Tasmania—5 per cent.[60]

---

55 BREE, *Australian Energy Update 2012,* August 2012, pp 10–12.

56 BREE, *Australian Energy Update 2012,* August 2012, p. 12.

57 BREE, *Energy in Australia 2012*, February 2012, p. 35.

58 BREE, *Energy in Australia 2012*, February 2012, pp 35–36.

59 BREE, *Energy in Australia 2012*, February 2012, p. 52.

60 AEMO, *An introduction to Australia's National Electricity Market*, July 2012, p. 7.

Users

2.56 There were over 10 million electricity consumers in Australia in 2009–10. The number of consumers has grown slightly over the past ten years, increasing from 9.5 million consumers in 2005–06.[61]

2.57 Within the NEM, 88 per cent of consumers (by number) are residential, and around 12 per cent are businesses. However, residential use accounts for only 27.7 per cent of the electricity consumed, with the other major users being:

- commercial—23 per cent;
- metals—18 per cent;
- aluminium smelting—11 per cent;
- manufacturing—9 per cent; and
- mining—9 per cent.[62]

Overview of Australian electricity prices

2.58 Australian household electricity prices remained relatively constant in real terms between 1991 and 2007 (see Figure 2.4). From 2008 onwards, household electricity prices have risen rapidly, with an average national rise of around 40 per cent in real terms over the last three years.[63]

2.59 Price increases have varied between states and territories, however, all have experienced a significant rise in prices since 2007 (Figure 2.5).

2.60 The Australian Bureau of Statistics (ABS) reported that the proportion of real household expenditure on energy is at the same level as a decade ago.[64] Rather, it is the rapid increase that has occurred in recent years that is causing consumer pain. This spike is due to a period of catch-up following prolonged under-investment combined with increased reliability standards.

2.61 An update to the Garnaut Climate Change Review in March 2011 found that:

> While the consumption of electricity makes up a relatively small component of a typical household's expenditure, these price rises are putting pressure on lower income households.[65]

---

61 BREE, *Energy in Australia 2012*, February 2012, p. 35.

62 AEMO, *An introduction to Australia's National Electricity Market*, July 2010, p. 4.

63 DRET, *Fact Sheet Electricity Prices*, August 2012, available: www.ret.gov.au/Department/Documents/clean-energy-future/ELECTRICITY-PRICES-FACTSHEET.pdf (accessed 15 October 2012), p. 2.

64 Australian Bureau of Statistics (ABS), *Household energy use*, September 2012, available: http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4102.0Main+Features10Sep+2012 (accessed 29 October 2012).

65 Garnaut Climate Change Review, *Update Paper 8: Transforming the electricity sector*, March 2011, available: www.garnautreview.org.au/update-2011/update-papers/up8-transforming-electricity-sector.pdf (accessed 15 October 2012), p. 6.

Figure 2.4: Electricity price indices for Australian households and businesses, 1981–2011[66]

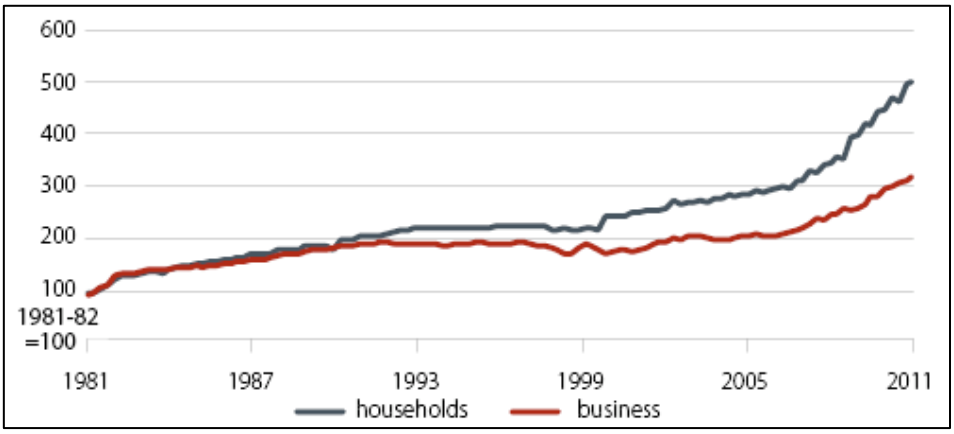
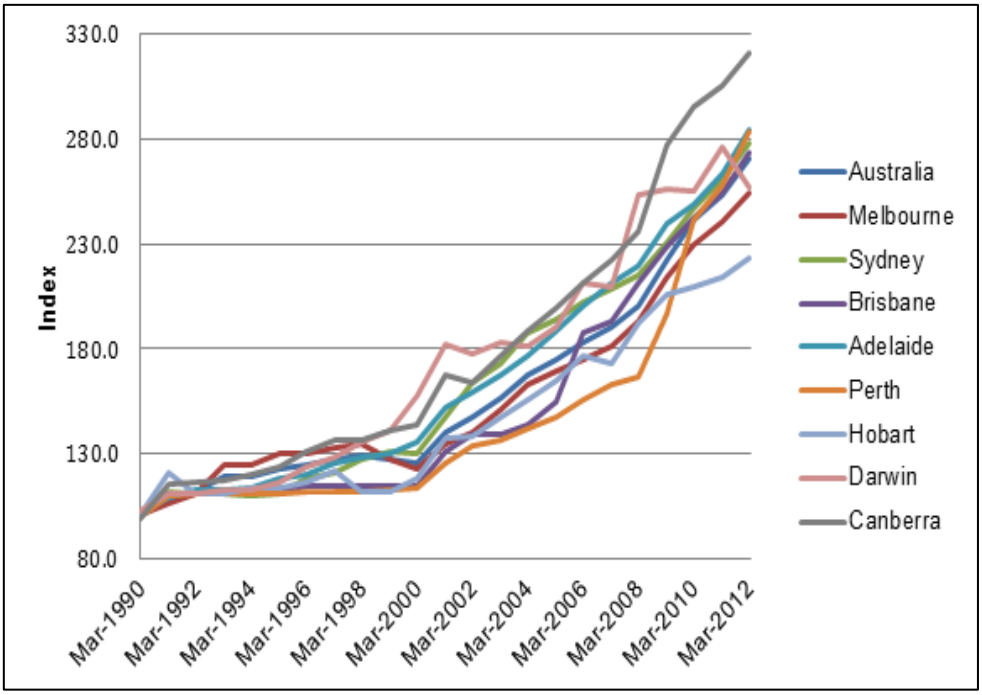


Figure 2.5: Australian capital cities electricity price indices[67]



2.62 According to BREE, average wholesale electricity prices in the NEM have moderated since an increase in 2007 due to record average demand and drought conditions.[68] However, in contrast to wholesale prices, retail electricity prices have increased sharply.[69]

66 Reproduced from BREE, *Energy in Australia 2012*, August 2012, p. 32.

67 Reproduced from Energy Supply Association of Australia (ESAA), *Fact Sheet Electricity Price Growth*, p. 1.

68 BREE, *Energy in Australia 2012*, February 2012, p. 42.

69 BREE, *Energy in Australia 2012*, February 2012, p. 42.

Overseas comparison

2.63 BREE has calculated that, using a straight comparison of currency exchange rates, Australian household electricity prices (cents per kilowatt hour) in 2011 were higher than the Organisation for Economic Co-operation and Development (OECD) average.[70]

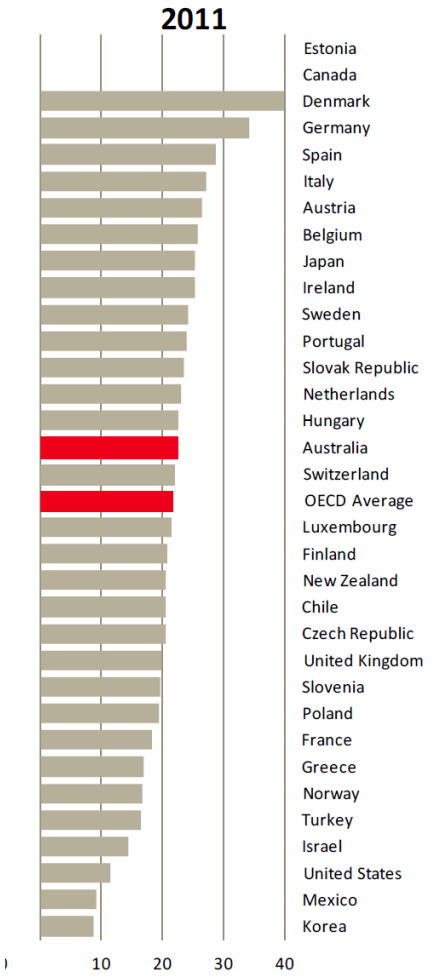
2.64 BREE pointed out, however, that by using a more meaningful comparison of purchasing power parity (what can actually be bought with money in different currencies) shows that Australian household electricity prices are well below the OECD average.[71]

70 DRET, *Answer to question on notice*, 25 September 2012, p. 2.

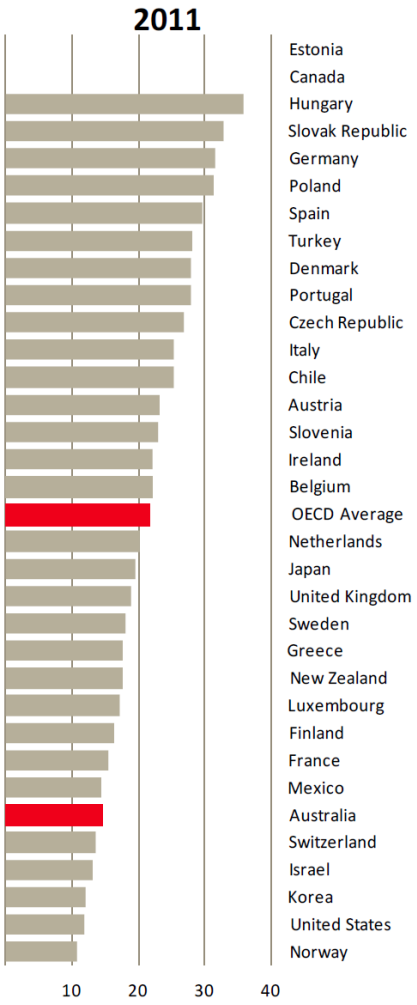
71 DRET, *Answer to question on notice*, 25 September 2012, p. 2.

Figure 2.4: Household electricity prices in OECD economies, 2010[72]

Household electricity prices, (cents per kilowatt hour)



Household electricity prices, (PPI measure)



Context of the inquiry

2.65 Electricity is an essential resource for almost all Australian households and businesses. Rises in the cost of electricity impact significantly on household budgets, increase the cost of living and increase the costs for businesses to operate.

2.66 Over recent years the cost of electricity has increased substantially with the average household electricity bill, excluding the cost of the carbon price, going up by at least 48 per cent in the past four years.[73]

2.67 A number of government and independent reviews have taken place over the last two years to identify the reasons for rises in electricity prices and to recommend

72 DRET, *Answer to question on notice*, 25 September 2012, pp 2–4.

73 Prime Minister Julia Gillard, speech to the Energy Policy Institute of Australia, *Electricity Prices: The Facts*, 7 August 2012, p. 2.

policy changes to address these increases (some of these reviews are listed in the following section). At the end of 2012, the Commonwealth government is due to release a Final Energy White Paper intended to establish a 'comprehensive strategic policy framework to guide the further development of Australia's energy sector'.[74]

2.68 Over the next few years, the AER will also embark on a new round of determinations for electricity networks in the NEM.[75] These determinations, which occur on a cycle of approximately every five years, will allow the AER to scrutinise and regulate the amount of revenue for network business in future years. These determinations are important to electricity prices as network charges constitute a significant part of the cost of electricity.

2.69 In a speech to the Energy Policy Institute of Australia on 7 August 2012, the Prime Minister, the Hon Julia Gillard, argued that the time was right to 'get a plan in place to prevent unnecessary price rises in [the] future'.[76] The Prime Minister stated that:

> The inefficiencies that exist in the current system cannot be ignored.
>
> Even decisions made this year will reap benefits over several years to come—so we must get on with the job now.
>
> I want real decisions this year to guide price determinations beginning next year.[77]

2.70 The Prime Minister advised that the December 2012 COAG meeting will consider reforms to the Australian energy market.[78]

Reviews of the electricity market

2.71 In addition to this inquiry, there are a number of other reviews of the electricity market currently underway or recently completed. These reviews include:

- The Productivity Commission's investigation into opportunities to benchmark electricity network businesses to improve efficiency and examine interconnection investment.[79] The inquiry commenced in January 2012, with a draft report released on 18 October 2012. The final report is expected to be handed down by April 2013.

---

74 DRET, *Draft Energy White Paper*, available: www.ret.gov.au/energy/facts/white_paper/draft-ewp-2011/Pages/Draft-Energy-White-Paper-2011.aspx (accessed 14 October 2012).

75 AER, *State of the energy market: 2011*, Australian Competition and Consumer Commission (ACCC), Canberra, 2011, p. 59.

76 Prime Minister Julia Gillard, speech to the Energy Policy Institute of Australia, *Electricity Prices: The Facts*, 7 August 2012, p. 4.

77 Prime Minister Julia Gillard, speech to the Energy Policy Institute of Australia, *Electricity Prices: The Facts*, 7 August 2012, p. 8.

78 Prime Minister Julia Gillard, speech to the Energy Policy Institute of Australia, *Electricity Prices: The Facts*, 7 August 2012, p. 8.

79 Productivity Commission, *Electricity Network Regulation*, available: www.pc.gov.au/projects/inquiry/electricity (accessed 10 October 2012).

- The AEMC's Transmission Frameworks Review is considering how generation and transmission network investment and operating decisions could be better aligned to deliver efficient outcomes.[80] The AEMC's final report is to be delivered to SCER by 31 March 2013.[81]
- The AEMC's *Power of Choice* review is considering ways of enabling consumers to have more control of their electricity use and ways to manage electricity consumption through demand management in the NEM. A draft report was released on 6 September 2012; final recommendations will be presented to SCER on 16 November 2012.[82]
- The AEMC's Review of the Distribution Reliability Outcomes and Standards is assessing the balance between ensuring sufficient investment in distribution networks to maintain reliability and pricing outcomes for consumers.[83] An issues paper for public consultation was published on 28 June 2012.[84] A draft report on the merits of moving to a nationally consistent framework for delivering and reporting on distribution reliability outcomes will be published in November 2012.[85]
- The Australian Government's Final Energy White Paper which reviews Australia's future energy needs to 2030 and defines a policy framework to guide further development of the energy sector.[86] The draft was released for public comment on 11 December 2011. Following a period of public consultation the final white paper is to be released in late 2012.[87]

---

80 AEMC, *Market reviews: Transmission frameworks review*, available: www.aemc.gov.au/market-reviews/open/transmission-frameworks-review.html (accessed 10 October 2012).

81 AEM, *Market reviews: Transmission frameworks review*, available: www.aemc.gov.au/market-reviews/open/transmission-frameworks-review.html (accessed 10 October 2012).

82 AEMC, *Power of choice—giving consumers options in the way they use electricity draft report*, 6 September 2012, p. 16.

83 AEMC, *Review of distribution reliability outcomes and standards*, available: www.aemc.gov.au/market-reviews/open/review-of-distribution-reliability-outcomes-and-standards-national-workstream.html (accessed 10 October 2012).

84 AEMC, *Review of distribution reliability outcomes and standards*, available: www.aemc.gov.au/market-reviews/open/review-of-distribution-reliability-outcomes-and-standards-national-workstream.html (accessed 10 October 2012).

85 AEMC, *Review of electricity distribution reliability outcomes and standards*, information sheet, 31 August 2012, p. 3.

86 DRET, *Draft Energy White Paper 2011: Strengthening the foundations for Australia's energy future*, Canberra, December 2011, available: www.ret.gov.au/energy/Documents/ewp/draft-ewp-2011/Draft-EWP.pdf (accessed 11 October 2012), p. iii.

87 DRET, *Draft Energy White Paper 2011*, available: www.ret.gov.au/energy/facts/white_paper/draft-ewp-2011/Pages/Draft-Energy-White-Paper-2011.aspx (accessed 11 October 2012).

- The SCER Expert Panel Review of the Limited Merits Review Regime assessed whether the appeals process against decisions made by the AER is providing an appropriate balance between the competing interests of all stakeholders, including consumers.[88] The review commenced on 7 March 2012 and was completed on 30 September 2012.[89]
- On 31 May 2011 Update Paper 8 to the Garnaut Climate Change Review was released. The update paper addressed developments across a range of subjects including the electricity sector.[90]

2.72 At its meeting of 25 July 2012, COAG also requested that its Taskforce on Competition and Regulatory Reform investigate and report to COAG in late 2012:

> …any additional action required to deliver a regulatory framework that promotes a competitive retail electricity market, including appropriate support for vulnerable customers, and efficient investment.[91]

2.73 COAG has also expressed concern over 'recent substantial electricity price increases arising from factors including increases in transmission and distribution charges'.[92] COAG requested that SCER, as the body with primary responsibility for energy reform, 'focus current reviews of market regulation in the interconnected market on achieving efficient future investment which does not result in undue price pressures on consumers and business'.[93] SCER will report to COAG at its December 2012 meeting and is expected to offer a package of energy market reforms for consideration.[94]

Committee comment

2.74 In light of the numerous review processes currently underway or recently completed, the upcoming round of network determinations by the AER and the Commonwealth's anticipated policy blueprint for Australia's energy sector, the

---

88 SCER, *Limited Merits Review*, available: www.scer.gov.au/workstreams/energy-market-reform/limited-merits-review/ (accessed 10 October 2012).

89 Professor G. Yarrow, the Hon. M. Egan and Dr J. Tamblyn, *Review of the Limited Merits Review Regime: Stage Two Report*, 30 September 2012, available: https://scer.govspace.gov.au/files/2012/10/Review-of-the-Limited-Merits-Review-Stage-Two-Report.pdf (accessed 10 October 2012).

90 Garnaut Climate Change Review, *Update paper 8: Transforming the electricity sector*, 29 March 2011, available: www.garnautreview.org.au/update-2011/update-papers/up8-key-points.html (accessed 11 October 2012).

91 COAG, *Communique Meeting, 25 July 2012*, available: www.coag.gov.au/sites/default/files/FINAL%20COAG%20Communique%2025%20July%202012.pdf (accessed 10 October 2012), pp 2–3.

92 COAG, *Communique Meeting, 25 July 2012*, p. 2, available: www.coag.gov.au/sites/default/files/FINAL%20COAG%20Communique%2025%20July%202012.pdf (accessed 10 October 2012).

93 COAG, *Communique Meeting, 25 July 2012*, p. 2.

94 DRET, *Submission 61*, p. 5.

committee notes there is presently a window of opportunity for reform to the electricity market.

2.75 The committee believes that the timing of its inquiry is timely and an opportunity to take advantage of the extensive work already done examining the NEM. The committee has crafted its recommendations in a way it hopes is not inconsistent with this work and expects, therefore, that its recommendations—together with the inertia generated by the other reviews—will result in real and lasting change to the electricity market for the benefit of Australian consumers.

Part II
Price setting and regulation

Chapter 3

Price setting and key causes of electricity price increases

3.1 This chapter provides a brief summary of how electricity prices are set and outlines a collection of the wide range of factors contributing to electricity price rises that have been put to the committee. At the end of the chapter, the committee draws some conclusions about factors contributing to electricity prices increases. The following chapter covers some of the more serious reasons arising from regulatory arrangements in more detail.

Price setting

3.2 There is a mixture of market and regulated price outcomes across the wholesale, transmission and distribution networks and retail parts of the Australian electricity sector.

3.3 Wholesale prices paid to electricity generators are a result of the National Electricity Market (NEM) which provides a highly competitive, computerised wholesale market on the east coast of Australia. All energy generators go into a pool and retailers bid. There are five interconnected trading regions that align closely with state boundaries.[1] Separate arrangements exist for Western Australia and the Northern Territory (see Chapter 2).

3.4 There is base pricing and spot pricing. The base pricing tends to reflect the long run cost of coal based electricity generation under quiet and stable market conditions. Prices can separate in different regions depending on demand variations across regions. Temperature fluctuations can lead to significant surges in peak demand, which can lead to large spikes in the spot prices which are the settlement prices for the electricity at particular points in time. Retailers use separate contracts including options and hedging to manage risks arising from spikes in spot prices.[2]

3.5 The pricing of electricity transmission and distribution network services is regulated due to the natural monopoly that exists in most cases. The Australian Energy Regulator (AER) makes determinations on the value of regulated asset bases and the rate of return allowed, based on the demand and investment forecasts provided to them by network businesses.[3]

3.6 Demand and investment forecasts for electricity networks are based in part on reliability standards set by the state regulators. Network assets are very long-life assets and the consequences of under-building assets can be catastrophic. Consumers value reliability very highly, but may not wish to pay for this.

---

1 Australian Energy Market Operator (AEMO), *An Introduction to Australia's National Electricity Market*, July 2010, p. 5.

2 AEMO, *An Introduction to Australia's National Electricity Market*, July 2010, p. 20.

3 Australian Energy Regulator (AER), *State of the Energy Market 2011*, p. 7.

3.7 Some concerns have been raised that current regulatory arrangements have made it too easy for electricity network owners to over invest and take increased profits from guaranteed revenue streams.[4] In contrast, there is a genuine need to replace ageing infrastructure and the costs of capital required to make the investments have increased since the global financial crisis.[5] Further information on what investment has been occurring is available from the AER and the Energy Networks Association (ENA).[6]

3.8 The relevant state or territory regulator sets price caps in New South Wales (NSW), Victoria and South Australia and revenue per customer caps in Queensland, Tasmania and the Australian Capital Territory (ACT). Network service providers (NSPs) recover their price or revenue cap by passing that on to retailers and thereby onto consumers.

3.9 Electricity retailers must pay both the wholesale price and network charges for electricity and therefore pass those onto consumers, along with retail charges and costs as approved by different regulators in states and territories. Victoria is an exception as it has deregulated its retail electricity market and prices.[7]

Comparison to other sectors

3.10 Electricity is not alone: prices have also risen for other utilities as shown in Figure 3.1. The rise in gas, water and sewerage prices has been similar to the rise in electricity prices.

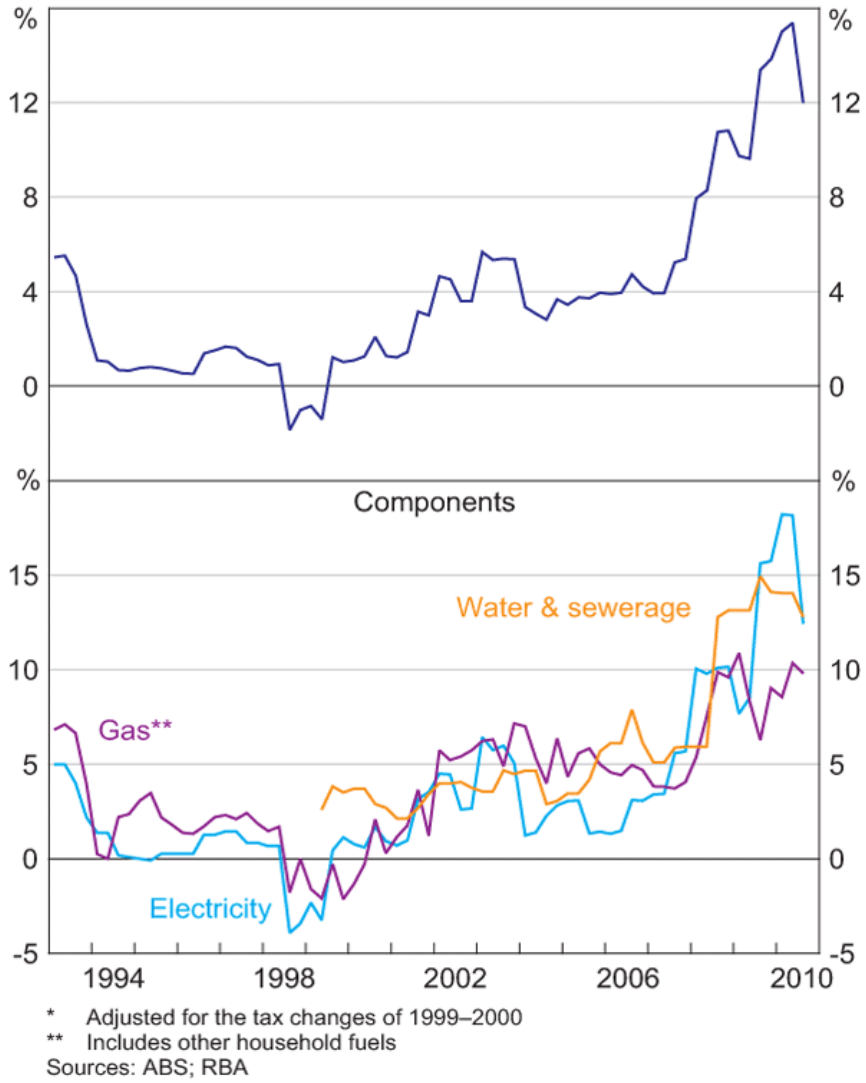
4 AER, *State of the Energy Market 2011*, p. 7.

5 Plumb, M. and Davis, K., Reserve Bank of Australia Bulletin, *Developments in Utilities Prices*, December Quarter 2010.

6 See for example AER, *State of the Energy Market 2011*, p. 6 and Energy Networks Association (ENA), Fact Sheet, *Why are energy network costs rising across Australia?*

7 Reserve Bank of Australia, *How are electricity prices set in Australia?*, document released under FOI: *Factors contributing to household cost of living pressure 101115*, released 31 March 2011, p. 1.

Figure 3.1: Utilities price inflation[8]



Key causes of electricity price increases

3.11 A wide range of possible causes for electricity prices have been raised. In this section, the committee is mainly focussing on residential prices, however, business prices are mentioned briefly in relation to the separate business and retail prices. Professor Ross Garnaut informed the committee that:

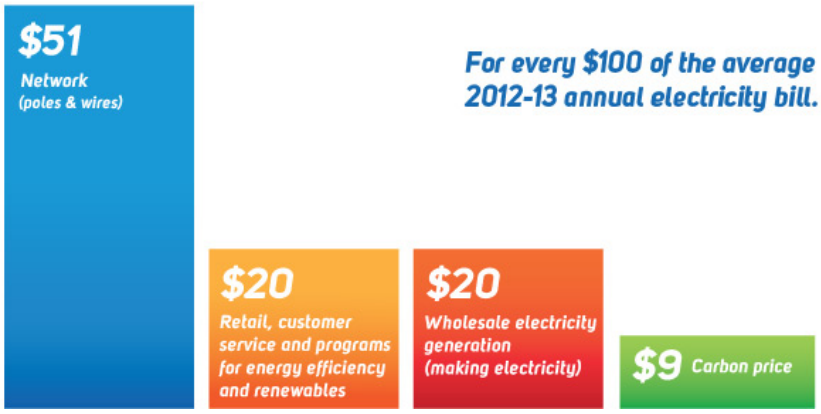
> In my view, there was no good public policy reason for this large increase in prices. It happened because of the way we chose to regulate prices. Contributions to the price increases were made across transmission, distribution and retail. Generation has not been contributing much to the increases. Indeed, if you include electricity prices at a wholesale level—that is, out of the generators, including the carbon price—they are lower in real terms in October 2012 than in 2006-07. So the huge increases in electricity

8 Reproduced from Plumb, M. and Davis, K., Reserve Bank of Australia Bulletin, *Developments in Utilities Prices*, December Quarter 2010.

prices in Australia over the past half-dozen years are the result of what has happened in pricing of transmission, distribution and retail margins.[9]

3.12 The contributions to electricity prices vary across different parts of the electricity supply system, as shown in Figure 3.2.

Figure 3.2: Components of an average Australian household electricity bill in 2012–13[10]



3.13 The Australian Energy Market Commission (AEMC) has estimated that nationally, residential electricity prices are projected to increase by 37 per cent in nominal terms. In real terms, this is an increase of 22 per cent. The contributions to future price increases across components of the electricity industry are estimated to be:[11]

Transmission	6.0 per cent
Distribution	33.6 per cent
Wholesale	40.2 per cent
Retail	12.1 per cent
Carbon Tax	5.7 per cent
Feed-in tariff	2.8 per cent
Large-scale Renewable Energy Target (LRET)[12]	3.8 per cent
Small-sale Renewable Energy Scheme (SRES)[13]	-0.8 per cent
Other state based schemes	2.3 per cent

3.14 In addition to their own usage levels, the electricity price increases incurred by consumers are also influenced by factors including electricity markets and market

9 Professor Ross Garnaut, *Proof Committee Hansard*, 9 October 2012, pp 1–2.

10 Reproduced from DRET, Fact Sheet, *Electricity Prices*, August 2012, p. 1.

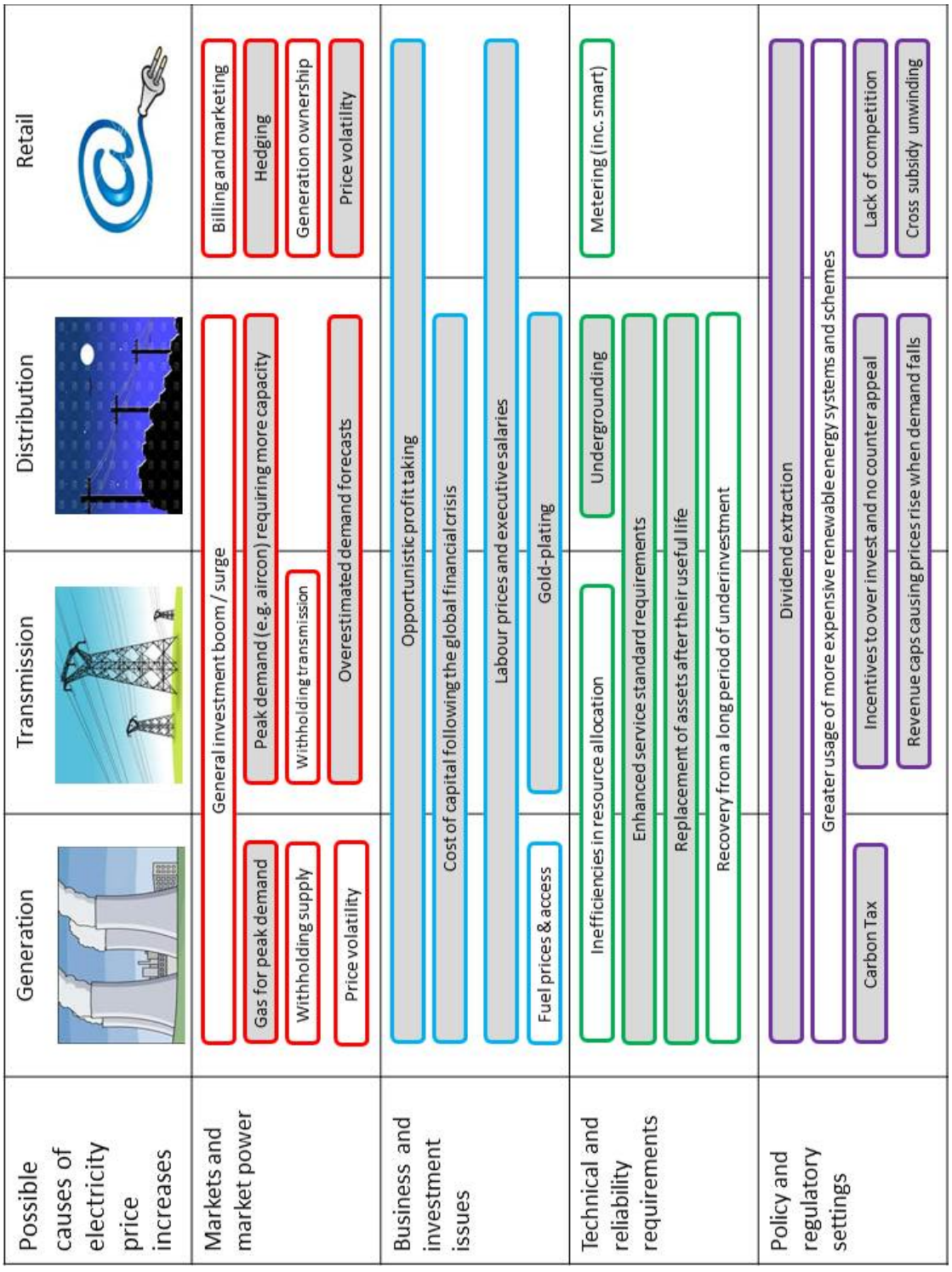
11 Australian Energy Market Commission (AEMC), *Retail electricity price estimates 2010-2011 to 2013-2014*, December 2011, p. 2.

12 Large-scale Renewable Energy Target, available: http://ret.cleanenergyregulator.gov.au/About-the-Schemes/Large-scale-Renewable-Energy-Target--LRET-/about-lret.

13 Small-scale Renewable Energy Scheme, available: http://ret.cleanenergyregulator.gov.au/About-the-Schemes/Small-scale-Renewable-Energy-Scheme--SRES-/about-sres.

power, business and investment issues, technical and reliability requirements, and policy and regulatory settings. The discussion in the rest of this chapter covers some of the possible causes of electricity price rises that have been raised with the committee and are grouped in Figure 3.3.

Figure 3.3: Possible contribution to electricity prices



Markets and market power

3.15 The committee was informed of a range of market and market power factors that may contribute to electricity prices, including demand, demand forecasts, an investment surge, changes in peak demand, wholesale prices, lack of retail competition, cross-ownership, hedging, billing and marketing. The following sections briefly summarise each of those potential contributions to electricity prices across the generation, transmission, distribution and retail components of the electricity industry.

3.16 Where there is sustained abuse of market power, the regulator has some powers to step in, in some circumstances, but generally the regulator must act by taking the relevant companies to court.[14]

Investment surge

3.17 The surge in investment in the electricity industry is coinciding with the well-known surge in business investment across the economy more generally. Similarly in the late 1970s and early 1980s the surge in investment in the electricity industry coincided with the more general surge in investment that also occurred at that time.[15] Professor Stuart White elaborated:

> This has been a big issue in network assets. We tend to have cycles of significant network investment and then cycles where we see less.[16]

Demand and demand forecasts

3.18 The National Generators Forum (NGF) informed the committee that in recent years overall demand for electricity has been falling:

> [O]ver the past five years, electricity demand across the national electricity market has been declining. It has declined by around 3½ per cent over that time frame. That is due to a range of reasons—notably, the increase in the retail price of electricity; declining industrial demand; reduced manufacturing activity; energy efficiency initiatives; and solar PV systems.[17]

3.19 Noting that demand forecasts are central to price and revenue caps in the regulated parts of the industry, concerns have been raised about the regulatory decisions that have been based on forecasts of rising demand, given that demand is actually falling. The AER noted its approach to considering demand forecasts provided by electricity businesses:

---

14 See for example AER, *AER institutes proceedings against Queensland generator Stanwell*, available: http://www.aer.gov.au/node/16004 (accessed 20 September 2012).

15 See for example Figure 8 and Philip Lowe, Deputy Governor, Reserve Bank of Australia, *The Changing Structure of the Australian Economy and Monetary Policy*, Graph 2.

16 Professor Stuart White, Director Institute for Sustainable Futures, University of Technology Sydney (UTS), *Proof Committee Hansard*, 25 September 2012, p. 27.

17 Mr Tim Reardon, Executive Director, National Generators Forum (NGF), *Proof Committee Hansard*, 9 October 2012, p. 38.

> We do receive demand forecasts from the business. We challenge those. I think it would be unusual for us to accept the demand forecasts that have been put in front of us, and there have been a range of reasons for that. So that power currently exists, and we would continue to examine those demand forecasts and also to look to external advice for confirmation of an appropriate demand forecast.[18]

3.20 The AER also pointed out the forecasts for peak and aggregate demand have different impacts of electricity prices:

> We probably ought to recognise that there are two categories of demand forecast, and it is important to recognise the distinction. One is peak demand, and it is peak demand that drives investment. The other is aggregate demand, and aggregate demand is important for recovering costs, because you recover over the total demand, and that determines prices.[19]

3.21 Energex explained to the committee how the falling demand in recent years had impacted electricity prices.

> More recently, deteriorating network utilisation as total energy consumption has moderated is forcing up network prices as the costs of providing, operating and maintaining the network are spread over a lower consumption base whilst maximum demand remains at record levels.[20]

Peak demand

3.22 The committee noted information suggesting that peak demand has increased due to a greater deployment and use of air conditioners and other appliances in recent years requiring more transmission and distribution capacity that is only used a small fraction of the time.[21] The Productivity Commission noted that 'some 25 per cent of retail electricity bills are required to meet around 40 hours of critical peak demand each year'.[22] The problems of peak demand were echoed by the Alternative Technology Association (ATA):

> The current state of rising electricity prices is primarily driven by a failure to manage peak demand, both at a network and a generation level. The inability or reluctance to properly engage the demand side of the market has led to over investment in and inefficient operation of the electricity system as a whole.[23]

---

18 Mr Andrew Reeves, Chairman, AER, *Proof Committee Hansard,* 27 September 2012, p. 3.

19 Mr Edward Willett, Board Member, AER, *Proof Committee Hansard,* 27 September 2012, p. 3.

20 Mr Darren Busine, Acting Chief Executive Officer, Energex Limited, *Proof Committee Hansard,* 3 October 2012, p. 27.

21 Energy Networks Australia, *Why are energy network costs rising across Australia?*, p. 2.

22 Productivity Commission, *Draft Report: Electricity Network Regulatory Frameworks,* October 2012, p. 2.

23 Mr Damien Moyse, Energy Projects and Policy Manager, Alternative Technology Association (ATA), *Proof Committee Hansard,* 3 October 2012, p. 1.

3.23 Other submitters and witnesses stated '[p]eak demand is a real issue'[24] and:

> Our key messages are that network costs and costs of peak demand are the single biggest drivers of rising electricity prices—we recognise that—and that energy consumers, from our point of view, and business consumers want reform.[25]
>
> * * *
>
> [Another] driver is the cost of supplying power for what we call peak demand, which is those five to 10 days a year. On the mainland of Australia they are the hot days; the summer peaks are the clear peaks. Around 20 to 25 per cent of the generation and transmission infrastructure is designed to supply power for those peak days. Bringing those peaks down is a critical opportunity to reduce the cost of energy to households and businesses in Australia.[26]
>
> * * *
>
> Peak demand has surged in recent times with the dramatic growth in air conditioning load driving network companies to invest for the short summer peak…[27]

3.24 While investment in networks to support peak demand is a glaring issue, the committee was informed that some care is needed in assessing the impact of both generation and network investment as indicated by Grid Australia:

> It is possible you could increase generation capacity by 25 per cent and have no transmission increase if that generation is located at points where there is spare capacity in the network. If somebody wants to make a development and pay for a development that is, for example, remote or where there is limited capacity and you need to increase it, then that may drive costs. It really depends on where the generation connects and what sort of capacity there is at any point in the network. It is quite a complex answer.[28]

3.25 Another impact of peak demand is the need for generation systems that can switch on quickly and be available to meet rapidly rising demand on a given day, however a downside is that those systems may then be idle and not directly earning a return for significant periods:

---

24 Mr Cameron O'Reilly, Chief Executive Officer, Energy Retailers Association of Australia (ERAA), *Proof Committee Hansard,* 25 September 2012, p. 21.

25 Dr Peter Burn, Director, Public Policy, Australian Industry Group (Ai Group), *Proof Committee Hansard,* 25 September 2012, p. 42.

26 Mr Matthew Warren, Chief Executive Officer, ESAA, *Proof Committee Hansard,* 27 September 2012, p. 43.

27 CEC, *Submission 74,* p. 2.

28 Mr Peter McIntyre, Chairman, Grid Australia, *Proof Committee Hansard,* 25 September 2012, p. 41.

> While difficult to quantify with precision, the increase in peak to average demand between 1997 and 2010 is estimated to have required an additional 6 300 MW of (peak) generation capacity, compared with what would otherwise have been the case…The additional peaking capacity represents around 13 per cent of current generation capacity, and while it is critical in terms of meeting peak summer demand during extremely hot periods, it sits idle for the majority of the year. (It represents an investment of around $6.2 billion, which is around 6 per cent of total capital investment in Electricity supply over the period.) [29]

3.26 The committee also heard a different point of view, suggesting that peak demand is not increasing and that demand forecasts predicting an increase are inaccurate.[30] Data from the AER indicates that over the last four years (that is, since 2008–09) the level of peak demand is flat or falling for bother summer and winter in states serviced by the NEM.[31]

Wholesale prices

3.27 Changes in wholesale prices were raised with the committee on a number of occasions. Much of the evidence presented to the committee suggested there had been some downward pressure on wholesale prices, as the following example indicates.

> [W]holesale electricity prices in the national electricity market over the past 14 years. It shows the nominal electricity price. What you can see is that the price has remained almost constant over that period of time. There was a period during 2008 when, principally due to the drought and the hot weather conditions, the prices increased. But, generally speaking, prices have been very flat and stable. Today the prices are around 50 per cent lower than what they were in the mid to late 1990s when electricity generation was owned and operated by state governments. I should say that that excludes the impact of the carbon price.[32]

3.28 It has been suggested that some electricity generators may be able to withhold electricity supply capacity in order to have a material impact on price.[33] Professor Alan Pears AM cited some other information:

> There has been evidence over many years that some generators have "gamed" the system by limiting generation capacity at times, to push up prices. ABARE (2002), drew attention to this and estimated the cost to the economy of this practice at between $81 and $412 million per annum. Recently media reports have raised more alleged examples…The structure

---

29 Topp, V. and Kulys, T., Productivity Commission staff working paper, *Productivity in Electricity, Gas and Water: Measurement and Interpretation.* March 2012, p. 48.

30 Mr Bruce Robertson, Manning Alliance, *Submission 33.*

31 AER, *Seasonal peak demand occurrence (region)*, available: http://www.aer.gov.au/node/12051, (accessed 22 October 2012).

32 Mr Tim Reardon, Executive Director, NGF, *Proof Committee Hansard*, 9 October 2012, p. 38.

33 Major Energy Users Inc. Comments on the AEMC Technical Paper provided by NERA on *Estimating Long Run Marginal Cost in the National Electricity Market*, February 2012, p. 4.

> of the market, in which all bidders on the spot market are paid the price bid by the highest successful bidder, creates an incentive to "game".[34]

3.29 This issue has created sufficient concern among some stakeholders that a formal rule change through the Australian Energy Market Commission (AEMC) has been sought by the Major Energy Users Inc (MEU). The rule change request seeks to constrain the perceived exercise of market power by generators in the NEM. The MEU's concerns included:

> The MEU considers that during periods of high demand when the system is operating normally, some large generators do not face effective competition and have the ability and incentive to use market power to increase the wholesale electricity spot price.[35]

3.30 In its draft determination, the AEMC concluded that:

> Based on the AEMC's analysis, consultant analysis and stakeholder feedback to the consultation paper, directions paper, public forum and technical paper, there is insufficient evidence of the existence of substantial market power to warrant the introduction of a rule that restricts the dispatch offers of generators in the National Electricity Market.[36]

3.31 Similarly, it has also been noted that it may be possible for owners of transmission rights to withhold transmission rights from the market, effectively reducing the capacity of the congested interface.[37]

Retail – billing and marketing

3.32 Concerns about the lack of competition in the retail component were also raised as a contributor to electricity prices:

> In the case of retail, the problem is inadequate competition, and the remedies are the standard competition policy remedies. So I think we have the types of mechanisms that can deal with issues there.[38]

3.33 Retailer's indicated that in their view they have often received a large share of the blame for price increases even though they only contribute a small fraction of the price rise:

> As retailers are the billing agent for the entire electricity industry value chain, we bear much of the consumer backlash over rising electricity prices while the retail component of the price rises has been very low.

---

34 Professor Alan Pears AM, *Submission 15*, p. 5.

35 AEMC, *Information Sheet: Potential generator market power consultation paper,* April 2011, p. 1.

36 AEMC, *Information Sheet: Potential generator market power draft determination,* June 2012, p. 1.

37 Joskow, P., and Tirole, J., *Transmission Rights and Market Power on Electric Power Networks II: Physical Rights*, December 1998, p. 4.

38 Professor Ross Garnaut, *Proof Committee Hansard,* 9 October 2012, p. 1.

> While retailers have not driven the price rises, we have to deal with the customer backlash and with the increased customer payment difficulties they cause while carrying the credit risk for the entire industry as we must meet our payments to the market generators and networks. Retailers also believe they have been targeted by the political and regulatory bodies in response to rising prices even though we have not caused them.[39]

3.34 The committee also noted that changes to billing, marketing and metering systems have contributed to retail prices increases in NSW of around one per cent from July 2012.[40] The committee heard that structural issues may remain for retail competition in the electricity sector:

> But certainly a very large part of the price increases has really been market failure in a whole lot of areas, in the way retail competition is structured, in the way networks are regulated—and that is the work ahead of us. It is not necessarily just keeping prices down, but it is getting prices to work in an effective, efficient and equitable way.[41]

Retail – generation cross-ownership and hedging

3.35 The level of cross-ownership between retailers and generators in the industry has been raised as a potential conflict of interest that may drive price increases. The ATA informed the committee that:

> [I]f we are talking about why the lower wholesale prices have not been passed through to the retail level, that is because of hedge contracts that exist—and they are projected out for two or three years, potentially more—between retailers and generators, often retailers that own their own generation, and so it takes some time, as we have seen up until yesterday, with the regulator's decision, for the reduction in the spot market price to flow through to retail bills, but that does happen. [42]

3.36 The Energy Retailers Association of Australia (ERAA) responded to the concerns about cross ownership, stating:

> In no state is cross-ownership at such a level that the ACCC has indicated any concerns about market concentration to date. It comes down to those risks. When you have a wholesale electricity market that varies in price anywhere from a negative price to $12,500 a megawatt hour in half-hour increments, it is a highly risky business. When you have a large retail customer base where your opportunity to vary your retail prices in line with movements in the wholesale price is very restricted by price regulation,

---

39 Mr Cameron O'Reilly, Chief Executive Officer, ERAA, *Proof Committee Hansard,* 25 September 2012, p. 19.

40 NSW Independent Pricing and Regulatory Tribunal (IPART), Fact Sheet, *Changes in regulated electricity prices from 1 July 2012,* p. 3.

41 Dr Iain MacGill, Joint Director (Engineering), Centre of Energy and Environment Markets, University of New South Wales, *Proof Committee Hansard,* 25 September 2012, p. 27.

42 Mr Damien Moyse, Energy Projects and Policy Manager, ATA, *Proof Committee Hansard,* 3 October 2012, pp 7–8.

> then obviously one of the things you do as a natural hedge management strategy, a risk management strategy, is to have your own forms of generation in case they are required in peak periods.[43]
>
> Wholesale market prices change in half-hour increments and can vary in price anywhere from zero, or even a negative price, to $12½ thousand a megawatt hour. Retailers must sell at regulated or their notified prices so it is retailers, not consumers, who bear the risk in a volatile wholesale market.[44]

3.37 The ATA also noted that volatility in market prices can drive very expensive hedging contracts, which ultimately impact the costs of electricity to consumers:

> [O]ne reason is simply the price volatility in the market. The National Electricity Market has an enormously high cap, $13,000 a megawatt hour during peak times, and there is significant price volatility, particularly during peak times, which is driven by our failure to manage that peak. That leads, by any normal economic theory, to significant amounts of hedging and costly hedging, because the retailers have to manage their risk in terms of whether they have to dip into that spot market and pay those high prices.[45]

3.38 The committee heard that the volatility in price can be specific to particular regions. The AEMC noted South Australia is an example of such localised volatility in prices:

> One of the characteristics of the South Australian wholesale market is that although average prices have tended to converge, South Australian prices tend to be more volatile than those in other jurisdictions. In fact, we have had an average over a week where at one stage the wholesale price was negative. That volatility is a risk factor which when you are contracting at the wholesale level tends to increase the costs of contracting—there is a risk margin in order to manage that volatility.[46]

Business issues

3.39 The committee was informed of a range of business issues and factors that may contribute to rises in electricity prices, including profit taking, cost of capital, labour costs, commodity prices and other supply issues. The following sections briefly summarise each of those potential contributions to electricity prices across the generation, transmission, distribution and retail components of the electricity industry. Investment issues are discussed in the later section on gold-plating.

---

43 Mr Cameron O'Reilly, Chief Executive Officer, ERAA, *Proof Committee Hansard,* 25 September 2012, p. 19.

44 Mr Cameron O'Reilly, Chief Executive Officer, ERAA, *Proof Committee Hansard,* 25 September 2012, p. 19.

45 Mr Damien Moyse, Energy Projects and Policy Manager, ATA, *Proof Committee Hansard,* 3 October 2012, pp 7–8.

46 Mr John Pierce, Chairman, AEMC, *Proof Committee Hansard,* 25 September 2012, p. 17.

Profit taking

3.40 Many factors across the electricity industry have been noted as possible causes of price increases but there is one reason that really stands out to households: profit taking. The Australian Bureau of Statistics (ABS) dataset 8155 on industry performance indicates that operating profit before tax in the electricity industry increased from $5.4 billion in 2007–08 to $9 billion in 2010–11, an increase of 67%.[47] In the same time period electricity prices rose by over 40%.[48]

3.41 Whether those increased profits are coincidental or opportunistic profit taking is hard to determine. Mr Nino Ficca of SP AusNet responded to questions about profit taking, stating that:

> Our profitability has been fairly consistent. Investors in network businesses do not look for disproportionate profits, they look for very predictable and very stable outcomes. I do not think there has been any disproportionate profitability—in our sector anyway. It is very much steady and long-term predictable outcomes. On the cost side, our cost of equity has gone up substantially post-GFC. Equity markets are very tough at the moment, debt markets are very tough at the moment and we need to maintain our obligations both to safety and to reliability from our networks perspective. There has been that tension. I can say for our business, our profit was flat last year. We had no increase—I think it was 0.8 per cent over the last year. I do not know, as a private sector business, that our profits have been growing at anything other than what you would expect in a normal sense.[49]

Cost of capital

3.42 The cost of capital has increased significantly following the global financial crisis. The AER has approved an increase in allowed returns on investment capital of around 1.9 per cent from 2004–05 to 2008–09. The committee noted that each one per cent increase has been estimated to imply an additional $780 million in interest payments that are passed on to consumers.[50] Ergon and Energex described their experiences regarding the cost of capital:

> When you look at all our modelling, the major influence on costs and price at the end of the day is cost of capital. Because our determination was in 2010 and we came off the back of the global financial crisis, the cost of debt was significantly higher.[51]

---

47 ABS 81550DO001_2-1-11 Australian industry, 2010-11.

48 ABS, 6401.0 Consumer Price Index, Australia, table 11, CPI: Group, sub-group and expenditure class, index numbers by capital city.

49 Mr Nino Ficca, Managing Director, SP AusNet, *Proof Committee Hansard,* 27 September 2012, p. 19.

50 ENA, *Why are energy network costs rising across Australia?,* p. 5.

51 Mr Ian McLeod, Chief Executive, Ergon Energy Corporation Limited, *Proof Committee Hansard,* 3 October 2012, p. 36.

> The price that is charged as part of the network charge is effectively a building block charge, which includes cost of capital, a return of capital depreciation and operating costs. So a large portion of the charge is in fact reflective of the cost of capital. That is reset every five years. When you are in a situation, as we both were in the middle of the GFC, resetting your regulatory determination and your weighted average cost of capital, that is where you saw an increase in that cost which flowed through the network prices at that time.[52]

Labour costs

3.43 While labour inputs to the electricity sector had been relatively flat between 1996 and 2006, from 2007 onwards they have risen sharply[53] due to an increase in the size of the electricity supply industry workforce: since a low of 35 000 employed persons in the November quarter of 2006, the electricity supply industry workforce has increased to 71 900 employed persons in the August quarter of 2012.[54] From its examination of the productivity of electricity and other utilities, the Productivity Commission reported that:

> The rise in labour inputs is confirmed by examination of company annual reports, particularly those of the major electricity distribution companies that collectively account for the majority of labour inputs in the sector. Labour inputs have been increased to upgrade and augment network infrastructure, to assist distribution businesses respond to ageing workforces, and to prepare for skills transfer as older workers retire.[55]

Commodity and other input prices

3.44 As many coal-fired power stations have co-located coal mines, the input price of coal has not necessarily been greatly affected by the unusually high export coal and other commodity prices that have occurred in recent years, although some of that commodity price impact is flowing through to consumers.[56] The committee was informed about the impact of gas prices to date and potential future impacts:

> [W]e have seen significant changes in gas prices in Western Australia over the last few years, particularly as we have seen gas and coal prices being determined in a global market. We also see domestic gas demand rising without necessarily a corresponding rise in supply—hence the cost or price pressures that were involved in that environment. There is also a lack of competition in the domestic gas market with the supply side being

52 Mr Darren Busine, Acting Chief Executive Officer, Energex Limited, *Proof Committee Hansard,* 3 October 2012, p. 36.

53 Topp, V. and Kulys, T., Productivity Commission staff working paper, *Productivity in Electricity, Gas and Water: Measurement and Interpretation.* March 2012, p. 31.

54 ABS, *Labour force Australia—detailed quarterly,* August 2012, catalogue no. 6291.0.55.003.

55 Topp, V. and Kulys, T., Productivity Commission staff working paper, *Productivity in Electricity, Gas and Water: Measurement and Interpretation.* March 2012, p. 63.

56 Plumb, M. and Davis, K., Reserve Bank of Australia Bulletin, *Developments in Utilities Prices*, December Quarter 2010.

> dominated by two major suppliers and demand is concentrated effectively in five key consumers of gas.[57]
>
> [A]lthough gas prices are rising, there is still a lot of uncertainty as to where they will be in the medium to long term. If you build a gas fired power station you are looking to operate it for the next 30 to 40 years, but if you cannot take a view on what your fuel cost is going to be then you cannot work out whether you are going to be competitive in the marketplace.[58]

3.45 The committee also heard how weather conditions had affected particular types of generation, such as hydro and wind power, during particular periods:

> South Australia, for instance, does not have a lot of good quality coal; it is reliant on gas and, more recently, has had a very high penetration of wind. In Tasmania there was a period, particularly during the drought, where energy out of their hydro system had to be carefully managed.[59]

Technical and reliability requirements

3.46 The committee was informed of a range of technical and reliability factors that may have contributed to recent increases in electricity prices, including service and reliability standards, asset replacement after its useful life (including catch-up on previous under investment), underground cabling and metering systems. The following sections briefly summarise each of those potential contributions to electricity prices across the generation, transmission, distribution and retail components of the electricity industry.

Service and reliability standards

3.47 Some state governments, including those in NSW and Queensland, have in recent years increased the standards to which they require networks to operate. While this improves the reliability of supply, this has also added to the costs. The Ai Group informed the committee that in its view:

> Some elements of the network-related price increase are related to policy—for instance, policy decisions to have particular reliability standards. Whether those are good choices or bad choices, there is scope to improve how the system operates on that front.[60]

3.48 Energex told the committee a review of security and reliability had been a significant driver in electricity prices in Queensland:

> For Energex, the key factors are the improvements in security and reliability in response to the first Somerville review in 2004 in Queensland,

---

57 Ms Anne Nolan, Director General, Department of Finance (WA), *Proof Committee Hansard,* 2 October 2012, p. 2.

58 Mr Matthew Warren, Chief Executive Officer, ESAA, *Proof Committee Hansard,* 27 September 2012, p. 49.

59 Mr John Pierce, Chairman, AEMC, *Proof Committee Hansard,* 25 September 2012, p. 14.

60 Mr Tennant Reed, Principal National Adviser, Public Policy, Ai Group, *Proof Committee Hansard,* 25 September 2012, p. 45.

> and also the cost of capital established at our recent reset, which was in the midst of the GFC, and the demand forecasts at the same time.[61]

3.49 The committee noted that enhanced service standards and reliability requirements in NSW have contributed to around nine per cent of the approved capital investment.[62] The AER reported that, in its view, the reliability settings were above levels that consumers would value:

> [T]he reliability settings for the distribution in New South Wales have been set above the levels that consumers would value. That has been the view of AEMC and they have recently come out with a report suggesting that consumers may find better value with some relaxation of those standards, and those matters would now be considered by government. They would then feed into our next round of determinations.[63]

Asset replacement after useful life

3.50 Replacement of assets after their useful life has also been suggested as a significant contributor to electricity prices. The Productivity Commission analysed the capital investment in electricity infrastructure and demonstrated a surge in recent years, as shown in Figure 3.4 below. The Productivity Commission noted that:

> Electricity supply is characterised by periodic surges and declines in the rate of growth of generation and network capacity. The strong growth in capital and labour inputs in [electricity supply] from the late 1990s to 2009–10 is the most recent of a number of investment surges in [electricity supply] that have occurred over time. It is consistent with the observation that much of the growth in capital and labour inputs during the period has been associated with a major program of infrastructure renewal or replacement.
>
> Infrastructure assets built in the mid-to-late 1960s that had a lifespan of 30 to 40 years would likely have been up for replacement or refurbishment from the mid-to-late 1990s onwards. Similarly many of the assets built in the investment boom of the late 1970s early 1980s would also have been at or near retirement or renewal age from the early 2000s onwards. Refurbishment and replacement of these assets would also be contributing to the surge in investment since the late 1990s, and particularly in the past five years or so.[64]

---

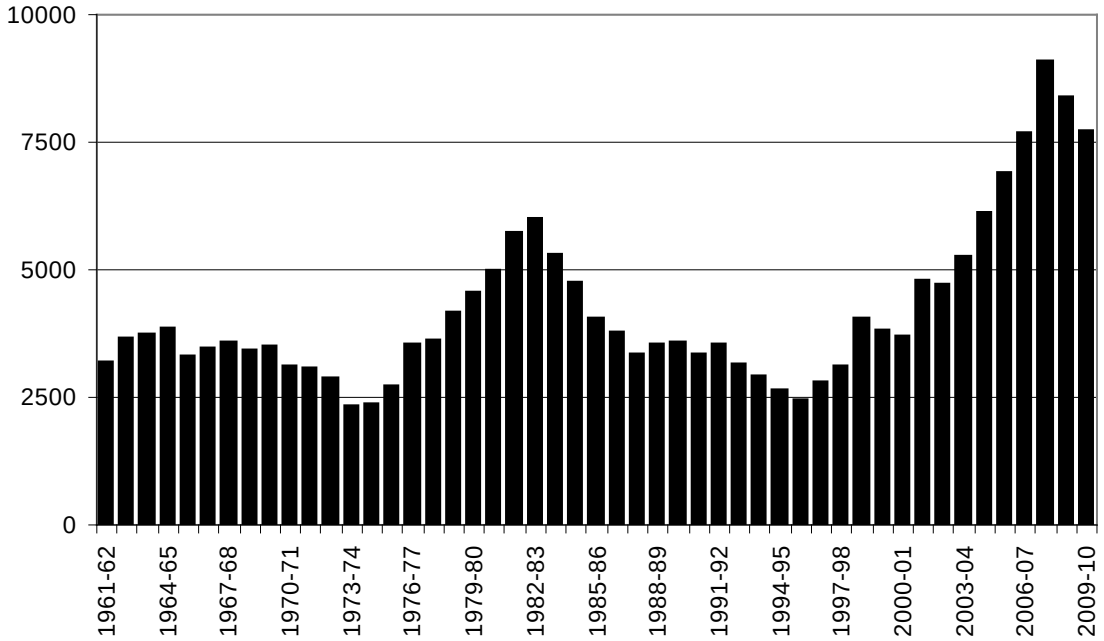
61 Mr Darren Busine, Acting Chief Executive Officer, Energex Limited, *Proof Committee Hansard,* 3 October 2012, p. 27.

62 DRET, *Fact Sheet: Electricity Prices,* August 2012, p. 1, 3; see also ENA, *Why are energy network costs rising across Australia?,* p. 4.

63 Mr Andrew Reeves, Chairman, AER, *Proof Committee Hansard,* 27 September 2012, p. 4.

64 Topp, V. and Kulys, T., Productivity Commission staff working paper, *Productivity in Electricity, Gas and Water: Measurement and Interpretation.* March 2012, p. 52.

Figure 3.4: Electricity supply: Real capital investment ($ million), 1961–62 to 2009–10, constant 2006–07 dollars[65]



3.51 Such asset replacement of electricity networks is estimated to account for around 31 per cent of the $14 billion of approved capital expenditure in NSW, which is particularly significant given that networks costs contribute 51 per cent of the overall cost of electricity.[66] The committee noted that:

> The investment needed in the NEM is forecast to exceed $7 billion for transmission and $35 billion for distribution over the current regulatory periods. This is a rise in investment from the previous periods of 82 per cent and 62 per cent (in real terms) in transmission and distribution networks respectively.[67]

3.52 During the 1990s there was a significant under-investment in electricity infrastructure and some of the investment now being undertaken is to "catch up" on what should have been done then.[68] In spite of that, inefficiencies in resource allocation are still occurring.[69]

---

65 Reproduced from: Topp, V. and Kulys, T., Productivity Commission staff working paper, *Productivity in Electricity, Gas and Water: Measurement and Interpretation.* March 2012, p. 52.

66 DRET, *Fact Sheet: Electricity Prices,* August 2012, p. 1 and 3.

67 DRET, *Fact Sheet: Electricity Prices,* August 2012, p. 3.

68 Mr Ian McLeod, Chief Executive, Ergon Energy Corporation Limited, *Proof Committee Hansard,* 3 October 2012, p. 28.

69 Prime Minister Julia Gillard, speech to the Energy Policy Institute of Australia, *Electricity Prices: The Facts*, 7 August 2012, p. 3.

Underground cabling

3.53 The committee noted the impact of an increased usage of underground cabling, versus poles and wires and the cost impact arising from that. The overall quantity of underground electricity cabling in place remains small (around 13 per cent) relative to overhead cabling. However, in the most recent decade around 60 per cent of installed electricity cabling has been put underground, compared to 20 to 25 per cent in the two previous decades. Given that the cost ratio of underground to overhead cabling can range from 2:1 at 11kV to 20:1 or more at 400kV, the greater deployment of underground power lines can significantly contribute to network costs.[70]

Changes to metering systems

3.54 Changes to billing, marketing and metering systems have contributed to retail price increases in NSW of around 1 per cent from July 2012.[71] The Consumer Action Law Centre (CALC) noted that the installation of new "smarter" technologies in Victoria, designed to better manage energy systems, was also potentially contributing to electricity price increases.[72]

Policy and regulatory factors

3.55 A range of policy and regulatory factors may have contributed to recent electricity prices increases, including unwinding of cross subsidies, weakness in the existing rules, problems with the merits review process, financial flows out of the sector, such as increased dividend from government owned entities, renewable energy programs, the carbon price and issues with revenue and price caps. The following sections briefly summarise each of those potential contributions to electricity prices across the generation, transmission, distribution and retail components of the electricity industry.

Unwinding of cross subsidies

3.56 As shown in Figure 3.5 below, average Australian household electricity prices were relatively constant in real terms between 1991 and 2007. From 2008 onwards, household electricity prices have risen rapidly, with an average national rise of around 40 per cent in real terms over the last three years. While the price of business electricity has also risen in recent times, it is now similar to 1991 business electricity prices in real terms due to significant decreases in business electricity prices in real terms during the 1990s:[73]

> While there is some variation in the extent of price rises across the states and territories, they display a consistent upward trend in prices over this period. These increases have been well ahead of the general increase in

70 Topp, V. and Kulys, T., Productivity Commission staff working paper, *Productivity in Electricity, Gas and Water: Measurement and Interpretation.* March 2012, pp 52–55.

71 IPART, *Fact Sheet: Changes in regulated electricity prices from 1 July 2012,* p. 3.

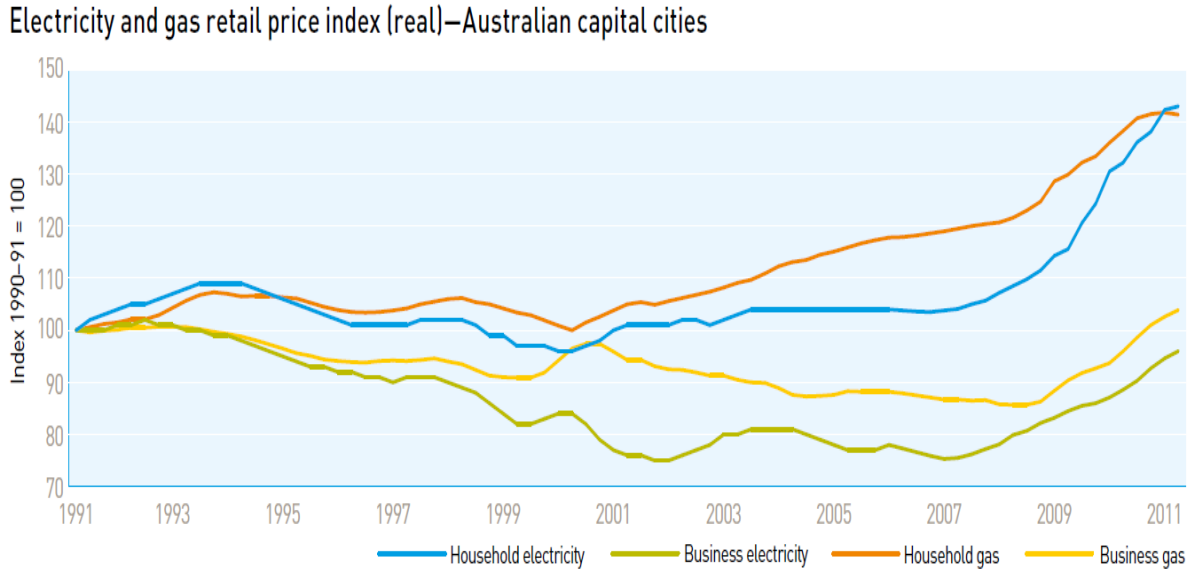
72 Consumer Action Law Centre (CALC), *Submission 24,* p. 1.

73 DRET, *Fact Sheet: Electricity Prices,* August 2012, p. 2.

> prices and faster than growth in average wages. While the consumption of electricity makes up a relatively small component of a typical household's expenditure, these price rises are putting pressure on lower income households.[74]

3.57 The AER noted 'that upward trends in real household electricity and gas prices over the past decade in part reflect the unwinding of historical cross-subsidies from business to household customers that was necessary as jurisdictions phased in retail contestability.'[75]

Figure 3.5: Average electricity and gas real index for Australian capital cities[76]



Weaknesses in existing rules

3.58 The committee heard a lot of evidence about the contribution of existing regulatory arrangements to electricity price increases. This section will briefly cover some of the impact on cost, while the following chapter will cover regulatory issues in more detail. The AER informed the committee that the existing regulations have led to price increases beyond what has been necessary for a safe and reliable supply:

> There have been a range of reasons for recent price increases—rising generation costs, rising retail costs and the costs of meeting green schemes have all played a part. But the rising costs of the electricity network have been the main contributor to price increases in all states. There are a range of factors driving these increased network costs. The need to replace ageing equipment and meter peak demand has driven significant network investment across the market. However, our submission emphasises that, while much of this investment was necessary, weaknesses in the regulatory framework—that is, the rules that set out how the AER must regulate

74 Garnaut Climate Change Review, *Update Paper 8: Transforming the electricity sector*, March 2011, p. 6.

75 DRET, *Answer to question on notice*, 7 September 2012 (received 21 September 2012).

76 Reproduced from DRET, *Fact Sheet: Electricity Prices*, August 2012, p. 2.

> prices—have led to price increases beyond what has been necessary for a safe and reliable supply.[77]

3.59 The AEMC also noted concerns about the existing rules:

> The price and reliability outcomes in this regulated network sector, in our view, are a function of three things: (1) yes, the rules; (2) the way the rules are interpreted and applied, including through the merits review process; and (3) the corporate governance of the businesses involved.[78]

3.60 The committee noted the importance of stability for business to be able to operate, but was also interested to hear the following view on difficulties arising from the five year terms of the regulatory determinations:

> I think five-yearly price controls setting prices or revenues for five years and fixing them for that period of time are a very onerous form of contract. I think that it requires discipline on the part of shareholders and managers to be able to operate effectively under that, and I think the conflict-of-interest and other governance issues that are linked to government ownership of the networks simply have demonstrated quite clearly—the data seems to suggest—that it has not actually achieved suitable outcomes.[79]

3.61 The committee was told about a particular issue that has arisen in South Australia, in which South Australians are bearing the costs of cheaper power for Victorians, noting the proposed rule change to address this issue:

> The effect of a generator connecting to the network on how the rest of the network operates and the capital expenditure required is really where the major part of the expense is. Under the current rules it is true that that expenditure on the network is allocated to consumers in South Australia.
>
> Even though the power may be being consumed by Victorians, the network costs to generate that power are being incurred by South Australians.
>
> We have a rule change we are dealing with at the moment that deals with the interregional aspects of the problem, so that if energy is being consumed by Victorians, even though the transmission kit might be in South Australia, Victorians will pay for that transmission kit—likewise for New South Wales and Queensland.[80]

Revenue and price caps

3.62 The committee heard how revenue caps can cause prices to rise when demand falls. The arrangements with revenue caps were set up some years ago, when there was consistent growth in demand. However, given that revenue is a product of price

77 Mr Andrew Reeves, Chairman, AER, *Proof Committee Hansard,* 27 September 2012, p. 1.

78 Mr John Pierce, Chairman, AEMC, *Proof Committee Hansard,* 25 September 2012, p. 12.

79 Mr Bruce Mountain, *Proof Committee Hansard,* 27 September 2012, p. 24.

80 Mr John Pierce, Chairman, AEMC, *Proof Committee Hansard,* 25 September 2012, p. 17.

and demand, fixed revenue caps may cause price rises as demand has fallen in recent times, as explained by the Total Environment Centre (TEC):

> Where peak and/or total demand are flat or falling, under a revenue cap, network revenue remains constant, so networks have an incentive to encourage more energy saving measures, as any further decreases in costs result in increases in profits. The downside for consumers is that if demand proves to be lower than forecast for much of the 5 year determination period, the networks get a windfall profit, since their revenue was determined by the original forecast.[81]

3.63 Professor Garnaut held a similar view, stating that:

> [I]f demand falls price is increased to make sure that companies get their guaranteed rate of return. So, as demand has fallen, prices have had to be increased even more than they otherwise would have been. Of course, if price then goes up in response to demand falls, then demand falls even more.[82]

3.64 The Department of Climate Change and Energy Efficiency (DCCEE) responded to questions on the relationship between demand reduction and electricity prices, noting that they had work underway to better understand what was occurring:

> The modelling exercise is currently underway. We do not yet have any final results from that exercise but the modelling is well and truly underway. We would expect there would be results to hand over the coming weeks. There is an expectation that there will be public consultation on the basis of those results and an accompanying regulatory impact analysis of the proposal for a national Energy Savings Initiative.[83]

3.65 The committee was also informed about problems with price caps, such as a potential incentive or opportunity for networks to "game" the market:

> Under a price cap the AER divides revenue requirements each year by the projected units of sales to determine a price. A price cap requires a 5 year forecast of demand. The price is set on an annual basis; but unlike a revenue cap, once it is set it cannot be compensated for the following year, so the networks get to either keep the profit they have made when demand is higher than anticipated, or are forced to bear the losses when the reverse occurs. A price cap therefore provides networks with a significant opportunity to game the market.[84]

---

81 Total Environment Centre (TEC), *Submission 72,* p. 6.

82 Professor Ross Garnaut, *Proof Committee Hansard,* 9 October 2012, p. 2.

83 Mr Bradford Archer, First Assistant Secretary, Energy Markets and Policy Coordination Division, Department of Climate Change and Energy Efficiency (DCCEE), *Proof Committee Hansard,* 25 September 2012, p. 4.

84 TEC, *Submission 72,* p. 6.

> There is a lack of market signals out there. If the Reserve Bank sees the market heating up, they change interest rates; electricity prices do not.[85]

Merits review process

3.66 Under current arrangements, the AER's revenue and price setting decisions are subject to merits review in the Australia Competition Tribunal and this option is frequently used by network operators to achieve higher prices and revenue caps.[86] Part of this is perceived by some to be associated with the merits review process being too easy and the automatic additions of assets to the regulated assets base.[87] The AER quantified the extent of this problem in dollar terms:

> Our submission also highlighted the impact of appeals of AER decisions on electricity prices. The outcomes of these appeals, heard by the Australian Competition Tribunal, have increased revenues to network businesses by some $3 billion out of some $58 billion over the current five-year obligatory period. A review of that appeals mechanism is currently underway.[88]

3.67 Evidence presented to the committee indicated that in NSW, the capital expenditure overspend (the IPART/Australian Competition and Consumer Commission (ACCC) approved expenditure) has grown from a few $10s of million 2004–05 to almost $600 million in 2008–09. The Department of Resources, Energy and Tourism (DRET) went on to note that:

> …an overspend does not imply this additional expenditure is inefficient. Capex overspends may be an efficient response to a range of legitimate drivers; for example, as a result of changes to reliability standards and demand outcomes being different to what was forecast. However, it is essential that consumers have confidence that the regulatory framework does not incentivise unnecessary investment.
>
> The ability of the AER to test the efficiency of overspends is a matter currently being reviewed as part of the AEMC's Economic Regulation of Network Service Providers rule change process. The AEMC's draft rule provides for new tools under the National Electricity Rules (NER), such as capital expenditure sharing schemes and efficiency reviews of past capital expenditure so the AER can incentivise network service providers to invest capital efficiently. [89]

3.68 Professor Garnaut drew the committee's attention to the lack of opportunity for counter appeal by the regulator and suggested that allowing counter appeals by the regulator may contribute to keeping prices down:

---

85 Mr Ian McLeod, Chief Executive, Ergon Energy Corporation Limited, *Proof Committee Hansard,* 3 October 2012, p. 27.

86 AER, *State of the Energy Market 2011*, p. 9. See also DRET, *Submission 61*, p. 26.

87 AER, *State of the Energy Market 2011*, p. 7.

88 Mr Andrew Reeves, Chairman, AER, *Proof Committee Hansard,* 27 September 2012, p. 2.

89 DRET, *Answer to question on notice*, 7 September 2012 (received 21 September 2012).

> [T]he rate of return is set by the regulator. It can be appealed by players in the industry and there is no opportunity for counter appeal by the regulator. So removing that unusual imbalance, in which those who want higher prices can appeal the regulated outcomes but there cannot be a general counter appeal by the regulator, would make a contribution. If that were removed it might simply be a matter of the regulator applying, more rigorously, commercial and economic principles, because there is no doubt that the rate of return has been set substantially in excess of the supply price of investment to this industry. The test of that is that anyone who happens to own a regulated asset would not be prepared to sell that asset for an amount of money equal to the regulated asset base. They would want a premium, which shows that the rate of return that is being allowed on the investment is higher than the supply price of investment.[90]

3.69 The department informed the committee that the AER and SCER are examining whether the merits review process can be improved.[91]

Financial flows to state-governments

3.70 The Prime Minister noted that some state and territory governments have been profiting from price increases under current regulatory arrangements:

> [I]n many places around Australia, the State Governments both own lucrative electricity assets and regulate parts of the electricity market.
>
> The comparison between the private and public owned utilities shows the States are doing very well financially out of this arrangement.
>
> Following the recent round of price increases, revenue for network enterprises wholly owned by State Governments is up fifty per cent over the previous five year period.
>
> In other words, revenue to the states went up nearly twice as fast as revenue to the private network operators.[92]

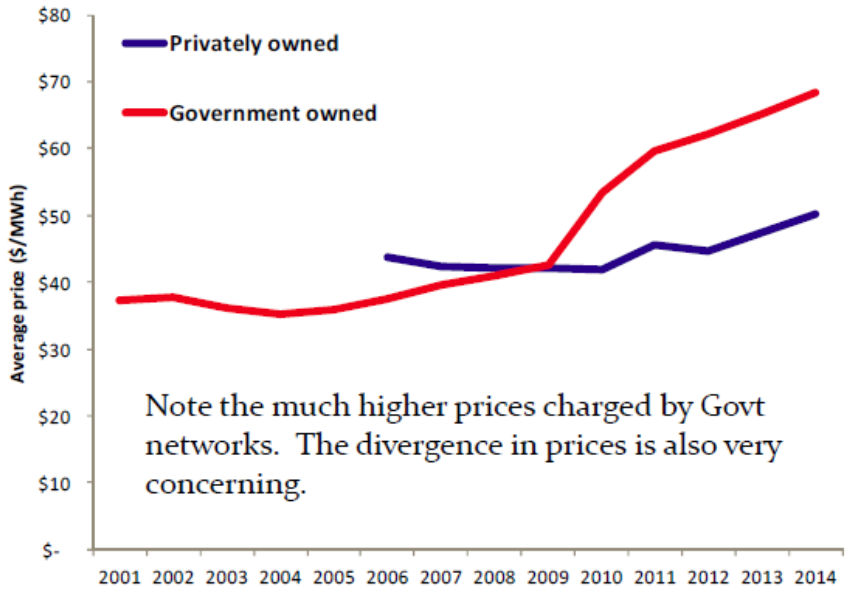
3.71 A presentation recently delivered by the Energy Users Association of Australia (EUAA) Executive Director highlighted the discrepancies in distribution prices between private and government owned entities as shown in Figure 3.6.

90 Professor Ross Garnaut, *Proof Committee Hansard,* 9 October 2012, p. 2.

91 DRET, *Submission 61*, pp 26–27, 28.

92 Prime Minister Julia Gillard, speech to the Energy Policy Institute of Australia, *Electricity Prices: The Facts*, 7 August 2012, p. 5.

Figure 3.6: Distribution prices[93]



3.72 DRET noted, however, that the characteristics of the market vary in each state and territory and this could influence any cost comparison analysis. For example, cost comparisons between state and privately owned utilities may not take into account the length of the NEM in each jurisdiction and other differing attributes.

3.73 The NSW government budget papers provided an overview of the dividends and corporate tax revenue it receives from its utilities. The tables below provide a breakdown of these sources of revenue. They indicate the NSW government will receive $999 million in dividends from electricity generation and distribution and transmission and an additional $546 million from Snowy Hydro in 2012–13. There is a decrease in dividends from electricity generation from the previous year of $83 million and an increase in distribution and transmission dividends of $262 million. Both categories of energy dividends then decrease over subsequent years.[94]

93 EUAA, *Australian Electricity Price Hyper-Inflation: EUAA Executive Director's Presentation to Australian Economic Forum*, 23 July 2012.

94 NSW government, Budget Statement 2012–13, available: http://www.budget.nsw.gov.au/__data/assets/pdf_file/0008/18296/bp2_Ch5.pdf, (accessed 12 September 2012), pp 5–18.

Figure 3.7: NSW government Dividends and Income Tax Equivalent Revenue[95]

	2010-11 Actual $m	2011-12 Budget $m	2011-12 Revised $m	2012-13 Budget $m	2013-14 Forward estimates $m	2014-15 Forward estimates $m	2015-16 Forward estimates $m
Dividends							
Electricity							
Generation	130	117	181	98	47	41	51
Distribution and Transmission	508	579	639	901	829	644	650
Water, Property and Resources	360	367	362	388	401	398	412
Financial Services	91	51	51	55	61	67	67
Ports	9	21	22	49	66	86	110
Other	0	0	0	1	0	0	0
	1,098	**1,135**	**1,254**	**1,491**	**1,404**	**1,237**	**1,290**
Income tax equivalents							
Electricity							
Generation	151	100	75	51	32	16	38
Distribution and Transmission	524	360	413	536	543	447	465
Water, Property and Resources	112	146	305	214	237	245	258
Financial Services	45	22	22	24	26	29	29
Ports	38	48	35	41	48	64	73
Other	13	5	10	10	10	10	11
	884	**680**	**860**	**875**	**896**	**810**	**874**
Total Dividends and Income Tax Equivalent Revenue	**1,982**	**1,815**	**2,115**	**2,367**	**2,300**	**2,047**	**2,164**

Figure 3.8: NSW government 'Other dividends and distributions' (Snowy Hydro Limited)[96]

	2010-11 Actual $m	2011-12 Budget $m	2011-12 Revised $m	2012-13 Budget $m	2013-14 Forward Estimates $m	2014-15 Forward Estimates $m	2015-16 Forward Estimates $m
Total Other Dividends and Distributions	**430**	**529**	**387**	**546**	**449**	**477**	**505**

3.74 The NSW Treasurer, the Hon Mike Baird MP, has outlined that the revenue from the electricity dividends is reinvested in the community to fund schools, hospitals, transport and police.[97]

3.75 Chapter 8 of the Queensland government budget strategy papers provided an overview of its 'public non-financial corporations sector'. It indicated the Queensland government will receive $727 million in dividends in 2012–13 from the energy sector.

95 NSW government, *Budget Statement 2012–13*, pp 5-18.

96 NSW government, *Budget Statement 2012–13*, pp 5-18.

97 Louise Hall, 'Carbon tax not dividends behind rising power bills, says Treasurer', *The Sydney Morning Herald*, 12 August 2012, available: http://www.smh.com.au/nsw/carbon-tax-not-dividends-behind-rising-power-bills-says-treasurer-20120812-242e8.html, (accessed 12 September 2012).

Figure 3.9: Queensland government ordinary dividends[98]

Table 8.3
Ordinary dividends[1,2]

	2011-12 Est. Act. $ million	2012-13 Budget $ million
Energy Sector	689	727
Transport Sector	146	207
Other	22	36
Total PNFC sector dividends	**857**	**971**

Notes:
1. Numbers may not add due to rounding.
2. Represents dividends declared in the period.

3.76 Professor Garnaut noted that it was essentially a policy question for the relevant state government and they could choose to lower electricity prices:

> The question is different in publicly owned and privately owned networks. Where they are publicly owned—and this is overwhelmingly the case in New South Wales, Queensland, Western Australia and I think Tasmania—the issue does not involve any effect on the wealth of private firms. Here it is a straightforward public policy question. Really the question is: is artificially raising the price of electricity a good way for these governments to raise revenue? I would suggest that it is generally not a good way, and it is within the power of the governments themselves to apply a lower rate of return and bring down electricity prices. That will have an effect on government revenue. I would expect that there will be alternative forms of revenue that could give you the fiscal effect you want at much lower cost to the community.[99]

Renewable energy

3.77 Greater usage of more expensive renewable energy systems and Renewable Energy Targets (RET) have also been suggested to contribute to both price increases as well as price decreases, as explained by the REC Agents Associations:

> The renewable energy target, which is a national scheme, has come in for a bit of criticism from some quarters and is blamed for a large part of the increase in retail electricity prices. While it is clear that the renewable scheme has contributed to rising power prices, it is currently less than 1c per kilowatt hour, which is roughly equivalent to 3.4 per cent of retail prices, and a similar amount is due to state based schemes. Importantly though, the cost of the national renewable scheme is expected to reduce. That is the direct pass through of cost; however, the implementation of solar systems has led to a reduction in electricity demand and we have seen wholesale prices fall quite a lot over the last few years. That is because

98 Queensland government, *Budget Strategy and Outlook*, p. 129.

99 Professor Ross Garnaut, *Proof Committee Hansard*, 9 October 2012, p. 5.

> there has been more competition from generators to meet a lower demand. So renewable energy is actually contributing to lower wholesale prices.[100]

3.78 Professor Stuart White from the Institute for Sustainable Futures at the University of Technology Sydney (UTS) also noted that were there any cost increases, these were small compared to network costs:

> One is the impact of environmental requirements, of which the mandatory renewable energy target is one. … that is a factor in the increase in prices, and of course many state based schemes have increased the price. But it is small relative to the network spin. So the second factor you mentioned, about increasing the value of assets and so on, is probably a much larger one. The spending on networks is $45 billion—an awful lot of money, and that swamps the impact of such measures as the mandatory renewable target, the feed-in tariffs and so on, many of which are being phased out in any case.[101]

3.79 In addition, the Ai Group suggested the RET can put downward pressure on prices, in both the small and large scale schemes:

> But there are some countervailing effects from the two components of the RET. So the extra generation that the LRET brings on has to some extent—and there is some controversy over the size—a depressing effect on wholesale electricity prices. Some observers think that that is strongest in South Australia, where most of the wind capacity is, and less significant elsewhere. The small-scale scheme, where most of the activity has been over the last couple of years, may be playing a role there as well—although that is even more complicated to assess.[102]

3.80 Professor Garnaut also noted the downward pressure on price from the RET and noted that it may contribute to lowering the carbon price:

> The steady expansion of renewable energy supplies under the RET is forcing down wholesale prices, and it is possible, although not certain, that in the middle of 2015 with the linkage to the European market we would have a lower carbon price than we do today.[103]

3.81 The committee was also informed of the complexity and variables involved in forecasting Renewable Energy Certificate (REC) prices and that the current RET review may provide some helpful analysis:

> In forecasting REC prices, though, there are an enormous number of variables around demand and the wholesale electricity market factors relating to local planning requirements for building specific projects, the

---

100 Mr Riccardo Brazzale, President, REC Agents Association, *Proof Committee Hansard,* 9 October 2012, p. 9.

101 Professor Stuart White, Director Institute for Sustainable Futures, University of Technology, Sydney (UTS), *Proof Committee Hansard,* 25 September 2012, p. 28.

102 Mr Tennant Reed, Principal National Adviser, Public Policy, Ai Group, *Proof Committee Hansard,* 25 September 2012, p. 43.

103 Professor Ross Garnaut, *Proof Committee Hansard,* 9 October 2012, p. 2.

> costs of individual renewable technologies. There are a whole range of factors that come into play in forecasting future REC prices that make it extremely difficult. I should say that the RET review that is currently underway would have some type of analysis of what those prices may be to achieve different targets.[104]

Carbon price

3.82 The carbon price was forecast to increase electricity prices by around 10 per cent[105] and that appears to be occurring in practice: witnesses cited figures of six,[106] 9.5,[107] 10[108] and 15 per cent.[109]

Network investment and gold plating

3.83 Of all the areas potentially responsible for electricity price rise network investment appears to be the largest and is therefore attracting a lot of attention. The Productivity Commission pointed to NSW electricity bills between 2007–08 and 2012–13 in which a typical total bill went from $1100 to $2230, with the network component growing by 130 per cent from $505 to $1159.[110] In other words, the network component in 2012–13 is now more than the total bill was in 2007–08.

3.84 The Prime Minister noted that current regulatory arrangements create an incentive to overinvest in infrastructure and pass on the costs to consumers.[111] Part of this is perceived by some to be associated with the merits review process being too easy and the automatic additions of assets to the regulated assets base;[112] the department noted its observations regarding the impact of network costs on electricity prices:

> The department is obviously aware of recent increases in electricity prices for consumers and we are aware that rising network charges are a common driver as significant investment is required in new and ageing networks to meet rising demand and ensure supply reliability.

---

104 Mr Tim Reardon, Executive Director, NGF, *Proof Committee Hansard*, 9 October 2012, p. 42.

105 Prime Minister Julia Gillard, Speech to the Energy Policy Institute of Australia, *Electricity Prices: The Facts*, 7 August 2012, p. 2.

106 Mr Paul Smith, Acting Chief Executive, AEMC, *Proof Committee Hansard*, 25 September 2012, p. 15.

107 Dr Ray Challen, Deputy Director General, Public Utilities Office, Department of Finance (WA), *Proof Committee Hansard*, 2 October 2012, p. 5.

108 Mr Greg Watkinson, Chief Executive Officer, Economic Regulation Authority (WA), *Proof Committee Hansard*, 2 October 2012, p. 16.

109 Mr Brian Green, Chairman, EUAA, *Proof Committee Hansard*, 27 September 2012, p. 26.

110 Productivity Commission, *Draft Report: Electricity Network Regulatory Frameworks*, October 2012, p. 4.

111 Prime Minister Julia Gillard, Speech to the Energy Policy Institute of Australia, *Electricity Prices: The Facts*, 7 August 2012, p. 5.

112 AER, *State of the Energy Market 2011*, p. 7.

> Climate change policies have also put upward pressure on prices, but we note the government is providing targeted assistance to help households adjust to cost increases arising from the carbon price.[113]

3.85 The committee received lots of submissions and oral evidence on the over-investment in networks. For example, Dr Ray Challen of the Department of Finance (Western Australia) stated '…I agree that there is that incentive for over-investment in network assets'.[114] Other examples included:

> The protected monopoly companies take the opportunity to overinvest or "gold plate" their networks because the regulatory regime has encouraged them to do so.[115]
>
> * * *
>
> To date the NEM has conveyed efficient pricing signals and delivered the necessary investment in the right place at the right time. In real terms, the wholesale prices for electricity have not increased over the life of the NEM. The competitive generation market has also responded very quickly to the changed outlook; however, regulated investment has not.[116]
>
> * * *
>
> The growth in capital expenditure over the past five years in networks has therefore outstripped the growth in both energy and peak demand and contributed to those rises in retail prices. While some of that expenditure has been necessary to deal with ageing assets, it is not clear that all the expenditure is supported by either the age of the network assets or the growth in demand.[117]
>
> * * *
>
> So the problem with the increased network spend and the flattening or even decreasing sale of kilowatt hours is a structural issue. It costs you more to sell less of your product, and therefore prices will inevitably spiral.[118]
>
> * * *
>
> [T]he important thing is the network spend. It is just far and away the biggest component of the bill increase, so it has to be, I would suggest, the most significant thing that you would focus your attention on.[119]

---

113 Mr Brendan Morling, Head, Energy Division, DRET, *Proof Committee Hansard,* 25 September 2012, p. 2.

114 Dr Ray Challen, Deputy Director General, Public Utilities Officer, Department of Finance (WA), *Proof Committee Hansard,* 2 October 2021, p. 4.

115 TEC, *Submission 72,* p. 4.

116 Mr David Swift, Acting Chief Executive Officer, Australian Energy Market Operator (AEMO), *Proof Committee Hansard,* 27 September 2012, p. 8.

117 Mr David Swift, Acting Chief Executive Officer, AEMO, *Proof Committee Hansard,* 27 September 2012, p. 8.

118 Professor Stuart White, Director Institute for Sustainable Futures, UTS, *Proof Committee Hansard,* 25 September 2012, p. 26.

3.86 The AER's 2011 *State of the Energy Market* report showed that NSPs' revenue has been increasing in line with increasing network investment (see Figures 3.10 and 3.11).

Figure 3.10: Energy network revenue[120]

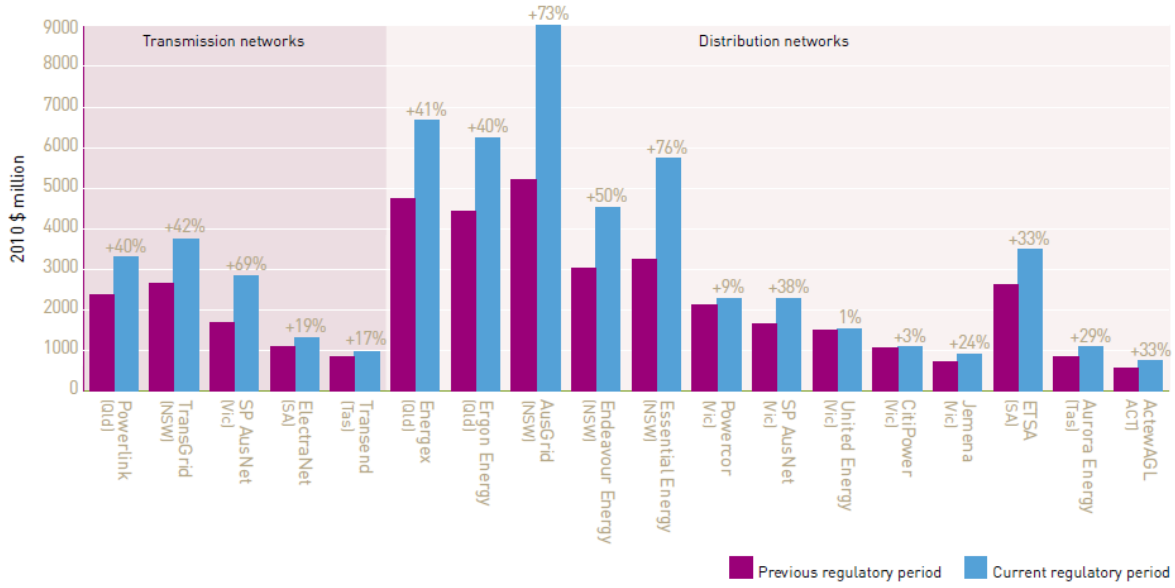
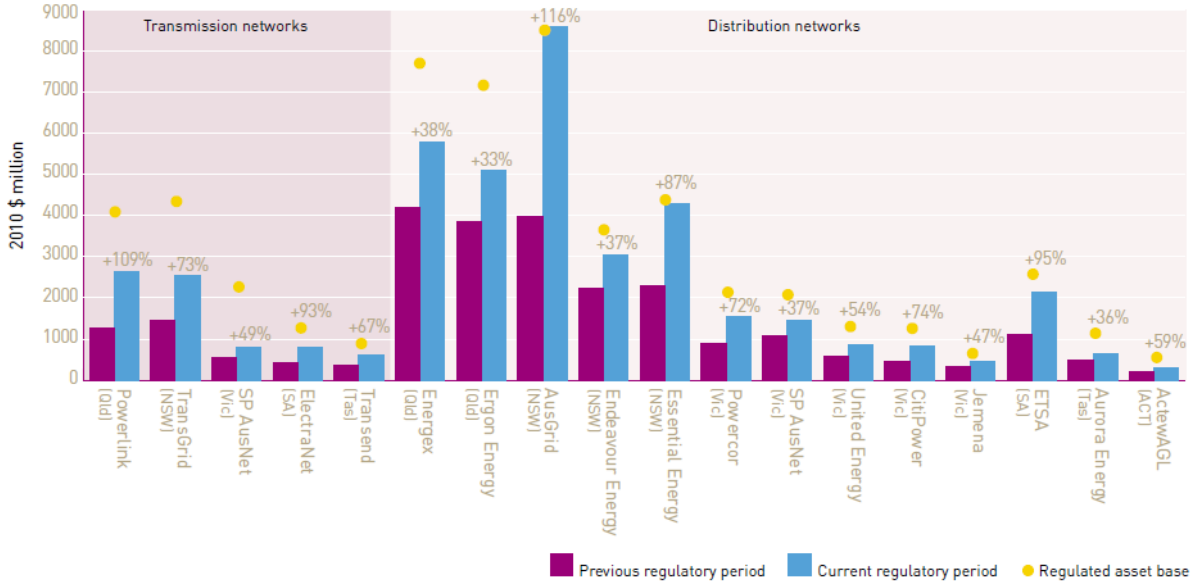


Figure 3.11: Energy network investment[121]



3.87 In contrast to much of the evidence presented to the committee, SP AusNet indicated that in their view there are instances where network costs have fallen, such

119 Professor Stuart White, Director Institute for Sustainable Futures, UTS, *Proof Committee Hansard*, 25 September 2012, p. 30.

120 AER, *State of the Energy Market 2011*, p. 62.

121 AER, *State of the Energy Market 2011*, p. 63.

as in Victoria.[122] Grid Australia also noted that investment in transmission infrastructure has not been as great as in distribution infrastructure and that it can assist in lowering electricity prices:

> Grid Australia members are currently spending at or below approved forecast expenditure needs for their current regulatory control periods. This is consistent with and responsive to demand in growth that is generally below forecast expectations. In some cases this is a result of deferred expenditure on identified projects. It is also worth noting that the Australian Energy Regulator—the AER—has found that transmission investment is forecast to plateau for transmission businesses this year. This is in contrast to the AER's prediction that distribution network costs will continue to rise.[123]

> Unlike distribution networks though, strategic investment in transmission helps increase interstate electricity trade and generator competition, getting consumers the lowest cost and efficient generation and, in doing so, helping to reduce power price rises.[124]

3.88 Some of the arguments against the existence of gold-plating include that other methods, such as new minimum service standards and demand reduction activities, have permitted reductions in capital expenditure:

> Energex has worked with the Queensland government through the second Somerville review during 2011 to assess the effectiveness of the security and reliability standards. As a result of this review, the minimum service standards have been stabilised or flat-lined and the security standards have been broadened to provide more efficient options. Together, the adoption of these changes in conjunction with the forecast moderation in network demand growth compared to previous forecasts has allowed us to reduce our capital expenditure over the current regulatory period by a further $850 million. The benefits of these expenditure reductions have been passed through in our network charges in the form of price discounts in 2012-13.[125]

3.89 Other arguments against gold-plating having occurred postulate that external factors beyond the control of the network businesses are to blame:

> ENA's submission explains how a perfect storm of high capital costs, higher government reliability standards, replacement of ageing assets and the need to service rising peak demand have all combined to push up network costs. ENA members appearing before the committee have explained that these

---

122 Mr Nino Ficca, Managing Director, SP AusNet, *Proof Committee Hansard,* 27 September 2012, p. 19.

123 Mr Peter McIntyre, Chairman, Grid Australia, *Proof Committee Hansard,* 25 September 2012, p. 34.

124 Mr Peter McIntyre, Chairman, Grid Australia, *Proof Committee Hansard,* 25 September 2012, p. 34.

125 Mr Darren Busine, Acting Chief Executive Officer, Energex Limited, *Proof Committee Hansard,* 3 October 2012, p. 27.

> factors are likely to moderate in the near term. Many businesses expect that future cost increases will be in line with inflation or perhaps even lower.[126]
>
> * * *
>
> [R]egulation to hold down retail electricity prices is self-defeating because the true costs of electricity need to be met somewhere, either through electricity prices [or] through the taxation system. Since regulated prices rarely keep pace with market developments, built up pressures can lead to sudden changes, larger than those the market would produce.[127]

3.90 Others informed the committee that, in their view, the regulatory arrangements were more at fault than the businesses. For example, Dr Paul Troughton argued that 'I am not accusing anyone of acting badly…Everyone is just responding to the incentives that are in place in the existing regime'.[128]

3.91 The Productivity Commission suggested that 'it is important not to blame network businesses for the current inefficiencies. Mostly, they are responding to regulatory incentives and structures that impede their efficiency'.[129]

3.92 Professor Garnaut elaborated on the reasons for the regulatory failure and observed that the high rate of return was very likely to cause wasteful over-investment and upward pressure on prices:

> Excessive price increases have reduced demand, and we guarantee a rate of return under our rate-of-return regulation. It is basically a riskless rate of return; there is not even exposure to the market…A completely unsustainable situation can emerge and I think that we are in that unsustainable situation now.[130]

3.93 The committee heard that some steps are already being taken to address the regulatory issues (these are discussed further in the next chapter):

> The other thing that is important to note is the regulation of networks has been subject to a recent rule change proposal. That has been under consideration by the Australian Energy Market Commission and continues to be under consideration by the Australian Energy Market Commission…

---

126 Dr Malcolm Roberts, Chief Executive, ENA, *Proof Committee Hansard*, 9 October 2012, p. 23.

127 Engineers Australia, *Submission 10*, p. 5, based on analysis by Simshauser and Laochumnanvanit, the price suppression domino effect and the political economy of regulating retail electricity prices in a rising cost environment, AGL Applied Economic and Policy Research Working Paper No 20, 2011.

128 Dr Paul Troughton, Manager of Regulatory Affairs, EnerNOC Pty Ltd, *Proof Committee Hansard*, 27 September 2012, p. 71.

129 Productivity Commission, *Draft Report: Electricity Network Regulatory Frameworks*, October 2012, p. 3.

130 Professor Ross Garnaut, *Proof Committee Hansard*, 9 October 2012, pp 1–2.

there is a draft ruling out at the moment. We would expect a final ruling by the end of the year.[131]

Committee comment

3.94 The committee has been informed about a large number of factors which contribute to electricity prices and recent increases in these. Some of these factors are contested, while others have wider acceptance. For some factors, while the price increases may seem perverse to somebody outside the electricity industry, it is apparent to the committee these have probably arisen as a result of historical technical and regulatory artefacts.

3.95 The committee considers that the following factors (shaded factors in Figure 3.3) have made significant contributions to household electricity prices rises:

(a) peak demand;[132]

(b) overestimated demand forecasts;

(c) opportunistic profit taking;

(d) gold-plating of networks;

(e) dividend extraction by state governments;

(f) revenue caps causing price to rise when demand falls;

(g) hedging arrangements to protect against price volatility in the NEM;

(h) labour prices;

(i) greater use of underground cabling;

(j) replacement of assets after their useful life;

(k) lack of competition in some retail sectors; and

(l) unwinding of cross subsidies between business and household customers.

3.96 The committee notes that factors (a) to (f) above are strongly influenced and enabled by the current regulatory arrangements which have set regulated returns at too high a level, as described by Professor Garnaut.[133] The committee further notes that the other unshaded factors in Figure 3.3 may have also contributed to electricity prices.

3.97 While the committee is convinced of the contributions to electricity prices discussed above, the committee is concerned that efforts to address these issues are hampered by a lack of quantitative information about their exact contribution. The committee notes the useful breakup of contributions to future electricity prices

131 Mr Brendan Morling, Head, Energy Division, DRET, *Proof Committee Hansard*, 25 September 2012, p. 2.

132 Although the committee notes this is the subject of conjecture: see paragraphs 3.22–3.25.

133 Professor Ross Garnaut, *Proof Committee Hansard*, 9 October 2012, pp 1–2.

provided by the AEMC, which includes factors such as transmission, distribution, wholesale, retail, carbon price, feed-in tariffs (FiTs), LRET, SRET and other state based schemes (see the discussion earlier in this chapter for the contributions). However, this does not provide sufficient information about other factors.

3.98 The committee therefore considers that it would be very beneficial if the AER was to provide more detailed ongoing quantitative monitoring of a much broader range of the factors contributing to electricity prices, including those identified in this report.

Recommendation 1

3.99 **The committee recommends that the AER provide an annual report including detailed quantitative analysis of the components of and contributors to electricity prices.**

3.100 The committee observed that for many factors contributing to electricity price rises, where the information and evidence around those individual factors is considered in isolation, the price increases may seem appropriate and logical. However, the overall electricity price increases experienced by Australians are completely inappropriate and unacceptable. The ATA noted that:

> Whilst there are many improvements that would reduce prices for consumers, a fundamental problem with the disaggregated structure of the energy market is that typically no single business can make a sound business case to promote any one of these improvements for consumers, based on the benefits to their part of the supply chain.[134]

3.101 From the committee's perspective, many stakeholders have appeared to argue that the price rises occurring in their components or factors are fair and logical, while the price rise of other components is the real problem. The committee considers that there needs to be a greater collective responsibility taken for overall electricity prices. This view is supported by a report commissioned by the CALC:

> The draft report provides a comprehensive overview of policy and regulatory developments with a specific focus on wholesale and retail markets, demand side interaction, market structure and efforts to tackle carbon emission reductions. The draft report argues that in Australia at present, consumer welfare is given insufficient attention by Australian policy makers and regulators, and throughout the report recommendations are made to inform a policy and regulatory framework that has a more rigorous focus on the interests of consumers. The draft report draws on international development, particularly from Europe and the UK, where there has been acknowledgment that the interests of industry did not 'trickle down' to satisfy the needs of consumers.[135]

134 Mr Damien Moyse, Energy Projects and Policy Manager, ATA, *Proof Committee Hansard*, 3 October 2012, p. 1.

135 CALC, *Submission 24*, p. 2.

3.102 The committee supports the related conclusion and way forward proposed by the Productivity Commission:

> The overarching objective of the regulatory regime is the long-term interests of electricity consumers. This objective has lost its primacy as the main consideration for regulatory and policy decisions. Its pre-eminence should be restored by giving consumers much more power in the regulatory process.[136]

3.103 The committee is therefore of the view that there needs to be better ongoing arrangements for managing electricity prices in the overall electricity system to ensure that price setting for individual components and factors is done in the context of keeping overall electricity price rises and the rate at which these occur at a more acceptable level. In other words, the committee recommends that those bodies setting prices at the individual component or factor level should have regard to and justify the impact on overall electricity prices.

Recommendation 2

3.104 **The committee recommends that ongoing arrangements be put in place to more effectively scrutinise prices in the overall electricity system, and ensure that price setting for individual components and factors is done in the context of keeping overall electricity prices at a more acceptable level.**

136 Productivity Commission, *Draft Report: Electricity Network Regulatory Frameworks*, October 2012, p. 2.

Chapter 4

Regulation of the electricity market

Regulatory framework

4.1 As discussed in Chapters 2 and 3, regulation and oversight of the electricity industry in Australia is complex. Electricity markets are overseen by governments and operated and regulated by independent bodies funded from a mix of government and industry investment. Independent regulators are required to oversee the operation of the wholesale market, generators, network businesses and retailers.

4.2 The overarching responsibility for energy policy in Australia rests with the Standing Council for Energy and Resources (SCER). SCER is responsible to the Council of Australian Governments (COAG) and sets the general principles relating to national energy regulation.

4.3 Under the Australian Energy Market Agreement (AEMA) signed by the Commonwealth, state and territory governments in 2004, SCER also has general policy oversight of some relevant national energy legislative arrangements including the National Electricity Laws and Rules.[1]

4.4 The National Electricity Law (NEL) is the foundation for the National Electricity Market (NEM) and establishes that all significant electricity industry participants in each relevant jurisdiction are required to participate in the single electricity market.[2] The law also sets out the National Electricity Objective (NEO) and revenue and pricing principles.

4.5 The National Electricity Rules (NER) govern the operation of the NEM. The rules have the force of law and are created by the NEL. The rules provide for the economic regulation of electricity distribution in relevant jurisdictions.

Economic regulation of electricity networks[3]

4.6 Electricity networks transport power from generators to customers. Transmission networks transport power over long distances, linking generators with load centres. Distribution networks transport electricity from points along the

---

1 Department of Resources, Energy and Tourism (DRET), *Australian Energy Market Agreement*, June 2004, available: www.ret.gov.au/Documents/mce/_documents/IGA_FINAL_%2830JUNE2004%292004071310032320041112162849.pdf (accessed 12 October 2012), p. 6.

2 The National Electricity Law is a schedule of the *National Electricity (South Australia) Act 1996*. It is also applied, by virtue of jurisdictional Application Acts, as a law in each of the jurisdictions that participate in the National Electricity Market (NEM).

3 Information in this section has been drawn from Australian Energy Regulator (AER), *State of the energy market: 2011*, Australian Competition and Consumer Commission (ACCC), Canberra, 2011, pp 53–63.

transmission network, and criss-cross urban and regional areas to provide electricity to customers.

4.7 Energy networks are capital intensive and incur declining average costs as output increases or increasing average costs as output decreases. This means network services in a particular geographic area can be most efficiently served by a single supplier, leading to a natural monopoly industry structure.

4.8 It is for this reason that electricity networks are subject to economic regulation: the Australian Energy Regulator (AER) has responsibility for monitoring and regulating networks in the NEM while the Economic Regulation Authority (ERA) regulates networks in Western Australia (see Chapter 2).

4.9 The NEM has 13 major electricity distribution networks. Queensland, New South Wales (NSW) and Victoria having multiple networks that are monopoly providers within designated areas. The Australian Capital Territory (ACT), South Australia and Tasmania each have one major network. Western Australia has three major networks.

4.10 The transmission networks in Victoria and South Australia, and the three direct current network interconnectors between these two states are privately owned. Victoria's five distribution networks are privately owned, while the South Australian network is leased to private interests. The ACT distribution network has joint government and private ownership. All networks in Queensland, NSW and Tasmania are government controlled. The network in south west Western Australia is government owned and two networks in the north west of the state are privately owned.

4.11 The NEL lays the foundation for the regulatory framework governing electricity networks. The law establishes revenue and pricing principles, including that network businesses should have a reasonable opportunity to recover 'at least efficient costs'.[4]

4.12 In the NEM, regulated electricity network businesses must periodically apply to the AER to assess their revenue requirements (typically every five years). Chapters 6 and 6A of the NER lay out the framework that the AER must apply when assessing the revenue of distribution and transmission businesses.[5]

4.13 While the regulatory frameworks for transmission and distribution are similar, there are differences. In transmission, the AER must determine a cap on the maximum revenue that a network can earn during a regulatory period. The range of mechanisms is wider in distribution, but generally involves setting a ceiling on the revenues or prices that a network can earn or charge during a period.

4.14 The available methods to regulate revenue include:

---

4 National Electricity Law (NEL), section 7A.

5 Australian Energy Market Commission (AEMC), *National Electricity Rules: Version 51*, available: www.aemc.gov.au/Electricity/National-Electricity-Rules/Current-Rules.html (accessed 16 October 2012), pp 591–780.

- weighted average pricing caps—these allow flexibility in individual tariffs within an overall ceiling (used in the NSW, Victorian and South Australian networks); and
- average or maximum revenue caps—these set a ceiling on revenue that may be recovered during a regulatory period (used in Queensland, the ACT and Tasmanian networks).[6]

4.15 For either method, the AER must forecast the revenue requirement of a business to cover its efficient costs and provide a commercial return. The AER uses a building block model that accounts for a network's efficient operating and maintenance expenditure, capital expenditure, asset depreciation costs and taxation liabilities, as well as commercial return on capital.

4.16 Under the NEL, network businesses can apply to the Australian Competition Tribunal for review of an AER determination (a limited merits review). The mechanism was introduced on 1 January 2008 and its purpose is to provide parties affected by the decisions of the energy regulator—primarily transmission and distribution network businesses—with appropriate recourse to a review mechanism. There are limits placed on this mechanism, aimed at avoiding revisiting decisions which have been reached after extensive consultative processes, and minimising uncertainty.[7]

4.17 Of 72 matters that have been taken to the Tribunal by network service providers since 2008, network businesses were successful in 58 per cent of matters raised. In approximately 26 per cent of matters, the original decision was affirmed. The Tribunal's decision to remit matters to the regulator for re-determination affected approximately 10 per cent of matters raised.[8]

Criticisms of the current regulatory system

4.18 As detailed in Chapter 3, a large portion of recent electricity price increases have been attributed to rising costs in network services. A widely held view amongst submitters and witnesses was that regulatory failings have allowed network costs to increase and to be passed on to consumers.[9]

---

6 AER, *State of the energy market: 2011*, ACCC, Canberra, 2011, p. 57.

7 SCER, *Limited Merits Review*, available: www.scer.gov.au/workstreams/energy-market-reform/limited-merits-review/ (accessed 16 October 2012).

8 Electricity Networks Association (ENA), *Submission to the Limited Merits Review*, http://www.scer.gov.au/files/2012/06/ENA-Supplementary-Letter-and-Submission-Tribunal-Review-Summary-22-June-2012.pdf (accessed 29 October 2012).

9 For example see Independent Pricing and Regulatory Tribunal (IPART) NSW, *Submission 28*, p. 4; Origin, *Submission 47*, p. 3; Alinta Energy, *Submission 49*, p. 1; EnerNOC, *Submission 50*, p. 1; and Energy Users Association of Australia (EUAA), *Submission 56*, p. 1; and Mr Andrew Reeves, Chairman, AER, *Proof Committee Hansard*, 27 September 2012, p. 1.

4.19 For example, the NSW Independent Pricing and Regulatory Tribunal (IPART), which is responsible for regulating electricity retail prices for small consumers in NSW, informed the committee that it:

> …consider[s] that recent network cost increases, which are responsible for most of the recent retail price increases, may be higher than necessary due to aspects of the regulatory framework which are contributing to inefficient outcomes.[10]

4.20 Similarly, the Consumer Action Law Centre (CALC) submitted that 'the regulation of monopoly infrastructure and the limited ability of the regulatory framework to limit ongoing prices' is one of the drivers for the ongoing price rises.[11]

4.21 Professor Ross Garnaut stressed that:

> The big increases in Australian electricity prices began in 2006 with the establishment of a new price regulatory system. This new regulatory system was the culmination of a structural change in the Australian electricity market in which generation, high-voltage transmission, distribution to users and retail sales to small users were placed under separate ownership and institutional arrangements.[12]

4.22 The AER informed the committee that 'weaknesses in the regulatory framework—that is, the rules that set out how the AER must regulate prices—have led to price increases beyond what has been necessary for a safe and reliable supply'.[13]

4.23 Perceived failures in the regulation of the NEM were a recurring theme throughout the inquiry. In particular, incentives to over-invest in network infrastructure, a lack of resources on behalf of the AER and the intent of the National Electricity Objective (NEO) were key concerns. These are discussed below.

Incentives to over-invest in network infrastructure

4.24 The committee received lots of evidence that the current regulatory framework creates incentives to over-invest in network infrastructure ("gold-plate")[14] (see also Chapter 3). Two major incentives to over-invest raised during the course of the inquiry were the rates of return permitted for network service providers (NSPs) and reliability standards.

---

10 IPART, S*ubmission 35*, p. 4.

11 Consumer Action Law Centre (CALC), *Submission 24*, pp 1–2.

12 Professor Ross Garnaut, *Proof Committee Hansard*, 9 October 2012, p. 1.

13 Mr Andrew Reeves, Chairman, AER, *Proof Committee Hansard*, 27 September 2012, p. 1.

14 For example see Professor Ross Garnaut, *Proof Committee Hansard*, 9 October 2012, p. 1; AEMO, *Submission 39*, p. 3; Mr Andrew Reeves, Chairman, AER, *Proof Committee Hansard*, 27 September 2012, p. 1; Mr Robert Murray-Leach, Chief Executive Officer, Energy Efficiency Council (EEC), *Proof Committee Hansard*, 27 September 2012, pp 60–61; and Mr Bruce Mountain, *Submission 38*, p. 4.

Rates of return

4.25 Professor Garnaut identified what many considered to be a core problem:

> Where we went wrong is: we adopted a rate-of-return regulation of price, and the rate of return was set too high. A lot of work has been done in economics dating back to a famous paper in the *American Economic Review* in 1951 by Averch and Johnson, warning about rate-of-return regulation and noting that if you set the rate of return too high you will get wasteful overinvestment and a ratcheting-up of prices. It is that classic problem that is at the core of the Australian electricity price increases of the past half-dozen years.[15]

4.26 Professor Garnaut continued:

> It is basically a riskless rate of return; there is not even exposure to the market, so that if demand falls, price is increased to make sure that companies get their guaranteed rate of return. So, as the demand price has fallen, prices have had to be increased even more than the otherwise would have been. Of course, if price then goes up in response to demand falls, then demand falls even more. A completely unsustainable situation can emerge and I think that we are in that unsustainable situation now.[16]

4.27 It was also argued by the CALC that the revenue generated by NSPs is facilitated by the current regulatory framework:

> At the network level, which is monopoly regulated, price increases are driven by not only a need for new investment to replace the ageing infrastructure and the well-documented peak demand problem but also the regulatory system itself which has been shown to have a limited ability to limit ongoing cost increases and may actually encourage the building of assets where cheaper options are possible.[17]

4.28 Mr Bruce Mountain submitted that the existing regulatory environment is not working and some significant changes are required.[18] Mr Mountain argued that consideration needs to be given to the ownership structure of network businesses and the continued application of five year price controls.[19] He further claimed that:

> Institutional arrangements also merit review. Candid consideration of the political economy of economic regulation by a federal agency, of the income and profits of state government owned service providers is needed.[20]

---

15 Professor Ross Garnaut, *Proof Committee Hansard*, 9 October 2012, p. 1.

16 Professor Ross Garnaut, *Proof Committee Hansard*, 9 October 2012, p. 2.

17 Ms Catriona Lowe, Co-Chief Executive Officer, CALC, *Proof Committee Hansard*, 27 September 2012, p. 33.

18 Mr Bruce Mountain, *Submission 38*, p. 21.

19 Mr Bruce Mountain, *Submission 38*, pp 22–23.

20 Mr Bruce Mountain, *Submission 38*, p. 23.

4.29 Network businesses strongly refuted claims that their rates of return were inefficient or unreasonable.[21] They opined that the current regulatory regime does not encourage over-investment and instead rewards efficient and effective investment:[22]

> …I believe that the regulatory regime at present provides incentives for businesses to defer capital expenditure rather than to over-invest. In fact, the transmission businesses have been actively seeking to defer investments. I give two examples here. Powerlink in Queensland had diverted construction of its first 500kV circuit by a period of four years. That is around $380 million to $420 million of expenditure. TransGrid New South Wales has sought to defer projects. A major supply project to the west of Sydney was deferred for a year from 2009. We are currently building a project in Western Sydney which we have pushed back through contracting demand-side support for it, and we have also just recently reviewed two major commission line projects in the far north of the state and on the mid-north coast. We are seeking to defer both of those projects for a number of years. I would suggest that the incentive regime encouraged commercially-focused businesses to not build capital expenditure, and the evidence points to that being a fact.[23]

4.30 Grid Australia, the peak body representing the owners of all major electricity transmission networks in the NEM and in Western Australia, argued that the current incentive-based approach to regulation developed over the past 15 years is sound policy.[24] According to Grid Australia, the current rules 'largely get the balance right'.[25]

4.31 Similarly, the Energy Networks Association (ENA), the peak body representing network businesses, argued that the current system does not allow for wasteful investment:

> …there is a decision made by the regulator about what is an appropriate level of capital expenditure to make over a five-year regulatory cycle. The capital budget and the operating budgets are approved by the regulator in advance on the basis of forecasts. There is not a capacity to simply invent projects. All the proposals are backed by a solid business case. They are assessed by the regulator and the regulator has on all occasions reduced those bids to what they think is the appropriate level. Sometimes those reductions in the capex budget have been significant; sometimes they have been as high as 30 or 40 per cent on the basis of the regulator's best judgement about what the appropriate capital expenditure is.[26]

---

21 For example see Grid Australia, *Submission 51*, p. 6; and Dr Malcolm Roberts, Chief Executive, ENA, *Proof Committee Hansard*, 9 October 2012, p. 23.

22 For example see Dr Malcolm Roberts, Chief Executive, ENA, *Proof Committee Hansard*, 9 October 2012, p. 23.

23 Mr Peter McIntyre, Chairman, Grid Australia, *Proof Committee Hansard*, 25 September 2012, p. 35.

24 Grid Australia, *Submission 51*, p. 6.

25 Grid Australia, *Submission 51*, p. 7.

26 Dr Malcolm Roberts, Chief Executive, ENA, *Proof Committee Hansard*, 9 October 2012, p. 25.

4.32 The ENA also argued that government policy should concentrate on the real causes for higher network costs rather than crudely imposing more regulation on network businesses.[27] The ENA argued that changes to the whole electricity industry are needed to stem increasing electricity costs. According the ENA:

> Governments have baulked at introducing the retail price reforms essential to curbing the growth of peak demand. Mandatory reliability standards have succeeded in improving service delivery to customers but arguably at a cost which sections of the community now find difficult to absorb. The roll out of smart meters, so important to empowering customers, has stopped at the Victorian border. The regulatory system does not provide the commercial incentives necessary to accelerate demand side participation.[28]

4.33 Both the Australian Energy Market Commission (AEMC) and AER believed that the current regulatory framework incentivises over-investment because of the relationship between consumption volumes and profits, and the potential for over recovery of revenue. In the *Power of Choice* draft report (PoC report), the AEMC noted that:

> [W]hen a network business develops tariffs which are based on consumption volumes, its profits could depend upon the level of actual volumes. Under such a tariff structure, the business would have no incentive to pursue any form of DSP project (or energy efficiency project) which decreases volumes.[29]

4.34 Analysis by the AER indicates that there is the potential for substantial over recovery of revenue:

> In the Victorian 2006–10 regulatory control period, the AER asserted there was over recovery of revenue of $568 million (in 2010 values) above the adjusted forecast. This represents an over recovery of revenue of 8.28 per cent annually for each distribution business.[30]

Reliability standards

4.35 Reliability standards were another commonly cited defence for over-investment.[31] In response to claims that NSPs are the 'villains of the industry' who gold-plate and profiteer, Mr Peter McIntyre, Chairman of Grid Australia, retorted:

---

27 ENA, *Submission 64*, p. 1.

28 ENA, *Submission 64*, p. 1.

29 Australian Energy Market Commission (AEMC), *Power of Choice – giving consumers option in the way they use electricity draft report*, 6 September 2012, p. 127.

30 AEMC, *Power of Choice – giving consumers option in the way they use electricity draft report*, 6 September 2012, p. 127, from the AER, *Preliminary positions, Framework and Approach Paper for NSW Distribution businesses*, June 2012, p.55.

31 See for example Mr Andrew Reeves, Chairman, AER, *Proof Committee Hansard*, 27 September 2012, p. 4; Mr Nino Ficca, Managing Director, SP AusNet, *Proof Committee Hansard*, 27 September 2012, p. 13; and Dr Malcolm Roberts, Chief Executive, ENA, *Proof Committee Hansard*, 9 October 2012, p. 23.

> I would ask on what basis they make that assertion. At a transmission level, our network in this country is built consistent with the standards that apply in almost all First World countries. The reliability you get in Australia is consistent with what you would get and expect in Japan, England, America or any other First World country. I do not regard that as gold-plated at all. In fact, the regulatory regime requires us to demonstrate that each investment is efficient at the time we make it, so in essence I do not agree with that comment at all.[32]

4.36 The ENA,[33] SP AusNet,[34] Energex,[35] and Ergon Energy Corporation[36] argued that reliability standards had required network investment and thus had a role in recent electricity price rises.

4.37 Other submitters and witnesses acknowledged the need for reliability while emphasising that reliability standards must be set in the interests of consumers:

> What we are really advocating is to also include reference to affordable access in there, because, if we have the most efficient market, one that is reliable, but people cannot afford to access it, we are not sure how that is in the long-term interests of consumers.[37]

4.38 And:

> The reliability standards set out in the network operators' licence conditions reflect judgements made by Government (on the community's behalf) of the level of service (and the associated cost) valued by the community. In determining these standards governments should consult with electricity consumers—both business and residential customers—to understand the different benefits they enjoy from a more reliable supply of electricity and the extent they would be willing to pay for these benefits through higher energy prices.[38]

4.39 The Department of Resources, Energy and Tourism (DRET) advised the committee that reliability standards are 'currently under examination by the Australian Energy Market Commission' and that this process 'looked specifically first at

---

32 Mr Peter McIntyre, Chairman, Grid Australia, *Proof Committee Hansard*, 25 September 2012, p. 41.

33 Dr Malcolm Roberts, Chief Executive, ENA, *Proof Committee Hansard*, 9 October 2012, pp 23 and 30.

34 Mr Nino Ficca, Managing Director, SP AusNet, *Proof Committee Hansard*, 27 September 2012, p. 13.

35 Mr Darren Busine, Acting Chief Executive Officer, Energex Ltd, *Proof Committee Hansard*, 3 October 2012, p. 27.

36 Mr Ian McLeod, Chief Executive, Ergon Energy Corporation Ltd, *Proof Committee Hansard*, 3 October 2012, p. 28.

37 Ms Carolyn Hodge, Senior Policy Officer, Energy and Water Consumers' Advocacy Program, PIAC, *Proof Committee Hansard*, 25 September 2012, p. 61.

38 IPART, *Submission 35*, p. 7.

distribution standards within New South Wales, and it is now moving on to consideration of national distribution reliability standards'.[39]

Removing incentives to over-invest in network infrastructure

4.40 A variety of ways in which incentives to over-invest in network infrastructure could be addressed have been suggested, during this inquiry and elsewhere (such as the *Power of Choice* review and the *Economic Regulation of Network Service Providers* rule change).

4.41 The Australian Energy Market Operator (AEMO) recommended that:

> Regulatory arrangements should focus on rewarding businesses for supplying services, focusing on providing returns for valued services and not for the number of assets built. To complement a revenue-setting arrangement that focuses more on rewarding businesses for the services provided, a planning approach which considers the customer's value on the service provided from the network investment would provide a better price-service balance.[40]

4.42 Dr Paul Troughton of EnerNOC advised the committee that "a carrot and stick" approach to regulation is needed, offering rewards where network businesses make savings and creating disincentives when efficient investment does not occur. Dr Troughton stated:

> The networks have a strong preference for going out and building infrastructure. Everyone recognises this, and we need some way of fixing this. Basically, I think it means we need to have a more hands-on regulatory approach. It has been very laid-back, "We'll trust that they know what they're doing", a sort of broad-brush approach. It needs to be more hands-on, it needs to have targets and it needs to have sticks and carrots as well. The idea is that it should be self-evident to the network businesses…that it is in their best interests to avoid doing capital works where it is more efficient to do something else.[41]

Committee comment

4.43 Whilst acknowledging that electricity network infrastructure is a long-lived capital asset that requires maintenance and upgrading (particularly as it ages), as well as the relationship between reliability standards and network investment, the committee is swayed by the weight of evidence suggesting that the current regulatory framework not only permits but incentivises inefficient over-investment in network infrastructure. The committee considers that the current regulations, particularly in regard to rates of return, have substantially driven electricity prices directly and have effectively "poured petrol" on other smouldering price pressures (see Chapter 3).

---

39 Mr Brendan Morling, Head, Energy Division, Department of Resources, Energy and Tourism (DRET), *Proof Committee Hansard*, 9 October 2012, p. 70.

40 AEMO, *Submission 39*, p. 3.

41 Dr Paul Troughton, Manager of Regulatory Affairs, EnerNOC, *Proof Committee Hansard*, 27 September 2012, p. 68.

4.44 The committee is convinced that significant changes are required in setting rates of return for network businesses. The committee therefore recommends that the process for determining rates of return must be more robust and based on guidelines developed and reviewed every three years in consultation with stakeholders. The guidelines should include appropriate frameworks for total expenditure (totex), capital expenditure (capex) and operational expenditure (opex). The guidelines should also ensure that frameworks for determining return on debt and equity are appropriate in the post-GFC context. Further, the framework should permit the AER to have regard to the effects of inefficiently delaying or bringing forward capital expenditure.

4.45 On this basis, the committee supports the proposed changes in the AEMC *Economic Regulation of Network Service Providers* rule change that seek to amend the ways in which return on capital, return on debt, opex and capex are estimated or forecast for NSPs. It is the committee's understanding, however, that the rule change does not propose to include a requirement for totex to be estimated and considered by the AER: it is the committee's view that totex should be considered by the AER when making network determinations.

Recommendation 3

4.46 **The committee recommends that:**

- **rates of return for network service providers are estimated using a robust process based on guidelines developed and reviewed every three years in consultation with stakeholders;**
- **the proposed amendments in the AEMC *Economic Regulation of Network Service Providers* rule change regarding methods for forecasting return on capital, return on debt, opex and capex are implemented as part of that rule change process;**
- **the AER should also be required to consider forecast totex when making network determinations; and**
- **SCER direct the AEMC to examine arrangements for AEMO to be the single planning agency for the NEM with responsibility for forecasting, network planning, national reliability standards and operating tenders for integrated assessment of network and non-network options.**

4.47 With respect to the relationship between network businesses' profits and electricity consumption, the committee notes the recommendation in the PoC report that 'the pricing principles in Chapter 6 of the NER [dealing with Economic Regulation of Distribution Services] need to be amended to provide greater guidance on how network businesses should set their tariffs to reflect the costs' in an attempt to decouple network profits from consumption volumes.[42] The committee supports attempts to decouple network revenues from energy volumes and therefore recommends that the AEMC implement an appropriate rule change.

42 AEMC, *Power of Choice – giving consumers option in the way they use electricity draft report*, 6 September 2012, p. 127.

Recommendation 4

4.48 **The committee recommends that:**

- **the AEMC implement the rule change proposed in the *Power of Choice* draft report to amend the pricing principles of Chapter 6 of the NER so that greater guidance is provided on how network businesses should set their tariffs to reflect costs; and**
- **the AER implement measures to decouple network revenues and energy volumes.**

4.49 The committee acknowledges the need for reliability standards and is aware that consumers broadly do not understand the relationship between reliability, network infrastructure and electricity price rises. The committee supports the ongoing use of reliability standards but also supports the calls from some stakeholders for these to be set in a way that upholds the long term interests of consumers.

4.50 The committee welcomes the AEMC's examination of reliability standards in NSW and its consideration of national distribution reliability standards. As part of this process, the committee believes that the AEMC should independently set national reliability standards which take into account consumers' perceived value of reliability. This would ensure that the interests of consumers are central to reliability standards, and would bring greater transparency to and confidence in these standards.

4.51 Further, the committee believes that national reliability standards should be set independently of those businesses that derive income from network infrastructure investment (that is NSPs) to address any perceived or actual conflict of interest.

Recommendation 5

4.52 **The committee recommends that the AEMC set and AEMO implement national reliability standards that take into account consumers' perceived value of reliability and in a way that is independent of businesses that derive income from network infrastructure.**

Ex post scrutiny powers

4.53 During the course of the inquiry, the committee was informed that the Economic Regulation Authority (ERA) (Western Australia) has scrutiny powers that enable it to conduct ex post reviews of capex by network businesses in the market it regulates:

> …the ERA's powers under the Electricity Networks Access Code allow it to exclude capital expenditure from Western Power's [the Western Australian electricity network provider] regulatory asset base that it considers inefficient. This power, which extends to forecast investment (ex ante), *and to actual investment* (ex post), has helped to ensure that capital expenditure is efficient. By way of example, $261 million ($ as at 30 June 2009) of

> incurred capital expenditure from the first access arrangement was disallowed in the second access arrangement decision.[43]

4.54 It was subsequently recommended to the committee that similar powers be given to the AER to allow it to scrutinise actual network expenditure against that forecast.[44] For example, Professor Garnaut stated:

> …there should be closer interrogation of proposals for investment, and ex post review of what actually happened in implementation of those proposals is appropriate.[45]

4.55 In direct response to the question as to whether the AER should be given ex post scrutiny powers, the AER told the committee:

> When it redesigned the regulatory framework in 2006, the AEMC decided against the use of ex-post reviews of capex efficiency on grounds that they are intrusive and undermine regulatory certainty. Instead, the AEMC preferred to rely on ex ante measures to create incentives for efficient expenditure.
>
> The AEMC has subsequently revised its position. The draft determination on the network regulation rule change proposes the use of ex-post reviews of capex efficiency. If the AER forms the view that the network business has spent in excess of efficient levels, then the AER would be able to preclude inefficiently incurred capex (above the capex allowance) from being rolled into the Regulatory Asset Base (RAB). The AEMC also proposes to require the AER to make a statement on the efficiency of capex going into the RAB in its draft and final determination for each network business.
>
> …
>
> The AEMC's proposed approach to ex-post reviews provides an appropriate balance between providing investment certainty for network businesses and providing incentives to invest efficiently. Network businesses would have flexibility to spend in excess of allowances when necessary while retaining incentives to incur only efficient capex.
>
> …
>
> The use of ex-post reviews is likely to make network businesses more cautious about incurring capex in excess of their regulatory allowances. It removes the risk—which is present under the current regime—that network businesses may be incentivised to spend in excess of allowances.[46]

---

43 Economic Regulation Authority (ERA) (WA), *Submission 81*, p. 3.

44 See Professor Ross Garnaut, *Proof Committee Hansard*, 9 October 2012, p. 3; and Mr Andrew Reeves, Chairman, AER, *Proof Committee Hansard*, 27 September 2012, pp 1–2.

45 Professor Ross Garnaut, *Proof Committee Hansard*, 9 October 2012, p. 3.

46 AER, *Answer to written question on notice*, pp 3–4.

Committee comment

4.56 It appears that ex post scrutiny powers would strengthen the AER's ability to regulate NSPs and network investment. As noted by the AER itself, such scrutiny powers would also, at least in part, address the current incentives for network businesses to over-invest in network infrastructure. The committee notes that the current AEMC *Economic Regulation of Network Service Providers* rule change proposes to give the AER the ability to conduct 'ex post reviews of capex efficiency' and, in the AER's words, this 'approach to ex-post reviews provides an appropriate balance between providing investment certainty for network businesses and providing incentives to invest efficiently'.[47]

4.57 The committee agrees that the AER should be given ex post scrutiny powers and therefore supports this proposal in the AEMC rule change.

Recommendation 6

4.58 **The committee recommends that the proposal in the AEMC *Economic Regulation of Network Service Providers* rule change to give the AER ex post scrutiny powers is implemented as part of that rule change process.**

Limited merits review

4.59 Another aspect of the AER's ability to regulate network businesses that was considered deficient was the limited merits review process and network businesses' ability to challenge the regulator's determinations (see also Chapter 3). The committee heard that it was too easy for NSPs to challenge the AER's decisions, that NSPs frequently did so and more often than not were successful in having the AER's decisions overturned.[48]

4.60 Professor Garnaut considered that the regulator would be more effective at controlling excessive price increases if it was able to counter-appeal decisions made by the Australian Competition Tribunal in the limited merits review process.[49] Professor Garnaut suggested that this 'unusual...imbalance' should be removed:

> It [the AER's decision] can be appealed by players in the industry and there is no opportunity for counter appeal by the regulator. So removing that unusual business imbalance, in which those who want higher prices can appeal the regulated outcomes but there cannot be a general counter appeal by the regulator, would make a contribution. If that were removed it might simply be a matter of the regulator applying, more rigorously, commercial and economic principles, because there is no doubt that the rate of return has been set substantially in excess of the supply price of investment to this industry.[50]

---

47 AER, *Answers to written questions on notice*, pp 3–4.

48 See for example Mr Brian Green, Chairman, EUAA, *Proof Committee Hansard*, 27 September 2012, p. 27; EUAA, *Submission 55*, p. 1; and IPART, *Submission 35*, p. 6.

49 Professor Ross Garnaut, *Proof Committee Hansard*, 9 October 2012, p. 2.

50 Professor Ross Garnaut, *Proof Committee Hansard*, 9 October 2012, p. 2.

4.61 The limited merits review regime was seen by IPART as a beneficial process for allowing network businesses to review decisions made by the national energy regulator.[51] However, IPART also felt that the limited merits review did not allow the Australian Competition Tribunal to properly consider the merits of individual component decisions in the context of the AER's whole determination in respect to the National Electricity Objective.[52]

4.62 IPART opined that where a network business contests a specific regulatory decision, the review body should be able to consider this decision in the context of the whole determination. According to IPART:

> This would give further incentive to the network businesses in considering whether they could end up worse off rather than, as at present, knowing that they will be neutral or better off, as a result of a review.[53]

4.63 IPART also considered that customers should play a greater role in the merits review process.[54]

4.64 IPART's views appear in part to be in agreement with recommendations in the SCER Expert Panel *Review of the Limited Merits Review Regime Stage Two Report*.[55] At the direction of SCER, this independent expert panel—comprising Professor George Yarrow, the Hon Michael Egan and Dr John Tamblyn—conducted a review of the limited merits regime from March to October 2012.

4.65 The *Review of the Limited Merits Review Regime Stage Two Report* made a number of recommendations, including that:

- the aim of the merits review regime should be to promote efficiency in the investment, operation and use of networks;
- there should be a single ground for appeal;
- applications for review should be open to regulated network businesses, energy ministers, consumer representatives and other parties with a material interest in the decision; and
- the appeals function of the Australian Competition Tribunal should be transferred to a new review body that is fully administrative in character.[56]

---

51 IPART, *Submission 35*, p. 6.

52 IPART, *Submission 35*, p. 6.

53 IPART, *Submission 35*, p. 6.

54 IPART, *Submission 35*, p. 6.

55 Professor G. Yarrow, the Hon. M. Egan and Dr J. Tamblyn, *Review of the Limited Merits Review Regime: Stage Two Report*, 30 September 2012.

56 Professor G. Yarrow, the Hon. M. Egan and Dr J. Tamblyn, *Review of the Limited Merits Review Regime: Stage Two Report*, 30 September 2012, pp 37–56.

Committee comment

4.66 The committee welcomes the independent expert panel's *Review of the Limited Merits Review Regime Stage Two Report* and acknowledges that many of the recommendations therein may address some of the concerns raised about the limited merits review regime as it currently operates. The committee urges SCER to thoroughly consider the applicability of the recommendations in the report, particularly where implementing these may improve regulation of the NEM in the interests of consumers.

Resourcing the AER

4.67 The committee heard criticism about the AER's resourcing, with some submitters and witnesses suggesting that the AER did not have the skills and expertise necessary for it to fulfil its role.

4.68 Grid Australia believed that greater resources for the AER would assist the regulator to interrogate data and information presented to it by NSPs.[57] The Chairman of Grid Australia, Mr Peter McIntyre, told the committee:

> …Grid Australia members would like to see the Australian Energy Regulator strengthened to become a highly credible, independent body, so that it can make well-informed assessments that balance the needs of the sector and consumers. We believe this can be achieved through greater resources being allocated to the AER, better corporate knowledge and skills to ensure competency, and greater credibility within the investment community.[58]

4.69 Grid Australia highlighted that the electricity networks regulated by the AER are worth billions of dollars and therefore the regulator must have the technical skills required to understand the business cases of network operators. According to Mr McIntyre:

> The networks [the AER actually regulates], in gas and electricity, are worth about $65 billion, so I think the industry expects them to have the knowledge of the industry, not only the economic and legal but also the engineering competence, and the ability to engage with businesses in a deep and constructive way to truly understand the businesses' needs and business cases.[59]

4.70 Dr Paul Troughton of EnerNOC suggested that network businesses attempt to overwhelm the AER with detail in order to prevent the regulator from making effective decisions:

---

57 Grid Australia, *Submission 52,* p. 6.

58 Mr Peter McIntyre, Chairman, Grid Australia, *Proof Committee Hansard,* 25 September 2012, p. 35.

59 Mr Peter McIntyre, Chairman, Grid Australia, *Proof Committee Hansard,* 25 September 2012, p. 39.

> If I were a regulated business then my best dollar spent would be in trying to swamp the regulator with information so that they could not make effective decisions.
>
> …
>
> If you look at what is submitted to the AER for each of these regulatory determinations, there is a proposal from each network and a response, and then you get various extra iterations. There are hundreds of thousands of pages, from each network, of argument and backup information. It is an enormous task. It is very depressing to think that all these people are wasting this time doing that. Much of it is not actually dealing with the main issues; it is throwing lots of miscellaneous detail.[60]

4.71 The Total Environment Centre (TEC) emphasised that while it found:

> …AER staff to be highly capable and professional…there just are not enough of them and that they do not have enough power. So more resources to the AER would be a good thing.[61]

4.72 Energex suggested that while the AER may not have all of the necessary expertise "in house":

> …my experience with regulators is that they engage pretty good consultants who do a very thorough job in reviewing our forward plans. So it seems to me that they are quite well resourced to review our forward capital plans, and certainly they also engage the best consultants to review our energy and demand forecast as well. So my observation is that they have certainly brought to bear the best consultants.[62]

4.73 Professor Garnaut argued that the AER is adequately resourced, but is inhibited by the regulatory framework in which it operates. According to Professor Garnaut:

> …there are very good people there who have been hamstrung to a considerable extent by the rules, which allow people in the industry to appeal a decision but do not allow the regulator to make a counter-appeal following proposals for change from people in the industry. Evening up that balance will equip the regulator better. It is unlikely that things would not be improved through better resourcing because it is a complicated question, and a lot of resources will be needed to do it properly. Analysis is the first thing required, and so we would have to make sure we had the right types of analytic capacity. The ACCC is a highly reputed body in Australia and the AER is part of that system. I recommend that the committee make sure

60 Dr Paul Troughton, Manager of Regulatory Affairs, EnerNOC, *Proof Committee Hansard*, 27 September 2012, p. 71.

61 Dr Mark Byrne, Energy Market Advocate, Total Environment Centre (TEC), *Proof Committee Hansard*, 25 September 2012, p. 50.

62 Mr Peter Price, Executive General Manager, Network Performance, Energex Ltd, *Proof Committee Hansard*, 3 October 2012, p. 39.

> it is well resourced, but I am not making any comment about it being poorly resourced at this stage.[63]

4.74 In responding to claims about its skills and expertise, the AER informed the committee that it is bringing more skilled workers into the organisation and relying less on consultants. Chairman of the AER, Mr Andrew Reeves, told the committee:

> First of all, our practice has been to engage engineering consultants to inform the regulator. We will continue with that but we are also moving on from that to bring more skills in-house. We acknowledge the concerns of the business. One of the positions put to us has been that the regulator is being given more discretion and it is important that the regulator exercise that discretion with the confidence of the community. We are addressing some of those factors that have been raised by bringing some of the additional technical skills in-house.[64]

Committee comment

4.75 The committee shares the concerns raised about the adequacy of the AER's resourcing. The AER's resourcing—as it relates to the regulator's ability to effectively perform its role—should be the subject of ongoing consideration. The committee is also conscious that it, and others, have recommended expanded or additional powers for the regulator and therefore recommends that the AER should be allocated greater funding, expertise and accountability, particularly in light of any additional responsibilities it is given.

Recommendation 7

4.76 **The committee recommends that the AER receive additional funding, expertise and accountability including that in recommendations of the *Limited Merits Review Regime Stage Two Report* in relation to appeals processes.**

Intent of the National Electricity Objective

4.77 The National Electricity Objective (NEO), as set out in the NEL, is:

> 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.[65]

4.78 Some submitters and witnesses were concerned that the NEO does not sufficiently take into account the interests of consumers and on this basis warrants change. Proposed changes to the NEO for the purpose of strengthening consumer protections are discussed in Chapter 6.

---

63 Professor Ross Garnaut, *Proof Committee Hansard*, 9 October 2012, p. 5.

64 Mr Andrew Reeves, Chairman, AER, *Proof Committee Hansard*, 25 September 2012, p. 4.

65 NEL, section 7.

4.79 The committee heard from other submitters and witnesses that the NEO should be amended to include an environmental objective.[66] The TEC claimed:

> One of the great deficiencies of the NEM is that it is focused only on delivering the energy with the cheapest short-term marginal cost of production. The NEM is ill-suited to recognise the long term economic as well as environmental benefits of energy storage, local generation, and even energy efficiency.
>
> Further, the NEO does not support climate and renewable energy policies, and struggles when their implementation appears to conflict with the overarching objective of the NEM…Regulators and energy ministers often complain that introducing an environmental criterion to the NEO would make their work difficult, if not impossible. This knee-jerk reaction flies in the face of evidence both from other OECD countries where environmental objectives feature in electricity network regulatory regimes…TEC does not propose anything so radical…we merely ask that in addition to the current 5 criteria, "greenhouse gas emissions and intensity" is added.[67]

4.80 The AEMC offered the following response to suggestions that the NEO should include an environmental objective:

> We of course would apply and pursue whatever objective parliament see fit to give to us. This issue is not a new one. The way I think about it is with a football team analogy: everyone on the team has the same objective; it is just that we have different positions and different roles. Apologies to those who do not come from rugby states but, if the bonehead thinks that the five-eighth is not doing a good job, the worst thing he can do is try and do the five-eighth's job for him. Our role in relation to rules that relate to economic efficiency is part of one role in what people expect out of this sector. There are other manifestations of government that obviously deal with environmental issues in a systemic sense, such as climate change and, in a local sense, land use planning and emissions—NOX and SOX and salts and things from the plants. You could make the same comment about suggestions around social objectives. Again, there are other parts of government that address that. I really say that as an explanation. Because these national electricity objectives drive what we do, that is not to say that we do not care about those other aspects; it is just that there are other parts of government that have responsibility and have the roles for those. Just like a football team, it works best when people in different roles coordinate with one another. I think part of our role is to inform those other parts of government what the effect on this efficiency objective is of things they are thinking about and, certainly in relation to social objectives, providing

66 See TEC, *Submission 72*, pp 14–15; Professor Stuart White, Director, Institute for Sustainable Futures, University of Technology Sydney (UTS), *Proof Committee Hansard*, 25 October 2012, p. 26; and Dr Paul Troughton, Manager of Regulatory Affairs, EnerNOC Pty Ltd, *Proof Committee Hansard*, 27 September 2012, pp 70–71.

67 TEC, *Submission 72*, pp 14–15.

advice to governments so that the qualitative or social value judgements are as informed as possible.[68]

Committee comment

4.81 The committee agrees that better alignment between environmental policies, in particular climate change policy, and the NEM to ensure these are not incongruent and working at odds would be beneficial. To this end, the committee recommends that the AEMC consider how the NEO could be amended in a way that would ensure operation and regulation of the electricity market in ways consistent with broader environmental policy objectives.

Recommendation 8

4.82 **The committee recommends that the AEMC consider how broader environmental considerations could better align with the operation and regulation of the NEM.**

68 Mr John Pierce, Chairman, AEMC, *Proof Committee Hansard*, 25 September 2012, p. 16.

Part III

Demand

Chapter 5
Demand

Peak demand

5.1 As discussed in Chapter 3, a significant trend in energy consumption patterns has been the growth of peak demand.

5.2 During the course of the inquiry, peak demand was cited as a key driver of increasing electricity prices and, consequentially, reducing peak demand was identified as a central tenet of any strategy intended to reduce electricity prices.[1] For example, Victorian electricity distribution businesses informed the committee that household electricity consumption has been declining in recent years—a trend set to continue due to 'improving energy efficiency, penetration of rooftop photovoltaic systems, changing consumption patterns in the industrial sector and the response to higher retail electricity prices'.[2] However, these businesses also highlighted that peak consumption has continued to increase 'due largely to increased penetration and use of air conditioning on hot days'.[3]

5.3 Similarly, the Energy Supply Association of Australia (ESAA) demonstrated the relative growth in peak demand in contrast to aggregate demand growth as shown in Figure 5.1.

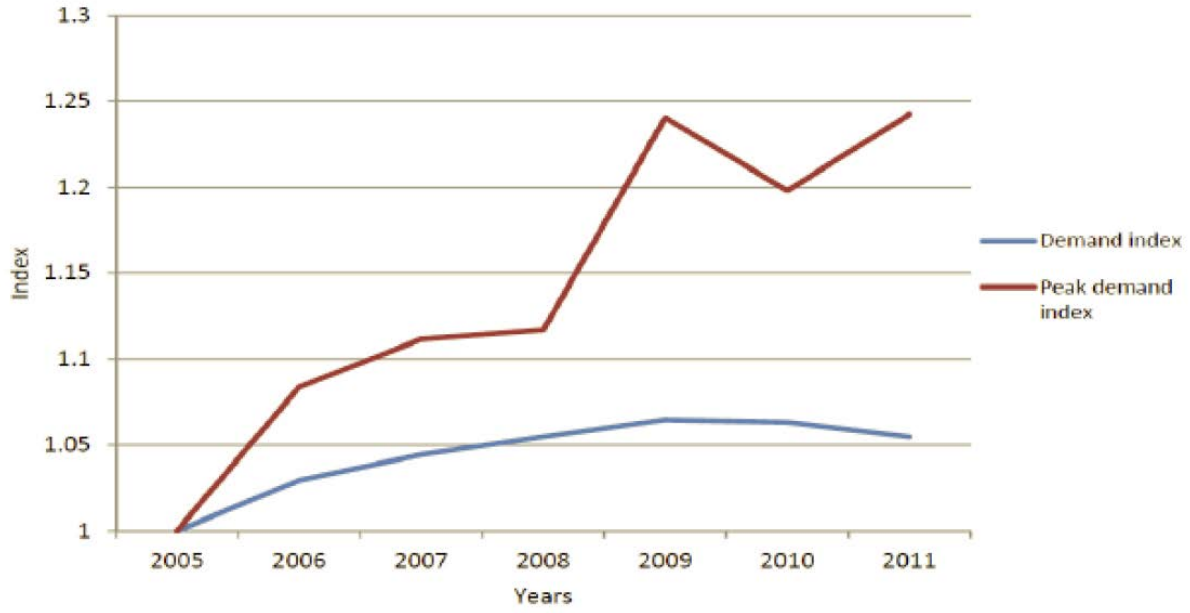
---

1 See for example Professor Stuart White, Director, Institute for Sustainable Futures, University of Technology Sydney (UTS), *Proof Committee Hansard*, 25 September 2012, p. 26; Dr Ian MacGill, 25 September 2012, p. 31; Mr Peter McIntyre, Chairman, Grid Australia, *Proof Committee Hansard*, 25 September 2012, pp 34 and 35; Dr Peter Burn, Director, Public Policy, Australian Industry Group (Ai Group), *Proof Committee Hansard*, 25 September 2012, p. 42; Mr Andrew Reeves, Chairman, Australian Energy Regulator (AER), *Proof Committee Hansard*, 27 September 2012, p. 1; Mr Nino Ficca, Managing Director, SP AusNet, *Proof Committee Hansard*, 27 September 2012, p. 13 and Ms Catriona Lowe, Co-Chief Executive Officer, Consumer Action Law Centre (CALC), *Proof Committee Hansard*, 27 September 2012.

2 Victorian electricity distribution businesses, *Submission 55*, p. 13.

3 Victorian electricity distribution businesses, *Submission 55*, p. 13.

Figure 5.1: Peak versus aggregate demand growth[4]



5.4 As part of its inquiry into electricity network regulatory frameworks, the Productivity Commission highlighted that driving demand away from peak periods could negate significant infrastructure costs, a key contributor to rising electricity prices:

> Demand-side management aims to reduce network and generation costs by changing the pattern of consumption. It usually intends to shift consumption away from peak demand periods, as these drive marginal generation costs and network augmentation. One of the criticisms made by Garnaut (2011) is that network investment has been used too readily in Australia to meet rising peak demand (notwithstanding static or even falling overall electricity consumption), when demand-side management might have been more efficient.
>
> While estimates vary across jurisdictions, around 25 per cent of retail electricity costs are accounted for by temperature driven peak demand events that occur for less than 40 hours per year (NESI 2011). Trials and case studies of demand-side management identify potential reductions in peak demand usually in the order of 5 to 40 per cent. Evidence on how this impacts network spending is limited, but one Australian study suggests avoidable infrastructure costs of around 5 per cent, simply from delaying capital investment on a project by one year through demand response initiatives (CRA 2004).[5]

5.5 However, as mentioned in Chapter 3, whether peak demand has been rising in recent years is the subject of some debate with some evidence suggesting that over the

4 Energy Supply Association of Australia (ESAA), *Submission 76*, p. 5.

5 Productivity Commission, *Electricity Network Regulation Issues Paper*, 23 February 2012, p. 29.

past four years, both summer and winter peak demand has fallen in the National Electricity Market (NEM) states.[6]

5.6 To address rising peak demand, the Productivity Commission examined potential benefits associated with demand management:

> …because it can:
>
> - avoid an inefficiently high rate of peak demand growth, delaying the need for network augmentation and reducing the size of the peak-specific network investments
> - improve the utilisation (and productivity) of supply side capacity by allowing financial incentives to shift the timing of electricity use and reduce the gap between average and peak consumption—achieving allocative efficiency
> - decrease investment in costly peak-generation and reduce the generation costs by reducing reliance on higher cost peaking supply (open cycle gas turbines)
> - improve competition and reduce the ability of an individual generator to exercise market power in the wholesale market during congestion at peak periods…
> - improve supply reliability, including increasing load shedding options and assisting with the restoration of power after loss
> - reduce volatility in demand (and wholesale prices)
> - allow operational efficiencies for network businesses. Including from advanced meter infrastructure [for example smart meters and smart grids], which enables remote access to consumption data, assists with more timely and less costly disconnection and reconnection, and improves network planning and detection of outages
> - in the short term, provide scope for some consumers to receive reduced electricity bills and, in the longer term, could slow the rate of growth of future electricity bills for all consumers.[7]

5.7 The remaining sections of this chapter explore options for managing demand in the Australian electricity market.

Demand management

5.8 The benefits of demand management are well recognised[8] and there are a variety of ways in which demand management can assist consumers to save energy

---

6 Mr Bruce Robertson, Manning Alliance, *Submission 33*.

7 Productivity Commission, *Draft Report: Electricity Networks Regulatory Framework*, October 2012, pp 318–319.

8 See for example Productivity Commission, *Draft Report: Electricity Networks Regulatory* Framework, October 2012 and Australian Energy Market Commission (AEMC), *Power of choice—giving consumers options in the way they use electricity draft report*, 6 September 2012.

and reduce peak demand. A study by Deloitte on behalf of ESAA provided an overview of the benefits from a number of demand management measures as shown in Figure 5.2. In its draft report, the Productivity Commission estimated that 'critical peak pricing would produce savings worth around $100–$250 per household each year'.[9]

Figure 5.2: Total estimated value of gross benefits 2012–13 to 2021–22 (NPV)[10]

Initiative	Low case benefits ($m)	High case benefits ($m)
Time of use pricing	58	193
Critical peak pricing and incentives	385	1,272
Direct load control of air conditioners	200	1,338
Direct load control of pool pumps	188	231
Electric vehicles	60	537
Energy Savings Measures	361	486
Enhanced uptake of Solar PV	300	528
Total gross benefits	**1,551**	**4,585**

Source: Deloitte analysis

5.9 During the course of the inquiry, network businesses, consumer advocacy groups and academics alike recognised the benefits of and role for demand management. Victorian electricity distribution businesses stated:

> While it is early days, demand management will play an increasing role, enabling a reduction in network augmentation costs by reducing the length and extremity of peak demand periods.[11]

5.10 The Consumer Utilities Action Centre (CUAC) saw 'room for demand side participation to increase in the NEM' and was 'broadly supportive of demand side reform to reduce network costs and peak demand'.[12]

9 Productivity Commission, *Draft Report: Electricity Network Regulatory Frameworks*, October 2012, p. 301.

10 ESAA, *Submission 76*, p. 6.

11 Victorian electricity distribution businesses, *Submission 55*, p. 6.

12 Ms Caitlin Whiteman, Research and Policy Advocate, Consumer Utilities Advocacy Centre (CUAC), *Proof Committee Hansard*, 27 September 2012, p. 35.

5.11 Professor Ross Garnaut was also supportive of demand management activities as part of the solution to address the current Australian system that:

> …provides incentives for exacerbating peak demand, because at a time when total demand is falling the only way that the transmission and distribution companies can expand the regulated asset base, and therefore get their guaranteed rate of return over more assets, is by exacerbating peak demand.
>
> In most developed countries efforts are made to diminish peak demand. The curious Australian approach to this—the idiosyncratic Australian approach to this—is one reason why the ratio of peak demand to average demand has been rising quite rapidly in Australia over recent years, when it is falling in much of the rest of the world. Of course it is hugely costly for electricity consumers to have this exacerbation of the peaks.[13]

5.12 The following demand management mechanisms are discussed below:

- cost reflective pricing and smart meters;
- demand side participation in the wholesale market;
- information and consumer empowerment; and
- a range of technological solutions.

Cost reflective pricing and smart meters

5.13 Cost reflective pricing[14] refers to prices which signal the costs of supplying and transporting electricity at different times of the day and / or year to consumers in different locations. Retail prices developed on a cost reflective basis tend to vary by time of day and sometimes by geographical location.[15]

5.14 There is a wide range of cost reflective pricing tariffs including time of use and variations of time of use (such as seasonal time of use); full wholesale price pass through (real time pricing); critical peak pricing; variable peak pricing; peak time rebates and / or incentives; and new forms of network charges that attempt to capture the cost of peak demand (such as capacity based charging).[16]

5.15 In its *Power of Choice* draft report (PoC report), the Australian Energy Market Commission (AEMC) demonstrated the risks and rewards for consumers associated with various tariffs (see Figure 5.3).

---

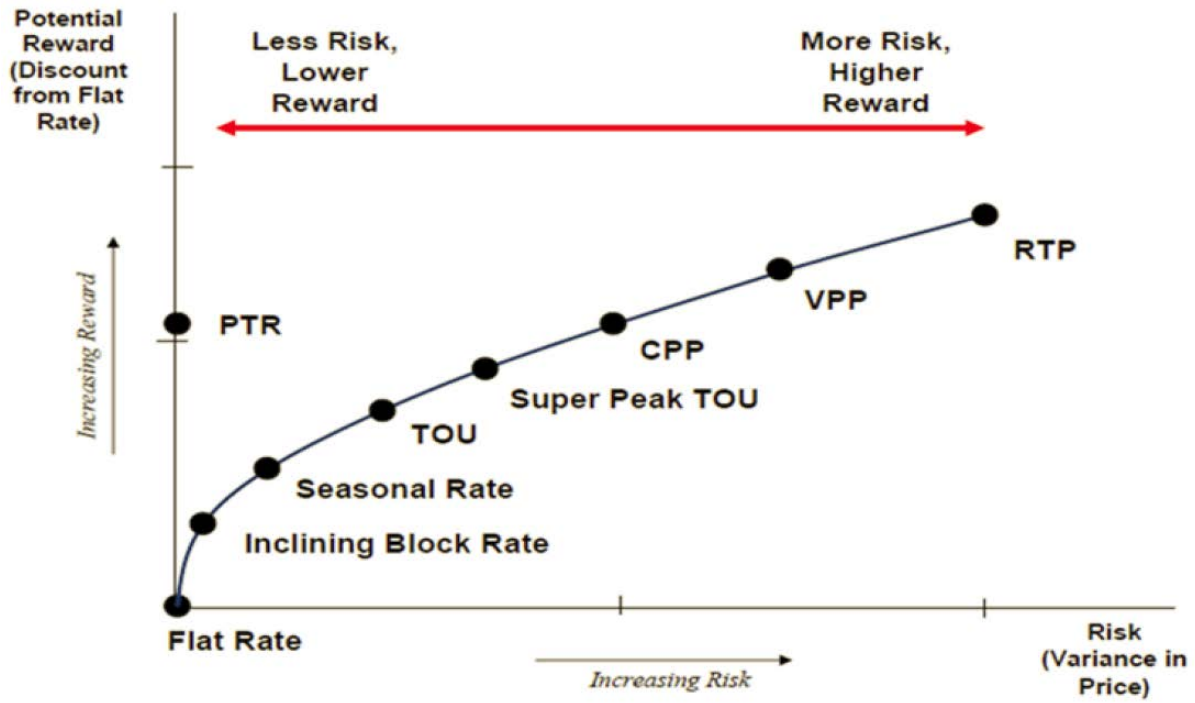
13 Professor Ross Garnaut, *Proof Committee Hansard*, 9 October 2012, p. 3.

14 Also referred to as time variable pricing, time varying pricing and time of use pricing.

15 AEMC, *Power of Choice – giving consumers options in the way they use electricity draft report*, 6 September 2012, p. 83.

16 AEMC, *Power of Choice – giving consumers options in the way they use electricity draft report*, 6 September 2012, p. 84.

Figure 5.3: Types of tariffs for cost reflective pricing[17]



5.16 The AEMC also explained the reason for implementing cost reflective pricing:

> A rationale for implementing cost reflective pricing is that by exposing consumers to the costs they impose on network and generation, they can respond in ways to reduce these costs over time. This in turn will reduce energy bills for all consumers in the long run...
>
> [A] survey of domestic and international trials showed that where consumers are exposed to time varying prices, peak demand reductions of up to 30 or 40 per cent could be achieved.[18]

5.17 Cost reflective pricing requires the concomitant installation of advanced metering infrastructure (AMI) or "smart meters". Smart meters are a reasonably new technology that enable consumers to make choices about energy use by providing real-time information on electricity consumption. Unlike traditional accumulation meters, smart meters record electricity usage at regular intervals (for example, every 30 minutes) and, if equipped to do so, can automatically send the data to electricity suppliers via remote communication, thereby eliminating the need for manual meter readings.

5.18 Smart meters also enable the use of in-home displays, dashboards and web portals so that consumers can access detailed information about their electricity

17 AEMC, *Power of Choice – giving consumers options in the way they use electricity draft report*, 6 September 2012, p. 85.

18 AEMC, *Power of Choice – giving consumers options in the way they use electricity draft report*, 6 September 2012, p. 85.

consumption. This information can then be used to identify ways to save electricity, reduce energy costs and compare electricity pricing offers from competing providers.[19] In-home displays, dashboards and web portals are discussed in greater detail later in this chapter.

Smart meters in Victoria

5.19 Most Australian consumers have an accumulation meter and not a smart meter. The notable exception to this is Victoria where smart meters have been installed in a state government-mandated roll-out that commenced in 2009. It is expected that all households and small businesses in Victoria will have a smart meter by 2013.[20] From 2013, Victorian consumers will have the option of moving to flexible pricing tariffs, facilitated by smart meters.[21]

5.20 The Victorian smart meter program involves installation of 2.6 million new meters across the state, of which more than 1.2 million have now been installed.[22] Whilst the Victorian smart meter program has resulted in the detection of around 13 000 wiring defects that have been rectified to improve consumer safety, it has also come at a cost to consumers: in 2012, the cost to consumers of the smart meter roll-out was a net increase of $80–$120[23] per consumer.[24]

---

19 Department of Primary Industries (DPI) (Victoria), *About Smart Meters*, available: http://www.dpi.vic.gov.au/smart-meters/about-smart-meters (accessed 31 August 2012) and Premier of New South Wales, *Smart Meters – Fact Sheet*, available: http://www.savepower.nsw.gov.au/Portals/0/docs/news/Media07121202.pdf (accessed 3 September 2012).

In Victoria, electricity companies Origin Energy and Jemena have launched smart meter compatible web portals, and United Energy is currently trialling a portal. DPI (Victoria), *Smart Meter web portals launched*, available: http://www.dpi.vic.gov.au/smart-meters/home/latest-news/smart-meter-web-portals-launch (accessed 18 September 2012).

20 DPI (Victoria), *About Smart Meters*, available: http://www.dpi.vic.gov.au/smart-meters/about-smart-meters (accessed 31 August 2012) and Premier of New South Wales, *Smart Meters – Fact Sheet*, available: http://www.savepower.nsw.gov.au/Portals/0/docs/news/Media07121202.pdf (accessed 3 September 2012).

21 The Hon Michael O'Brien MP, 'Greater pricing choice for Victorian energy consumers', media release, 26 September 2012.

22 Energy Safe Victoria, *Safety of Advanced Metering Infrastructure in Victoria*, 31 July 2012, p. 5.

23 Victorian electricity distribution businesses, *Submission 55*, pp 7, 13.

24 In the same way as consumers pay for older accumulation meters and other electricity infrastructure, the cost of supplying, installing and operating a smart meter is charged to the consumer and paid for over time via supply charges (see for example AGL, *Smart meter FAQs*, available: http://www.agl.com.au/home/smart-meters/Pages/smart-meter-faqs.aspx and SP Ausnet, *Questions and Answers—Smart Meter Program*, available: http://www.sp-ausnet.com.au/?id=101010096D44FB3497B84DDCA2579D1001CAD35 (accessed 25 October 2012)).

5.21 Consumer criticism of and resistance to the Victorian smart meter roll-out has been well publicised;[25] the Energy Retailers Association of Australia (ERAA) stated:

> …it became a high-profile issue in Victoria and, in some ways, the way it was done without much consumer involvement, information or consultation, and they got the cost of the meter upfront without getting any of the benefits has poisoned the environment around them. [Smart meters] have a role to play. The major benefits are captured all along the energy value chain but the major benefits from a customer's point of view going forward is a lot greater understanding of data on energy use patterns, and more information means better decision making, remote connection and disconnection.[26]

5.22 As a result of the negative consumer reaction in Victoria, in their submission to the inquiry, Victorian network distribution businesses emphasised the importance of consumer communication around the implementation of smart meters and flexible pricing:

> - Incentives for change through flexible pricing - the Victorian DBs support the Victorian Government's view that introduction of flexible pricing must be undertaken in an orderly way. It will be important to ensure that introduction of flexible pricing is supported by a consumer information campaign and that the pricing structures and their impacts are very clearly explained, particularly to vulnerable consumer groups. We have been working on development of flexible network tariffs which will be introduced consistent with Government policy and appropriate regulation.
> - Consumer education - at this stage, consumer understanding of smart meters and the opportunities they create is limited. Following the Victorian Government's decision in December 2011 to continue with the smart meter rollout, the Government's consumer communication program has developed significantly, including the launch of the recent "Switch On" initiative. We support the Government's increased communication on smart meters, which we believe is critical to benefits delivery and take-up.[27]

Smart Grid, Smart City trial

5.23 In addition to the Victorian smart meter program, there is currently a smart grid trial in Newcastle. The federal government has committed up to $100 million to

25 See for example Mathew Murphy, 'New meter roll-out may leave sweltering consumers smarting', *The Age*, 31 January 2009; Stephen McMahon, 'Power bills and bottom lines to rise under smart metering', *Herald Sun*, 12 November 2009; and Cameron Houston, 'Surge in electric hostility', *Sunday Age*, 14 August 2011.

26 Mr Cameron O'Reilly, Chief Executive Officer, Energy Retailers Association of Australia (ERAA), *Proof Committee Hansard*, 25 September 2012, pp 21–22.

27 Victorian electricity distribution businesses, *Submission 55*, p. 8.

develop the Smart Grid, Smart City trial in the Newcastle region in partnership with the energy sector.[28] The demonstration project:

> …gathers information about the benefits and costs of different smart grid technologies in an Australian setting. Building a smart grid involves transforming the traditional electricity network by adding a chain of new smart technology. It includes smart sensors, new back-end IT systems, smart meters and a communications network. Smart grids provide real time information about the electricity network to make it more efficient and help reduce interruptions, support more renewable energy and gives households greater control over their energy use.[29]

5.24 The Department of Resources, Energy and Tourism (DRET) described the benefits of a smart grid:

> A smart grid works by combining advanced communication, sensing and metering infrastructure with the existing electricity network...
>
> A smart grid can improve the reliability of electricity services for consumers by identifying and resolving faults on the electricity grid, better managing voltage and identifying infrastructure that requires maintenance. Smart grids can also help consumers manage their individual electricity consumption and enable the use of energy efficient 'smart appliances' that can be programmed to run on off-peak power.[30]

5.25 The project commenced in October 2010 and is expected to end in September 2013.[31]

5.26 The committee made a site visit to the Smart Grid, Smart City Centre in Newcastle on 24 October 2012 and was pleased to be able to view this technology and its benefits firsthand.

Cost reflective pricing and smart meters in the NEM

5.27 Submitters and witnesses were broadly supportive of cost reflective pricing, and the installation of smart meters, and acknowledged the benefits for many consumers in reducing both their own electricity bills and the price of electricity.[32]

---

28 Ausgrid will be working with consortium partners IBM Australia, GE Energy Australia, Sydney Water and Newcastle City Council.

29 Smart Grid, Smart City, *About Smart Grid, Smart City*, available: available: http://www.smartgridsmartcity.com.au/About-Smart-Grid-Smart-City.aspx (accessed 19 October 2012).

30 Department of Resources, Energy and Tourism (DRET), *Smart Grid, Smart City*, available: http://www.ret.gov.au/energy/energy_programs/smartgrid/Pages/default.aspx, (accessed 18 September 2012).

31 DRET, *Smart Grid, Smart City*, available: http://www.ret.gov.au/energy/energy_programs/smartgrid/Pages/default.aspx, (accessed 18 September 2012).

5.28 Indeed, the Productivity Commission stated:

> A potentially key tool of demand management is the use of electricity prices that vary to reflect the costs of supply at different times. In principle, such approaches should help ensure that peak network capacity is available for high value uses, in part by allowing cheaper non-peak prices for lower value or less time sensitive uses.[33]

5.29 The Productivity Commission continued:

> Although not used extensively to date in Australia to manage electricity demand to households, price signalling appears to the Commission to offer significant scope to do so.
>
> …
>
> Most studies find that Australian consumers do adjust their consumption in response to time-based pricing. For example, across seven Australian pricing trials, the average reductions in peak demand were between 13–40 per cent (Futura 2011). The extent of response by consumers of course depends on the strength of the price signal and consumers' ability to adapt. In particular, when prices are considerably higher during a declared peak event—so-called critical peak pricing—the reduction in peak consumption is generally more than four times that under flatter "time of use" tariffs…[34]

5.30 To facilitate cost reflective pricing, the Productivity Commission recommended establishment of a single set of licence requirements for all NSPs operating in the NEM.[35] The Productivity Commission argued that:

> Such a change would of course have wider benefits—including for the transmission component of the NEM and by assisting the introduction of:
>
> - an NEM-wide reliability framework…
> - a common and efficient approach across jurisdictions to the provision of assistance to vulnerable consumers…[36]

---

32 See for example Mr Ric Brazzale, President, REC Agents Association, *Proof Committee Hansard*, 9 October 2012, p. 10; Ms Carolyn Hodge, Senior Policy Officer, Energy and Water Consumers' Advocacy Program, Public Interest Advocacy Centre (PIAC), *Proof Committee Hansard*, 25 September 2012, p. 59; Mr Matt Levey, Head of Campaigns, CHOICE, *Proof Committee Hansard*, 25 September 2012, p. 59; Ms Catriona Lowe, Co-Chief Executive Officer, CALC, *Proof Committee Hansard*, 27 September 2012, p. 33; Mr David Swift, Acting Chief Executive Officer, AEMO, *Proof Committee Hansard*, 27 September 2012, pp 9–10; and Mr Peter Bryant, General Manager, AMI Services, Citipower and Powercor Australia, *Proof Committee Hansard*, 27 September 2012, p. 14.

33 Productivity Commission, *Draft Report: Electricity Network Regulatory Framework*, October 2012, p. 321.

34 Productivity Commission, *Draft Report: Electricity Network Regulatory Framework*, October 2012, p. 321.

35 Productivity Commission, *Draft Report: Electricity Network Regulatory Frameworks*, October 2012, p. 399.

5.31 The Productivity Commission subsequently recommended that the Standing Council on Energy and Resources (SCER) initiate a process to establish a uniform set of licence condition for all transmission and distribution network businesses in the NEM, and that these conditions should be included in the National Electricity Rules (NER) and replace current state and territory licence conditions.[37]

5.32 The AEMC has acknowledged, however, that the majority of consumers do not receive this sort of cost reflective pricing. It outlined that:

> A rationale for implementing cost reflective pricing is that by exposing consumers to the costs they impose on network and generation, they can respond in ways to reduce these costs over time. This in turn will reduce energy bills for all consumers in the long run...
>
> [A] survey of domestic and international trials showed that where consumers are exposed to time varying prices, peak demand reductions of up to 30 or 40 per cent could be achieved.[38]

5.33 EnerNOC described cost reflective pricing as 'economically elegant' but offered the following caution:

> The dynamic pricing approach is widely praised as economically elegant, and performs well in some trials, but has not been very successful in practice. The problem appears to be that customers are reluctant to expose themselves to such volatile prices that they may be unable to afford to run their air conditioning when they want it most.
>
> When faced with the risk of very high prices, a very large proportion of customers is likely to opt out of dynamic pricing in favour of flatter price arrangements which protect against volatile prices. Of course, this undermines the objective of dynamic pricing. Mandating that dynamic prices be passed through to customers avoids this issue, but is likely to be a wildly unpopular policy, and could cause serious issues for vulnerable customers.[39]

5.34 Other submitters were also cautious about the implementation of cost reflective pricing and smart meters because of concern about low income and vulnerable consumers' ability to change their pattern (time) of consumption. It was acknowledged that many low income and vulnerable consumers may be unable to shift electricity consumption away from periods of peak demand and that exposing these consumers to cost reflective pricing may result in the perverse outcome where their electricity bills increase. Ms Carolyn Hodge of the Public Interest Advocacy Centre (PIAC) summarised the issue:

---

36 Productivity Commission, *Draft Report: Electricity Network Regulatory Frameworks*, October 2012, p. 399.

37 Productivity Commission, *Draft Report: Electricity Network Regulatory Frameworks*, October 2012, p. 401.

38 AEMC, *Power of Choice – giving consumers options in the way they use electricity draft report*, 6 September 2012, p. 85.

39 EnerNOC, *Submission 50*, p. 5.

> I think we have to take real care to think about the level of capacity that consumers have to change their behaviour. I think there are savvy people who are well-resourced and who can make investments in technology to understand their energy usage and perhaps invest in some low-control technology or log on to web portals and understand pricing messages. There are also people who have a fairly low level of discretionary use. For those people, understanding that there are critical peak pricing times would only serve to heighten their anxiety about electricity prices in the knowledge they are going to have difficulty affording that next bill.[40]

5.35 The Total Environment Centre (TEC) had a similar view:

> We have always supported the continuation of a kind of safety net in the electricity market in the form of regulated tariffs, which should be available to people who might be overly exposed to time-of-use pricing, and we continue to support that. At the same time, we think it is really important that more people who can afford to do so do go onto time-of-use pricing. We agree with the AEMC in its Power of choice draft report that more should be done with time-of-use pricing.[41]

5.36 The AEMC's PoC report flagged 'a lack of metering capability' and a low level of consumer understanding about the relationship between usage and cost as impediments to the implementation of cost reflective pricing.[42] The PoC report suggested that addressing these impediments would 'require a balance between managing consumer impacts and addressing the needs of consumers who would face increased financial difficulties under new pricing structures and strengthening the arrangements for retailers and distributors to set cost reflective pricing'.[43] Consequently, the PoC report recommended:

> a) Focusing only on introducing time varying prices for the network tariff component of consumer bills. Retailers would be free to decide how to include the relevant network tariff into their retail offers; and
>
> b) Segmenting residential and small business consumers into three different consumption bands and applying time varying network tariffs in different ways...[44]

5.37 The PoC report also noted work by SCER examining the business case in different jurisdictions for the implementation of smart meters.[45] SCER found that

---

40 Ms Carolyn Hodge, Senior Policy Officer, Energy and Water Consumers' Advocacy Program, PIAC, *Proof Committee Hansard*, 25 September 2012.

41 Dr Mark Byrne, Energy Market Advocate, Total Environment Centre (TEC), *Proof Committee Hansard*, 25 September 2012, p. 49.

42 AEMC, *Power of Choice – giving consumers options in the way they use electricity draft report*, 6 September 2012, p. 82.

43 AEMC, *Power of Choice – giving consumers options in the way they use electricity draft report*, 6 September 2012, p. 82.

44 AEMC, *Power of Choice – giving consumers options in the way they use electricity draft report*, 6 September 2012, p. 82.

industry-led installation of smart meters was 'currently at a low level' but could be expected to increase in the future.[46] SCER identified several impediments to industry-led roll-outs:

- split incentives between the various industry players (given the disaggregation of distribution and retail functions), consumers and society.
- different regulatory treatment of different meter types, which places legal restrictions on contractual options for retailers and customers and encourages distributors to focus on approaches that receive regulatory protection.
- a lack of transparency in metering charges where these are rolled into distribution use-of-system charges, which prevents full comparison of price and service for different metering options and between metering providers.
- a lack of clarity regarding access to meter data and control functions by various industry sectors such as retailers, distributors and aggregators.[47]

5.38 SCER concluded:

> The first issue may be addressed as technology prices come down and businesses are able to make an internal business case or establish appropriate contracts to aggregate benefits across the supply chain, while the later issues are matters to be considered by market institutions and policy-makers, through either rule changes or the development of the AER's regulatory approach to metering and related services. The fourth issue is critical, as it relates to the governance of fundamental meter data and can impact the way industry sectors interact.[48]

5.39 The PoC report proposed a three-tiered model for implementing cost reflective pricing, as shown in Figure 5.4 below. Deliberately, the PoC report did not define the thresholds for each of the consumption bands arguing that these thresholds would likely vary between jurisdictions and over time.[49] With respect to smart meters, the strategy proposed in the PoC report would require band 1 consumers (large consumers) to have a smart meter; band 2 consumers (medium to large consumers) would be deemed to have a smart meter (by virtue of being deemed to be on a time

45 AEMC, *Power of Choice – giving consumers options in the way they use electricity draft report*, 6 September 2012, p. 44.

46 SCER, *SCER statement on smart meters for small customers: future directions*, 8 June 2012, p. 4.

47 SCER, *SCER statement on smart meters for small customers: future directions*, 8 June 2012, p. 4.

48 SCER, *SCER statement on smart meters for small customers: future directions*, 8 June 2012, p. 4.

49 AEMC, *Power of Choice – giving consumers options in the way they use electricity draft report*, 6 September 2012, p. 100.

varying network tariff) with the ability to "opt-out"; and band 3 (small consumers) would be deemed to have an accumulation meter (by virtue of being deemed to be on a flat network tariff) with the option to "opt-in". The combined strategy for implementing cost reflective pricing and smart meters, as suggested in the PoC report, is summarised in Table 5.1.

5.40 As raised earlier, the implementation of smart meters in Victoria emphasised the need for appropriate and thorough consumer education and engagement. The importance of this education and engagement was discussed in the PoC report[50] and was re-iterated throughout the inquiry; for example, Victorian distribution network businesses stated:

> Historically, the biggest issue facing the Victorian rollout has been the lack of effective communication of the vision. In any future rollouts a comprehensive communication and education program about smart meters and how to harness them is essential.[51]

5.41 The Consumer Action Law Centre (CALC) also noted the need for consumer education[52] as did CHOICE.[53]

50 AEMC, *Power of choice – giving consumers options in the way they use electricity draft report*, 6 September 2012, p. 95.

51 Mr Peter Bryant, General Manager, AMI Services, Citipower and Powercor Australia, *Proof Committee Hansard*, 27 September 2012, p. 15.

52 Ms Catriona Lowe, Co-Chief Executive Officer, CALC, *Proof Committee Hansard*, 27 September 2012, p. 36.

53 Mr Matt Levey, Head of Campaigns, CHOICE, *Proof Committee Hansard*, 25 September 2012, p. 59.

Figure 5.4: AEMC proposed strategy for implementing cost reflective pricing[54]

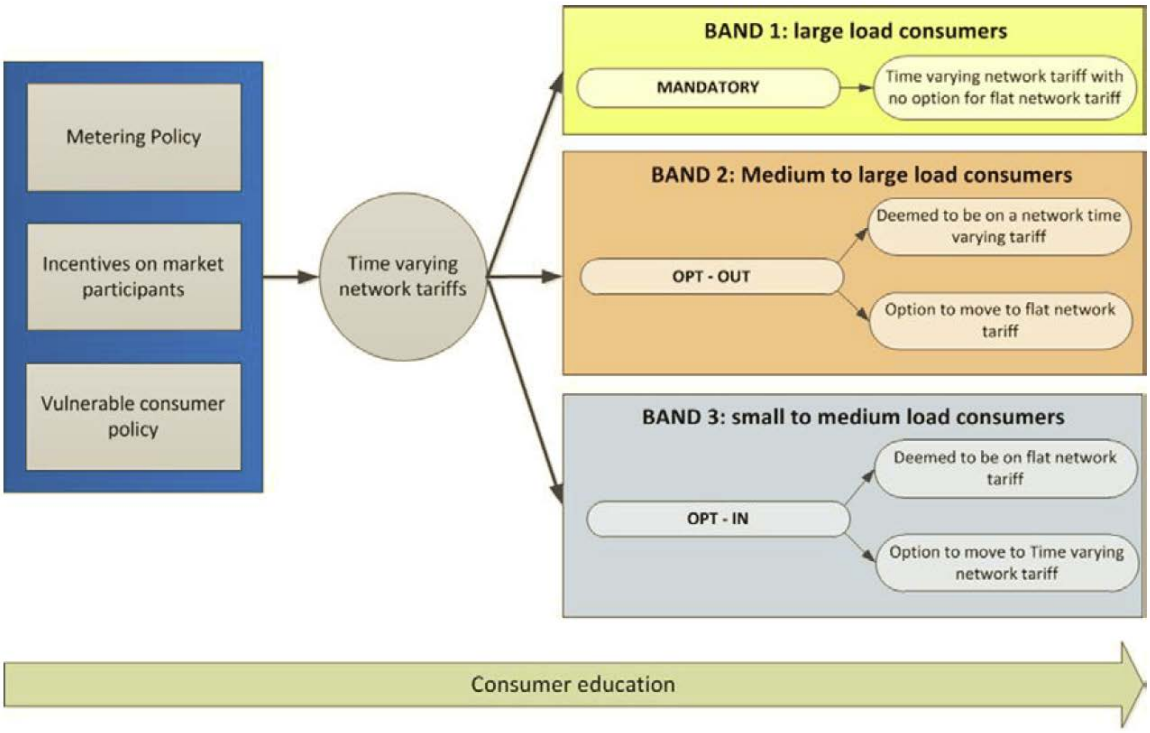


Table 5.1: Model for implementation of cost reflective pricing and smart meters

Band	Consumer	Smart meter	Price tariff
1	Large	Mandatory	Cost reflective network tariff
2	Medium to large	Opt-out	Deemed to be on a cost reflective network tariff (with a smart meter)
			Option to move to a flat network tariff (no smart meter required)
3	Small to medium	Opt-in	Deemed to be on a flat network tariff (no smart meter required)
			Option to move to a cost reflective network tariff (with a smart meter)

Committee comment

5.42 The committee recognises the significant benefits that can be delivered by cost reflective prices and smart meters: given network costs associated with infrastructure to meet increasing peak demand appear to be one of the most significant drivers of recent increases in electricity prices, it seems that cost reflective pricing and

54 AEMC, *Power of choice – giving consumers options in the way they use electricity draft report*, 6 September 2012, p. 92.

smart meters have a role to play in modifying patterns of electricity consumption and reducing peak load.

5.43 To this end, the committee agrees with the recommendations of the PoC report regarding the gradual introduction of cost reflective pricing and smart meters. In this respect, the committee supports the introduction of cost reflective pricing and smart meters as shown in Table 5.1. However, it is the committee's view that any introduction of cost reflective pricing and smart meters must also include explicit consumer protections, in particular for low income and vulnerable consumers. Whilst the three-tiered model goes some way to protecting small to medium consumers, further consumer protections are needed and these are discussed in Chapter 6.

5.44 The committee believes that prior to and during the roll out of cost reflective pricing and smart meters, there must be a comprehensive consumer information and education campaign. As demonstrated by the experience in Victoria, it is essential that consumers understand the costs as well as the short- and long-term benefits associated with cost reflective pricing and smart meters that accrue both to them and to electricity network businesses and retailers: the consumer information campaign must seek to ensure that consumers understand these costs and benefits.

5.45 Noting that the business case for implementing smart meters will likely differ between jurisdictions, meaning that the time and circumstances in which smart meters are implemented will also differ between jurisdictions, the committee recommends that implementation of cost reflective pricing and smart meters occurs in a planned, logical sequence: the committee feels that the way in which the digital television switchover was rolled-out by pre-determined geographic locations warrants consideration as a possible model. Such an approach would assist with planning and allow consumer information and education to be targeted to the needs of consumers in each location.

Recommendation 9

5.46 **The committee recommends that SCER agree to introduce cost reflective pricing for electricity in conjunction with smart meters in all jurisdictions in the NEM:**

- **based on the model proposed in the *Power of Choice* draft report comprising three consumption bands for large (band 1), medium to large (band 2) and small to medium (band 3) consumers;**
- **where smart meters are mandated for consumption band 1, opt-out for band 2 and opt-in for band 3; and**
- **accompanied by a comprehensive consumer information and education campaign funded by the Commonwealth, state and territory governments during both the planning and implementation phases.**

Demand side participation in the wholesale market

5.47 The PoC report made a number of recommendations to enhance consumer participation in the wholesale market and ancillary services market, noting that this

would increase competition among network businesses. The PoC report identified certain barriers to this process such as:

- commercial practices;
- current rules;
- the risks of consumers being exposed to the spot price;
- the cost of participation relative to the benefits; and
- the current inability to "unbundle" the sale and supply of electricity provided through a retailer.[55]

5.48 To address these barriers, the PoC report recommended the creation of a demand response mechanism whereby demand side participation in the wholesale market was enabled:

> AEMO pays consumers for the quantity of demand response delivered to the market during the trading interval at the spot price. As a result, consumers participating in the mechanism pocket the difference between the spot price and the retail price (energy component).[56]

5.49 This mechanism rewards consumers for reducing their consumption by a set amount through a payment for "demand resources" analogous to the wholesale spot price. The amount of demand resources payed to a consumer would be calculated as the difference between the consumer's actual metered consumption and their baseline consumption (an estimate of what their consumption would be had they not changed their consumption).[57] The PoC report described the demand mechanism thus:

> Under this mechanism it is necessary for consumers to continue paying their retailer for electricity according to their estimated baseline consumption. Similarly, consumers' retailers are required to pay the wholesale market spot price according to their estimated baseline consumption. This arrangement allows for AEMO to recover enough funds to pay consumers [or an aggregator on their behalf][58] for their demand response at the wholesale price. The total net benefit to consumers of providing the demand response under this mechanism is the spot price

55 AEMC, *Power of Choice – giving consumers options in the way they use electricity draft report*, 6 September 2012, p. 58.

56 AEMC, *Power of Choice – giving consumers options in the way they use electricity draft report*, 6 September 2012, p. 60.

57 The AEMC noted that a method would need to be developed to calculate the baseline figure (see pp 60, 66–69).

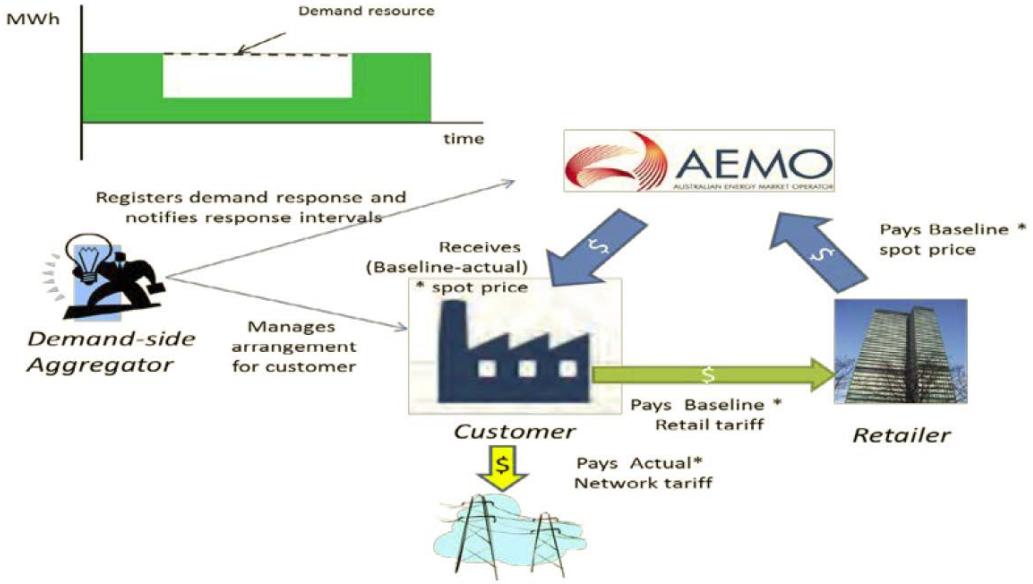
58 The AEMC identified that a new market participant categorised as a sub-category of market generator would be required to facilitate this mechanism. It asserted this was a 'reasonable' categorisation given that demand resources would participate in the wholesale market in an analogous manner to generation.

AEMC, *Power of Choice – giving consumers options in the way they use electricity draft report*, 6 September 2012, pp 59 and 71.

minus energy component of the retail price (this excludes the opportunity cost of not consuming).[59]

5.50 The PoC report found that the costs associated with this proposal would be limited to administrative costs as many of the provisions needed for operation of the mechanism are already in place. These costs would arise from the development of new procedures and guidelines for registering demand resources and changes to the settlement process to account for the recovery of funds. The PoC report noted that no major changes to metering procedures would be required.[60]

Figure 5.5: General design of demand response mechanism[61]



5.51 Dr Paul Troughton, Manager of Regulatory Affairs for EnerNOC, described an example of this type of demand side participation in the wholesale market:

> EnerNOC is a demand response company. By demand response we mean paying electricity users for measured reduction in their consumption at times when the grid needs it—when either there is a physical issue or prices are very high. Everywhere around the world that demand response has been allowed to compete in the market, it has proven to be the cheapest way of dealing with critical peaks in demand. This is really what the NEM needs. Peaks are the root of all evil in the NEM at the moment, and they do need to be fixed. The fundamental idea is that it is much cheaper to pay people who are willing to change their behaviour for a few hours in a year to do so than

59 AEMC, *Power of Choice – giving consumers options in the way they use electricity* draft report, 6 September 2012, p. 59.

60 AEMC, *Power of Choice – giving consumers options in the way they use electricity* draft report, 6 September 2012, pp 64–65.

61 AEMC, *Power of Choice – giving consumers options in the way they use electricity draft report*, 6 September 2012, p. 61.

> it is to build a load of infrastructure that is only going to be used for those few hours in the year. [62]

5.52 The committee also heard from Dr Troughton that commercial and industrial demand response has some significant policy and cost of implementation advantages:

> The interesting thing about looking at commercial and industrial demand response, which is what we do, is that it does not need any subsidy and it does not need a smart meter rollout. It does not need a consumer protection campaign. It does not impact on vulnerable consumers. It is just about reaching out specifically to people who are able and willing to make changes and giving a very pointed incentive to them to do so. [63]

5.53 The committee was informed that the initial design for the NEM focussed on the supply side. Whilst this has been good for security of supply, it has had some negative impacts, including on networks costs, because of the need to predict demand rather than treat demand in a more dynamic way:

> It treats electricity demand as being an unchangeable fact—that you forecast it and it will come—and then it is the purpose of the electricity market to give enough strong incentives for all of the various participants to go out and build the infrastructure needed to meet those forecasts. And that has worked, in that the lights have stayed on, but it is a very expensive way of doing things. If you can move away from this predicting and providing into trying to see whether you can treat that forecast as not being unchangeable, then you can get a more intelligent and cheaper outcome.
>
> We have known about this supply-side bias for a long time, but it has not yet been fixed. There have been lots of reviews and lots of vague recommendations but no actual meaningful action. While that has been going on for the last decade, $16 billion worth of supply-side infrastructure has been built, and that should not have been needed.[64]

5.54 The AER indicated that in its view the next wave of reforms would be at the consumer end:

> We are seeing there—and this is acknowledged through power of choice—that at the customer end customers will make the choice of local generation—that is, solar or other domestic generation—of demand management, of storage as we see in the future electric vehicles coming on to the scene and of grid services. That is a recognition of very significant changes in the electricity market over the medium and longer term.[65]

---

62 Dr Paul Troughton, Manager of Regulatory Affairs, EnerNOC Pty Ltd, *Proof Committee Hansard,* 27 September 2012, p. 67.

63 Dr Paul Troughton, Manager of Regulatory Affairs, EnerNOC Pty Ltd, *Proof Committee Hansard,* 27 September 2012, p. 67.

64 Dr Paul Troughton, Manager of Regulatory Affairs, EnerNOC Pty Ltd, *Proof Committee Hansard,* 27 September 2012, p. 67.

65 Mr Andrew Reeves, Chairman, AER, *Proof Committee Hansard,* 27 September 2012, p. 6.

5.55 In EnerNOC's opinion, creating a market for demand side bidding would go some way to addressing increasing peak demand and reduce the need for further network infrastructure:

> …if you address peak demand—the very narrow, sharp peaks in demand—through demand response rather than by building network infrastructure, it is so cost-effective by comparison that you can afford to make it considerably more profitable for the network business so that it is really a no-brainer for them to do it. And, looking at the whole picture, everyone comes out ahead. The total costs are reduced. There is more profit there but much less spent in total, so consumer bills come down. That is what a solution has to look like.[66]

5.56 Such an approach was also strongly supported by the Energy Efficiency Council (EEC),[67] which stated that it 'solves multiple problems':

> First, allowing energy users to sell reductions in energy demand into the market provides a time-of-use price signal to large energy consumers that encourages them to conserve energy during periods when supplying energy is expensive. Currently, very few large energy users face a price signal that reflects the true cost of supply at that time.
>
> …
>
> Second, the price signal for consumers would be set by the generation market. In other words, consumers would only be paid to reduce their demand if it was cheaper than generation. In the short term this would increase competition in the energy market and reduce the wholesale price for electricity, reducing electricity prices for all consumers. In the long term this would reduce the need to build very expensive peaking generators and networks…reducing the growth in electricity prices for all consumers.
>
> Third, these changes would make it easier for third-parties that are experts in reducing peak demand to help consumers to optimise their energy demand patterns. Allowing consumers to sell demand-response into the market provides a clear value for this demand-response, facilitating commercial intermediaries.
>
> Fourth if this market were established it would also enable meaningful volumes of peak reduction to be developed and sold to network companies This would help reduce expenditure on transmission and distribution infrastructure and partially address the split incentive, whereby the benefits of demand-side actions are split between several parties.[68]

Committee comment

5.57 The committee agrees with the proposal for demand side participation in the wholesale market as advocated in the PoC report and supported by various submitters

---

66 Dr Paul Troughton, Manager of Regulatory Affairs, EnerNOC Pty Ltd, *Proof Committee Hansard,* 27 September 2012, p. 68.

67 Energy Efficiency Council (EEC), *Submission 75*, p. 11.

68 EEC, *Submission 75*, p. 11.

and witnesses to the inquiry. Offering consumers the opportunity to reduce their peak demand and to be financially rewarded for doing so appears to the committee to be the "carrot" to the "stick" of cost reflective pricing. Further, the committee acknowledges that the costs associated with introducing this new wholesale market participant appear to be low. On that basis, the committee supports the introduction of a demand response mechanism that allows consumers to sell their demand in the wholesale electricity market for the prevailing spot price.

5.58 Where such a mechanism enables third parties to sell demand in the wholesale market on behalf of consumers, these third parties must be accredited, authorised to act on behalf of and required to act in the interests of consumers. The committee proposes that SCER examine incorporating the accreditation and regulation of these third parties offering demand management services in the National Energy Customer Framework (NECF).

5.59 The committee supports the proposal in the AEMC PoC report for consumers or authorised third parties representing consumers to sell their demand in the wholesale electricity market for the prevailing spot price. The committee is also pleased to note that such a mechanism will be in place by 1 July 2014.

Recommendation 10

5.60 **The committee recommends that SCER examine incorporating the accreditation and regulation of third parties offering demand management services in the National Energy Customer Framework (NECF).**

Information and consumer empowerment

5.61 The need for better quality and more readily available information for consumers was cited by various submitters and witnesses and identified by many of these as a way in which demand for electricity could be modified for the benefit of consumers via reductions in demand and electricity prices.[69]

5.62 As Mr Terry McConnell stated:

> …the energy business is incredibly complicated. We have heard before about the acronyms within the energy sector. There are many of them. The problem is this business is technical, it is complicated, and the average punter simply does not understand it fully. What I have pushed for since I started working in the sector is education, education, education. Anything that we can do to improve the education of the consumer, whether they be residential or even the commercial, industrial consumers, will make a

69 See for example CHOICE, *Submission 73*, pp 15–16 ; EEC, *Submission 75*, pp 8–9; Ethnic Communities Council of NSW, *Submission 11*, pp 1 and 3; Mr Terry McConnell, *Proof Committee Hansard*, 3 October 2012, p. 23; Ms Caitlin Whiteman, Research and Policy Advocate, Consumer Utilities Advocacy Centre (CUAC), *Proof Committee Hansard*, 27 September 2012, p. 35; Mr Christopher Zinn, Director, Campaigns, One Big Switch, *Proof Committee Hansard*, 3 October 2012, p. 10; and Professor Ray Wills, Chief Adviser, Sustainable Energy Association of Australia, *Proof Committee Hansard*, 2 October 2012, p. 42.

> difference. We need dashboards, in-house home displays, price signals and whatever else—we need to do all of that.[70]

5.63 The complex and technical nature of the electricity market together with barriers to consumers accessing data and information prevent consumers from understanding their electricity consumption, as well as the relationship between this consumption, the wider electricity market and drivers of increasing electricity prices. CHOICE described the combination of 'rapidly rising prices and generally poor information' as 'a "perfect storm" in which consumers find it difficult to navigate an increasingly complex market'.[71]

5.64 CHOICE argued that better information and data made available by advances in technology 'has the potential to empower energy consumers to make more informed decisions, and achieve greater product differentiation in electricity retail'.[72] Further, CHOICE raised the Commonwealth government's 2012–13 Budget proposal for:

> …a scoping study on the establishment of an energy information hub to improve energy information disclosure by retailers and distributors in order to help consumers to better understand and manage their energy use[73]

and recommended fast-tracking this proposal to:

> …enable consumers to identify energy efficiency options. Providing wider access to this consumption data, with appropriate privacy safeguards, would also encourage genuine competition and product differentiation in energy retailing and promote cost-effective distributed generation options.[74]

5.65 CUAC similarly advocated for improved consumer information and support for consumer decision making[75] as did One Big Switch:

> Data is power. The energy usage data that we generate as consumers is incredibly valuable, and we want some of that value to flow back to consumers in terms of the decisions they make.
>
> At present I have seen in some of the retailers' reports around this that they are worried about confusing consumers; they are worried that this data might get out. We would point to examples overseas, in America and in the UK, where this data is becoming more and more freely available. People can make it available under privacy and security arrangements to trusted third parties who will interpret it and give them the information they need in terms of energy efficiency or, it might be, switching to other plans. We believe that getting the data out there is absolutely vital. The retailers—

70 Mr Terry McConnell, *Proof Committee Hansard*, 3 October 2012, p. 23.

71 CHOICE, *Submission 73*, p. 9.

72 CHOICE, *Submission 73*, p. 15.

73 Commonwealth government, *Budget Paper No. 2*, 8 May 2012, p. 263.

74 CHOICE, *Submission 73*, p. 15.

75 Ms Caitlin Whiteman, Research and Policy Advocate, CUAC, *Proof Committee Hansard*, 27 September 2012, p. 35.

> Origin and Energy Australia—are doing various trials around this with web portals or whatever. That is great and that sort of innovation is to be welcomed; but it is also really important that we unlock the creativity of software developers and people who write apps because it is that kind of area which can come up with some great ideas. In America for example there is a Facebook application that can tell you how you compare a benchmark against similar people in terms of the savings you make. That makes a big difference.
>
> It really is about control. People want control. We just did the Big Electricity Switch. We believe people wanted to do something; they felt powerless through far too much of this process. Please give them the opportunity to do something. We believe that they will take it and shake it with all hands.[76]

5.66 In addition to the suggestions to provide consumers with greater direct access to their information and data, the EEC highlighted the role of market intermediaries to 'reduce the impact of information barriers by using economies of scale to develop skills, gather information and perform functions on behalf of multiple consumers'.[77] The EEC argued:

> The structure of the NEM already implicitly accepts that information barriers exist and that market intermediaries have a critical role to address these information barriers. On their own, most energy consumers would find it extremely difficult to secure an affordable and low-risk energy supply by purchasing energy directly from the wholesale market. Retailers have a critical role in securing energy supplies and hedging energy costs on behalf of consumers…Unfortunately, the NEM structure currently impedes consumers engaging third parties to optimise demand, as consumers cannot easily commoditise the value of demand response separately from their overall energy contract. If consumers could commoditise the value of demand-response this would create a revenue stream that third parties could use to cover costs and reward the responsive energy consumers.[78]

5.67 To address the paucity of information available to consumers, the AEMC's PoC report recommended a number of regulatory reforms:

- Changes to the NER to clarify the requirements on a retailer to respond to a consumer's request for access to their energy and metering data.
- New provisions the NER and NECF that require, at a minimum, a retailer is to provide residential and small businesses consumers with information about their electricity consumption load profile (ie timing of use over a period).
- A new rule that would require AEMO to publish market information on representative consumer sector load profiles. Broader market

76 Mr Christopher Zinn, Director, Campaigns, One Big Switch, *Proof Committee Hansard*, 3 October 2012, p. 10.

77 EEC, *Submission 75*, p. 8.

78 EEC, *Submission 75*, pp 8–9.

> information would assist parties to develop products and services and improve the efficiency of the energy services they offer to consumers.[79]

Committee comment

5.68 The committee agrees with those submitters and witnesses who argued for better quality and more readily available information for consumers. Relieving pressure on electricity consumption and prices can only be enhanced by giving consumers access to data and information which subsequently enables them to make more informed decisions about retail electricity offers best suited to their circumstances, as well as understand how they can change their individual pattern of consumption to reduce their electricity costs.

5.69 Therefore, the committee supports calls for the quality and availability of information and data for consumers to be improved.

Other mechanisms to reduce demand

5.70 Mechanisms by which consumers' electricity consumption and bills could be reduced were the subject of much discussion during the course of the inquiry. In particular, submitters and witnesses raised:

- in-home displays, dashboards and web portals;
- direct load control;
- energy efficient appliances and housing; and
- technological advances, such as embedded generation.

5.71 These are discussed in the following sections of this chapter.

5.72 The importance of protecting consumers generally, and low income and vulnerable consumers specifically, was considered in the context of these mechanisms during the course of the inquiry. Some ways in which consumers could be protected were also raised: for example, opt-in cost reflective pricing, a social tariff and the energy efficiency of appliances and housing—together with federal and state and territory government assistance programs—were proposed as components of a possible solution and are discussed elsewhere in this report.

In-home displays, dashboards and web portals

5.73 The committee noted the development of technologies such as in-home displays, dashboards and web portals that potentially give consumers instant and more dynamic access to their energy data (in comparison to that available on their bills). As discussed above, Mr McConnell suggested that '[w]e need dashboards, in-house home displays, price signals and whatever else—we need to do all of that'. [80]

5.74 The ERAA highlighted the introduction of in-home displays in Victoria and the benefits these can offer consumers:

---

79 AEMC, *Power of Choice – giving consumers options in the way they use electricity draft report*, 6 September 2012, p. 18.

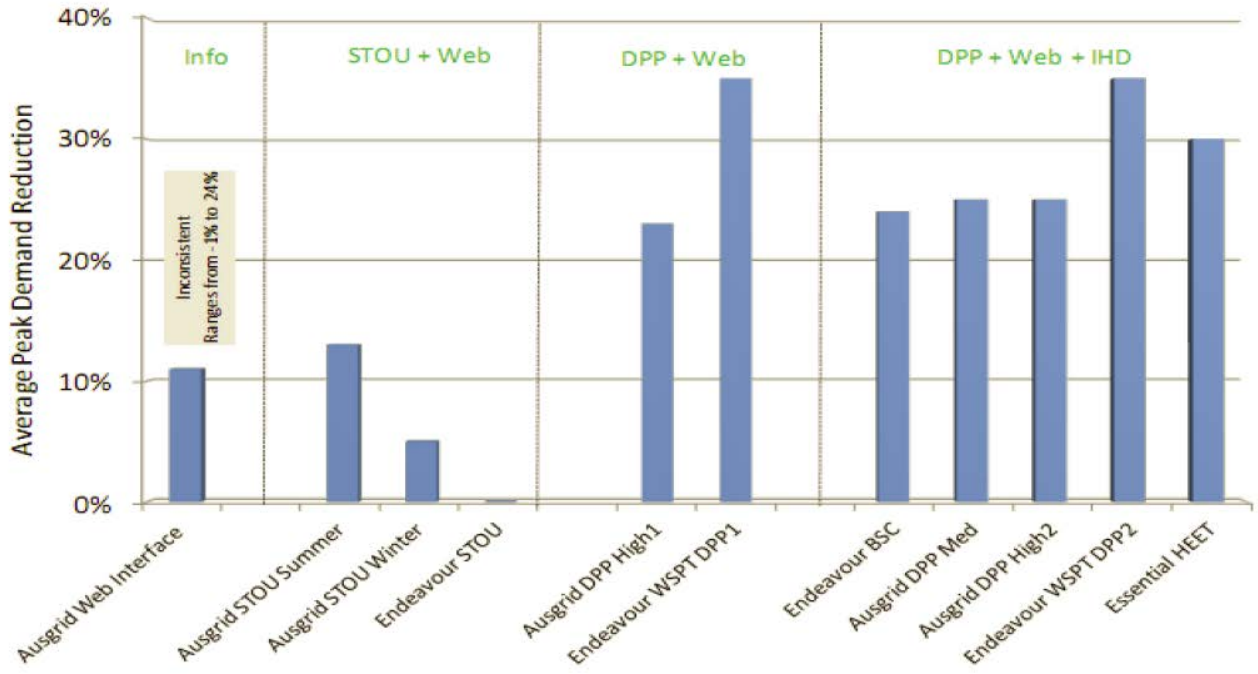
80 Mr Terry McConnell, *Proof Committee Hansard*, 3 October 2012, p. 23.

> In Victoria there are things called "in-home displays" being distributed which help to give information inside about pricing at particular times of the day. I think this whole area of technology, if you see how the digital economy has revolutionised so many industries, puts us on the cusp of the digital industry really changing the range of product offers and options for consumers in the electricity game.[81]

5.75 The PoC report demonstrated the positive impact smart meters together with technology such as in-home displays and web portals can have on reducing peak demand usage (Figure 5.5):

> [The] figure…shows a summary of peak demand reduction results of seasonal time of use (STOU) and dynamic peak pricing (CPP in this case) trials recently conducted by Ausgrid, Endeavour and Essential Energy. It shows that potential impact on peak demand of applying more time varying tariffs in the NEM. It also shows that the impact can be greater where the tariffs are supported through better communication channels (for example, webpages or in home displays (IHDs).[82]

Figure 5.6: Summary of peak demand reduction results from DSP trials in Australia – use of web and in-home displays (IHD)[83]



81 Mr Cameron O'Reilly, Chief Executive Officer, ERAA, *Proof Committee Hansard*, 25 September 2012, p. 25.

82 AEMC, *Power of choice – giving consumers options in the way they use electricity draft report*, 6 September 2012, p. 86.

83 Futura Consulting, 'Investigation of existing and plausible future demand side participation in the electricity market', December 2011, p. 88 from the AEMC, *Power of choice – giving consumers options in the way they use electricity draft report*, 6 September 2012, p. 86.

5.76 However, it was also brought to the committee's attention that implementation of in-home displays and web portals may encounter some complications with the competition principles under the NEL:

> Allowing distributors to offer new contestable services, such as DSP, may be inconsistent with the Competition Principles Agreement's objectives and could create risks for the National Energy Retail Law (NERL). This is of particular concern where distributors provide direct information to consumers about specific products related to energy use such as direct load control, in-home displays, smart appliances and home area networks.[84]

5.77 While advocating the use of smart meters and dashboards, Mr Christopher Zinn from One Big Switch also noted some challenges that need addressing in the implementation of such technologies:

> We would advocate smart metering and dashboarding—first of all, the cost was laid directly to the consumer without any benefit being explained to the consumer, as I understand it. We believe there is a benefit that flows to most consumers through smart metering. In a way you cannot hold back technology. Quite how that is paid for, there are various ways to slice and dice it. In the retailers' submission they have given various scenarios for that. I would not like to think that the fact that there are difficulties in working out how it is going to be paid for is going to hold us back from the bigger impetus that the technology is really going to help. Unless people can measure and understand it, how on earth can they save it?
>
> But I hasten to say you can have all the smart meters and dashboards in the world but you have got to build in some incentives for people to actually use them. One concern would be, and I know in Victoria under various schemes there are various people doorknocking and handing over dashboard style devices to people, how you get people to use devices. How do you make them appreciate that there are real savings and benefits for them from that? It is not always straightforward.[85]

5.78 During its site visit to the Smart Grid, Smart City Centre on 24 October 2012, the committee heard that uptake of in-home displays and web portals by consumers participating in the Smart Grid, Smart City trial had been high. With regard to web portals, the committee was also informed that once the required IT systems had been put in place it was a straightforward process to give consumers access to their consumption data in real time.

Direct load control

5.79 Direct load control describes the capability of an energy provider to control consumers' electricity directly by turning-off or cycling electrical appliances (typically air conditioners and pool pumps). This activity is targeted at moving demand away

---

84 AEMC, *Power of choice – giving consumers options in the way they use electricity draft report*, 6 September 2012, p. 39

85 Mr Christopher Zinn, Directors, Campaigns, One Big Switch, *Proof Committee Hansard*, 3 October 2012, p. 15.

from peak periods and is usually applied to residential consumers to ensure an energy provider has enough power to meet demand. Direct load control is typically voluntary, with energy providers offering bill credits to consumers who participate.

5.80 The CALC informed the committee that:

> In our view, there are significant opportunities to be found in other non-price-based solutions that are less dependent on, or indeed work with, consumer behaviour. For example, we strongly believe that demand load control must be considered for appliances such as air conditioners and pool pumps. Demand load control involves arrangements between a supplier and a residential consumer where equipment is installed that allows the supplier to manage an electricity appliance owned by the consumer for a specified amount of time in return for a payment to that consumer. For example, an air conditioner might be cycled off during hot periods for, say, 10 minutes every hour. This is the policy equivalent of putting the alarm clock on the other side of the room. [86]

5.81 CALC also suggested that different approaches may be preferable for appliances with smaller loads:

> For smaller loads relating to appliances such as dishwashers, washing machines and dryers we do believe that educational campaigns can provide an effective and efficient alternative. Simple campaigns calling on consumers to do the right thing are a safe and inexpensive way to reduce consumption or load shift. There are simple messages to be conveyed why households should aim to use dishwashers and washing machines after 10 pm and how they would benefit by doing so. We would note the significant success of the recent Save Water Target 155 campaign here in Victoria. The three metropolitan water retailers have stated that that campaign saved 60 billion litres of water.[87]

5.82 The ESAA voiced its support for direct load control among other approaches to demand management but noted the importance of careful management of these options in the future:

> In terms of demand side management, direct load control, which is the ability of the network to turn down air conditioners and compensate those households through a different pricing arrangement, is a very valuable technology that can make material savings to household bills. We think that there is a very high likelihood of the rise of distributed generation and storage, and not just solar PV but other technologies complementing that, and that process will continue. How we manage that will be crucial to the affordability of energy in the future.[88]

---

86 Ms Catriona Lowe, Co-Chief Executive Officer, CALC, *Proof Committee Hansard*, 27 September 2012, p. 34.

87 Ms Catriona Lowe, Co-Chief Executive Officer, CALC, *Proof Committee Hansard*, 27 September 2012, p. 34.

88 Mr Matthew Warren, Chief Executive Officer, ESAA, *Proof Committee Hansard*, 27 September 2012, p. 44.

Direct load control trials

5.83 A number of network businesses are currently exploring direct load control devices. For example, South Australian distributor SA Power Networks is conducting a trial of direct load control devices in air conditioners which turn off the compressor but not the fan to ensure comfort is maintained.[89] Consumers in this trial are given payment in return for giving the SA Power Networks authority to limit their use of air conditioners at certain times during the summer.[90] To date, the trial suggests a 19–35 per cent reduction in peak load.[91]

5.84 Queensland distributor Energex is also running trials offering residential consumers an incentive payment in return for installing an energy management device in pool pumps, air conditioners and hot water units.[92]

5.85 The committee also notes that a trial of direct load control air conditioners in Perth showed that reductions in peak demand of 20 per cent were achievable through cycling air conditioners.[93]

Energy efficiency

5.86 Using energy more efficiently can reduce consumers' electricity consumption, subsequently reducing overall demand and placing downward pressure on electricity prices. Improvements in energy efficiency are often considered to be the "low hanging fruit" of electricity consumption and emission reduction efforts, as they are arguably

89 SA Power Networks (previously the Electricity Trust of South Australia – ETSA Utilities) is the operator of the South Australian electricity distribution network. ETSA Utilities changed its name to SA Power Networks effective 3 September 2012.

90 AEMC, *Power of choice – giving consumers options in the way they use electricity draft report*, 6 September 2012, pp 117–118.

91 'South Australia has the "peakiest" electricity demand of any state in Australia, and a peak demand that is among the worst in the world.' This is mainly attributed to the use of air conditioning in more than 90 per cent of SA homes. In 2005, the Essential Services Commission of SA delegated a $20.4 million budget to SA Power Networks to conduct a five-year demand management research and development project which includes the direct load control trial.

SA Power Networks, *Demand management*, http://www.sapowernetworks.com.au/centric/industry/our_network/demand_management.jsp, (accessed 17 September 2012).

92 AEMC, *Power of choice – giving consumers options in the way they use electricity draft report*, 6 September 2012, p. 118.

Energex, *Rewards for air-conditioning, pools and hot water*, http://www.energex.com.au/sustainability/sustainability-rewards-programs, (accessed 17 September 2012).

93 ESAA, *Submission 76*, p. 10.

the easiest, simplest and most cost efficient ways of doing so.[94] For example, in 2007 the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) estimated that 55 per cent of Australia's emission reduction target to 2050 could be met through energy efficiency improvements.[95]

5.87 The positive contribution of energy efficiency was supported by submitters to the inquiry:

> Energy efficiency is the low hanging fruit in the price rise challenge. Indeed, energy experts worldwide agree that it is by far the best option of cheaply reducing emissions and dealing with rising bills[96]

5.88 And:

> Energy efficiency has a downward impact on electricity prices in two ways. First it defers the need to invest in new generation and network capacity. Second it has a downward impact on wholesale electricity prices due to a reduction in demand. Energy efficiency is also likely to lead to a reduction in peak demand.[97]

5.89 ESAA flagged that further reductions in electricity consumption can still be derived from improvements in energy efficiency but voiced:

> One of the frustrations we have is that the perception of energy efficiency is things like low-energy light bulbs and televisions which are relatively second- or third-order ways to save energy. Frankly, the cost of the related systems—whether Foxtel or other things—is far more substantial than the energy used to run those appliances. By contrast where you really do want to focus households' attention is on energy savings in heating air and water—so, heaters, air conditioners and hot-water systems. With the current increases in energy bills, households almost invariably benefit from going to our five-star solar hot-water system or a gas five-star system and spending a bit extra to get the payback a lot quicker. It is the same with buying much more efficient heating and cooling for their houses, whether they rent or own, by spending more on an air conditioner if they can afford to. We are trying to change that focus from being on things that are symbolic and small rather than things that actually make a material difference. It will become an issue that the upfront capital cost of more efficient technologies by definition tends to be more expensive and it at

---

94 A. Talberg and I. McCluskey, *Bills Digest No.4 2012-13: Greenhouse and Energy Minimum Standards Bill 2012*, 14 August 2012, p. 4, http://parlinfo.aph.gov.au/parlInfo/download/legislation/billsdgs/1847699/upload_binary/1847699.pdf (accessed 14 September 2012).

95 Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), *Technology: Toward a low emissions future*, ABARES Research Report 07.16, ABARES, Canberra, September 2007, p. 7, http://adl.brs.gov.au/data/warehouse/pe_abare99001392/rr07_16_low_emissions.indd.pdf (accessed 14 September 2012).

96 ACT Greens, *Submission 1*, pp 1–2.

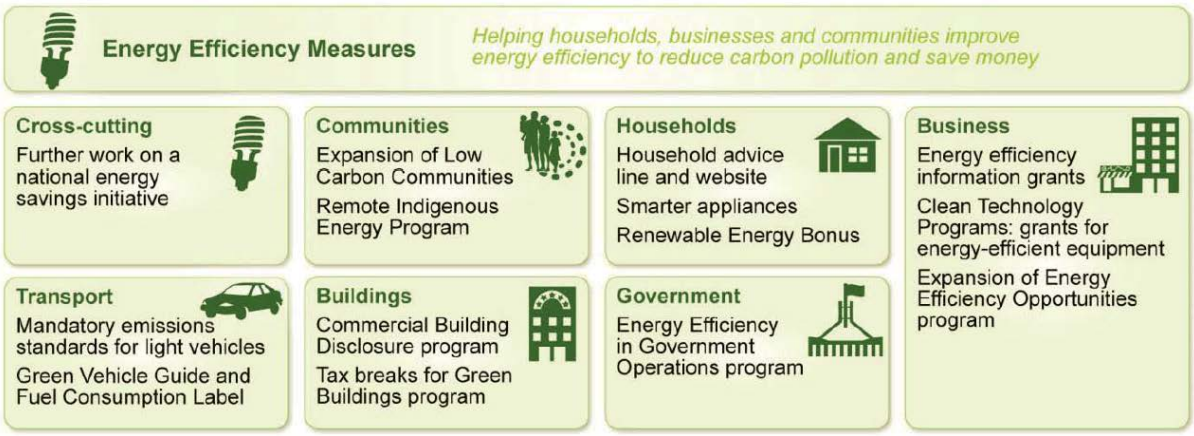
97 ClimateWorks Australia, *Submission 20*, p. 1.

> least explains what the payback is and why it is still a prudent investment. It may be that from work on this issue, it will drop out how we can trigger that smarter purchase.[98]

5.90 The Commonwealth and state and territory governments currently have various strategies in place to assist consumers to improve their energy efficiency. Some of these programs are discussed below.

5.91 As part of its climate change plan, the Commonwealth government noted that 'increased energy efficiency will have multiple benefits: lowering carbon pollution, improving energy security, and helping households and businesses cope with rising energy prices'.[99] Figure 5.7 provides an overview of government energy efficiency measures.

Figure 5.7: Overview of government energy efficiency measures[100]



Greenhouse and Energy Minimum Standards

5.92 The Greenhouse and Energy Minimum Standards came into effect on 1 October 2012.[101]

5.93 The framework, developed jointly with New Zealand and Australian states and territories, delivers consistent information and energy standards to consumers by

98 Mr Matthew Warren, Chief Executive Officer, ESAA, *Proof Committee Hansard*, 27 September 2012, pp 49–50.

99 Commonwealth government, *Securing a clean energy future: The Australian government's climate change plan*, Canberra, 2011, available: http://www.cleanenergyfuture.gov.au/wp-content/uploads/2012/06/CleanEnergyPlan-20120628-3.pdf (accessed 14 September 2012), p. 80.

100 Commonwealth government, *Securing a clean energy future: The Australian government's climate change plan*, Canberra, 2011, available: http://www.cleanenergyfuture.gov.au/wp-content/uploads/2012/06/CleanEnergyPlan-20120628-3.pdf (accessed 14 September 2012), p. 80.

101 Greenhouse and Energy Minimum Standards Bill 2012, section 2.

combining all state and territory regulations into one framework, overseen by a single national regulator.[102]

National Energy Savings Initiative

5.94 In October 2010, the Prime Minister's Task Group on Energy called for 'the introduction of a transitional energy savings initiative to replace existing and planned state energy efficiency schemes, subject to detailed consultation on its design'. The Commonwealth government agreed to undertake detailed policy analysis and economic modelling to 'expedite the development of a national energy savings initiative' (ESI) in consultation with the public and industry.[103]

5.95 In line with this commitment, the government established an ESI Working Group comprising officials from the Department of Climate Change and Energy Efficiency (DCCEE) and the DRET. The working group is assisted by an advisory group comprising state and territory government officials and representatives from industry, energy, community and environmental groups.

5.96 The ESI Working Group is currently examining the costs and benefits of a national ESI and intends to release a draft Regulation Impact Statement for consultation in the second half of 2012. Following this, the ESI Working Group will present final recommendations to the government.[104]

Energy efficiency programs

5.97 In addition to the ESI working group, there a number of government energy efficiency programs on a national level currently underway. These include the:

- Energy Efficiency Opportunities (EEO) program – encourages large energy-using businesses to improve their energy efficiency by requiring them to identify, evaluate and report publicly on cost effective energy savings opportunities. Participation in the program is mandatory for corporations that use more than 0.5 petajoules (PJ) of energy per year (equivalent to the energy used by 10 000 households);[105] there are more than 220 corporations (incorporating around 1200 subsidiaries) registered for the program

102 The Hon Mark Dreyfus QC MP, Parliamentary Secretary for Climate Change and Energy Efficiency, 'New Australian Energy Efficiency Framework forecast to save $5.2 billion in 2020 for households and business', Media release MD 12/44, 13 September 2012, available: http://www.climatechange.gov.au/~/media/Files/minister/dreyfus/2012/media/Dreyfus-MediaRelease-12-44.pdf, (accessed 17 September 2012).

103 Commonwealth government, *Securing a clean energy future: The Australian government's climate change plan*, Canberra, 2011, pp 80–81, http://www.cleanenergyfuture.gov.au/wp-content/uploads/2012/06/CleanEnergyPlan-20120628-3.pdf (accessed 14 September 2012).

104 DRET, *National Energy Savings Initiative*, available: http://www.ret.gov.au/energy/efficiency/savings/Pages/nesi-index.aspx, (accessed 17 September 2012).

105 This would equate to using more that $3–4 million for gas, $6–11 million for electricity or $18–21 million for diesel fuel.

(representing more than 60 per cent of the total amount of energy used by businesses, and around 45 per cent of all energy used in Australia).[106]

- Energy Efficiency Information Grant – $40 million over four years allocated to industry and not-for-profit associations to assist them to provide information on the smartest ways for small to medium sized enterprises to reduce energy costs.[107]
- Community Energy Efficiency Program – over $42 million in matching funding distributed to 63 local councils and non-profit organisations to undertake energy efficiency upgrades and retrofits to buildings, facilities and lighting.[108]
- Low Income Energy Efficiency Program – to provide grants to government, business and community organisations to trial approaches to improve the energy efficiency of low income households.[109]

State based energy efficiency schemes

5.98 There is a range of state energy efficiency policies encompassing a variety of initiatives, including:

- the provision of information to consumers;
- regulation of minimum standards;
- rebates and grants and the use of state based targets.

5.99 State schemes that offer incentives to adopt energy saving measures these include the:[110]

- Energy Savings Scheme (ESS) in NSW;[111]

106 DRET, *Energy Efficiencies Opportunities: About the program*, available: http://www.ret.gov.au/energy/efficiency/eeo/about/Pages/default.aspx, (accessed 17 September 2012).

107 DCCEE, *Energy Efficiency Information Grants Program Factsheet*, available: http://www.climatechange.gov.au/government/initiatives/energy-efficiency-information-grants/factsheet.aspx, (accessed 17 September 2012).

108 DCCEE, *Community Energy Efficiency Program*, available: http://www.climatechange.gov.au/government/initiatives/ceep.aspx, (accessed 17 September 2012).

109 DCCEE, *Low Income Energy Efficiency Program*, available: http://www.climatechange.gov.au/government/initiatives/lieep.aspx, (accessed 17 September 2012).

110 Clean Energy Council (CEC), *Energy Efficiency*, available: http://www.cleanenergycouncil.org.au/technologies/energyefficiency.html, (accessed 17 September 2012).

- Residential Energy Efficiency Scheme (REES) in South Australia;[112]
- Victorian Energy Efficiency Target (VEET) scheme;[113] and
- the ACT will commence a scheme in 2013.[114]

Committee comment

5.100 The committee shares the enthusiasm voiced about energy efficiency and its role in reducing consumption of electricity during the course of the inquiry. The committee supports the federal and state and territory governments' ongoing commitments to improving energy efficiency via the Greenhouse and Energy Minimum Standards (GEMS), energy savings initiatives and a range of energy efficiency programs and grants.

Embedded generation

5.101 The role of embedded generation[115] such as co- and tri-generation was discussed during the course of the inquiry.

5.102 Co-generation is the simultaneous production of electrical energy and thermal energy, and is also referred to as combined heat and power. Tri-generation is the simultaneous production of electrical energy, thermal energy and cooling.[116]

---

111 The ESS assists households and businesses to reduce electricity consumption and electricity costs using energy savings certificates as the 'currency' for the scheme. Households are assisted through Accredited Certificate Providers offering equipment to householders at a reduced cost; the savings are then transferred from the householder to the business which then creates energy savings certificates. Businesses can benefit when they invest in better technology to reduce their energy use as electricity retailers are required by law to then issue the business with energy savings certificates.

Energy Savings Scheme, *Overview of the scheme*, http://www.ess.nsw.gov.au/Overview_of_the_scheme, (accessed 17 September 2012).

112 REES commenced on 1 January 2009 and requires retailers with over 5000 electricity or gas residential customers to provide incentives to households to lower their energy bills through reduced energy consumption. REES allows for a number of low-income households to have access to energy audits, other incentives include the installation of Compact Flourescent Lamps and ceiling insulation.

Essential Services Commission of South Australia, *Residential Energy Efficiency Scheme*, http://www.escosa.sa.gov.au/consumer-information/residential-energy-efficiency-scheme.aspx, (accessed 17 September 2012).

113 VEET commenced on 1 January 2009 under the Victorian Energy Efficiency Target Act 2007. Under the scheme, accredited businesses can offer discounts and special offers on selected energy savings products at homes and businesses. Prescribed activities in the scheme include installation of high efficiency hot water systems, air heater/coolers, lighting, draught proofing, window treatments and purchase of efficiency appliances.

Essential Services Commission, *Victorian Energy Efficiency Target*, https://www.veet.vic.gov.au/Public/Public.aspx?id=Home, (accessed 17 September 2012).

114 DRET, *Submission 61*, p. 33.

115 Also known as distributed or decentralised generation.

5.103 Co-generation and tri-generation can use a variety of fuels however the majority of co-generation and tri-generation facilities in Australia use natural gas due to its availability, cost and greenhouse intensity. Co-generation and tri-generation is most attractive at sites with a large heating or cooling load, and can produce energy with a third of the emissions associated with coal-fired power.[117]

5.104 Embedded generation, such as co- and tri-generation, also has the ability to reduce electricity prices because electricity does not have to be transmitted over long distances along expensive infrastructure. The EEC highlighted that:

> The value of cogeneration is when it is being supplied and where it is being supplied. It is very expensive to transmit electricity, but you are often just transmitting it next door at a very low cost….At the moment there is not a good way to capture the value. You are often paying a very inflated distribution use of system charge, which does not reflect that you are carrying it only this far as opposed to all the way from Hunter Valley or Playford B, or wherever you are bringing the electricity from.[118]

5.105 The Clean Energy Council (CEC) described co-generation and tri-generation as providing distributed power generation at or near the point of consumption which lessens the need for expansion of the grid: 'This reduces transmission losses, stabilises the electricity grid and lessens the impact of rising electricity prices'.[119]

5.106 The simultaneous generation of electrical and thermal energy provides greater energy efficiency than systems providing power and heat separately:

> Less fuel is required to produce a given amount of energy because the conversion and transmission losses associated with the separate production of power and heat are avoided. This reduces the demand and costs associated with providing power and heat to a facility.[120]

5.107 Australia has a number of sites operating co- and tri-generation facilities, with hospitals being a good example where co-generation can offer additional benefits like improving the security of electricity supply.[121]

---

116 Clean Energy Council (CEC), available: http://www.cleanenergycouncil.org.au/technologies/cogeneration.html (accessed 16 October 2012).

117 CEC, available: http://www.cleanenergycouncil.org.au/technologies/cogeneration.html (accessed 16 October 2012).

118 Mr Robert Murray-Leach, Chief Executive Officer, Energy Efficiency Council (EEC), *Proof Committee Hansard*, 27 September 2012, p. 63.

119 CEC, available: http://www.cleanenergycouncil.org.au/technologies/cogeneration.html (accessed 16 October 2012).

120 CEC, available: http://www.cleanenergycouncil.org.au/technologies/cogeneration.html (accessed 16 October 2012).

121 Department of Primary Industries (DPI) (Victoria), available: http://www.dpi.vic.gov.au/energy/sustainable-energy/low-emissions-coal-and-gas/cogeneration (accessed 16 October 2012).

5.108 Low Carbon Australia advised the committee that because there are different regulatory arrangements in each state and territory, each project for co- or tri-generation must be dealt with on a case-by-case basis:

> …every single case really involves quite a complex regulatory set of approvals for every proponent, which does act as a detractor for a number of the operators. It is the same for any of the large manufacturing plants that are putting in biogas operations, for instance. These approvals really do need to be streamlined, but we have not documented individual cases; we just know that it adds significantly to the cost and also to the project time lines around getting approvals to install and connect, let alone actually being able to feed back into the grid.[122]

5.109 The Energy Efficiency Council (EEC) also raised some issues connected with co- and tri-generation:

> Any embedded generation in a building that runs in parallel with the grid—so it is contributing electrons to the building while the grid is contributing at the same time—can technically export. The equipment that is in place can physically send electrons out of the building for the betterment of the outside world. There are a couple of locations in Australia where the network company has prohibited an on-site generator from running in parallel, for a number of reasons. So we have sites where engines run and supply specific load in the building. There would need to be technical equipment put in to allow them to export, and some agreement with the network company, but the vast majority of the embedded generators in green buildings, as a generic term, would be synchronised with the grid.[123]

5.110 The problem was described as being '…a situation where, if you have energy in a building and it is exporting into the market, the money you are likely to get back from your retailer for the electricity that you export does not cover the cost of you generating it, even though it is probably being used in the building or next door at a much higher rate'.[124]

5.111 The EEC further highlighted some of the barriers to uptake of embedded generation. According to the EEC:

> …the NEM was designed around the ongoing operation of an electricity system that predominantly consisted of large generators in a small number of regions and extensive transmission and distribution networks. As such, the rules, regulations and technology that are in place have created many anticipated and unanticipated barriers to the uptake of distributed generation.[125]

---

122 Margaret McDonald, Low Carbon Australia, *Proof Committee Hansard,* 9 October 2012, p. 19.

123 Mr Robert Murray-Leach, Chief Executive Officer, EEC, *Proof Committee Hansard*, 27 September 2012, p. 63.

124 Mr Robert Murray-Leach, Chief Executive Officer, EEC, *Proof Committee Hansard*, 27 September 2012, p. 63.

125 EEC, *Submission, 75*, p. 18.

5.112 The committee understands that as soon as the generating organisation exports the electricity, it becomes very expensive to do so.[126] The EEC described the current system as 'a very expensive and inappropriate way to integrate that generation into the network'[127] and alerted the committee to the systemic disadvantage to the 'first-mover' who initiated the first connection to the distribution network:

> …with cogeneration if you are the first unit into an area there is a cost to augment the network, but for the three or four who come after you it is free—there are no augmentation costs. And then it goes again, and the next person has to pay a huge fee. It is a completely inappropriate system that was not set up for distributed generation…[128]

5.113 The CEC believed that connecting to the network was a significant impediment and alleged that transmission businesses block access to new entrants.[129] The CEC acknowledged that the AEMC had 'recognised it is a problem' and as a result was conducting the Transmission Frameworks Review.[130] Mr Russell Marsh, Director of Policy at the CEC, stated:

> One of the things we say is that a lot of the time the generators—the guys who are trying to put in the renewable energy plant—are effectively negotiating with one hand tied behind their backs because they do not have access to information that the transmission companies have. Whilst the transmission companies and the regulator will insist that it is a level playing field, if you talk to some of the developers one of the biggest problems they have is that transmission companies—and it is the same in the distribution network—have all the data as to the process, what the benefits or otherwise are and what the cost of the connection would be. It is very difficult for the developer to get access to that information, so they are not able to have a negotiation with the transmission operator or the distribution operator on what they would call a fair basis because they effectively have one hand tied behind their back.
>
> As you know, the transmission framework review is going on, and one of the things that is looking at is how to improve the connections process. To the credit of the AEMC, they have recognised it is a problem. We have some concerns as to some of the proposals they are putting forward to try to solve that. We are not sure that their proposals at the moment solve the

126 Mr Robert Murray-Leach, Chief Executive Officer, EEC, *Proof Committee Hansard*, 27 September 2012, p. 63.

127 Mr Robert Murray-Leach, Chief Executive Officer, EEC, *Proof Committee Hansard*, 27 September 2012, p. 63.

128 Mr Robert Murray-Leach, Energy Efficiency Council, *Proof Committee Hansard*, 27 September 2012, p. 63.

129 Mr Russell Marsh, Director of Policy, CEC, *Proof Committee Hansard*, 27 September 2012, p. 52.

130 AEMC, *Market Reviews: Transmission Frameworks Review*, available: http://www.aemc.gov.au/market-reviews/open/transmission-frameworks-review.html (accessed 29 October 2012).

> problem that has been identified but it is clear that they have identified that there is an issue around the connection process, particularly for renewable energy technologies. We are working quite closely with them to try to understand a bit more about the proposals have come up with quite recently, and why we do not think that they necessarily do the job that the AEMC think they are. Hopefully, as the transition framework review process moves forward we may get some clarity and some improvement in that process.[131]

5.114 In order to try to fix some of these problems, the committee heard that a major review of the current model was required, including a review of the revenue model that currently operates.[132]

5.115 The EEC called for 'barriers to distributed generation, including access and cost sharing arrangements' to be addressed[133] and argued that:

> Removing the barriers to DG distributed generation would contribute to many of the NEO's goals. For example, appropriately sited, sized and managed distributed generation can:
>
> - Reduce electricity prices by avoiding or deferring investment in supply-side infrastructure; and/or
> - Improve safety in regional areas by obviating for the need for long-distance distribution systems that create bushfire and other safety hazards.[134]

5.116 The EEC went on to recommend:

- a long term process to set up systems to ensure distributed generators can secure a fair return for the value of embedded generation;
- streamlining and regulating the process for connecting co-generation to the grid; and
- targeted support for innovative applications of embedded generation.[135]

5.117 In addition, the EEC was eager to ensure that embedded generators are supported and provided incentives to reduce network investment. To achieve this, the EEC put forward two proposals: a requirement for network businesses 'to provide robust and timely data on upcoming network constraints and the value of deferral'[136]

---

131 Mr Russell Marsh, Director of Policy, CEC, *Proof Committee Hansard*, 27 September 2012, pp 52–53.

132 Mr Robert Murray-Leach, Chief Executive Officer, EEC, *Proof Committee Hansard*, 27 September 2012, p. 65.

133 EEC, *Submission 75*, p. 2.

134 EEC, *Submission 75*, Attachment 1, p. 6.

135 EEC, *Submission 75*, Attachment 1, p. 2.

136 EEC, *Submission 75*, pp 14–15.

and '…a transparent, location-specific network support payment [to embedded generators] where they reduce or defer expenditure on the grid'.[137]

Residential and other solar programs

5.118 The committee received information about residential and other solar programs and wants to draw attention to several key points as they relate to electricity prices.

5.119 As noted in Chapter 3, there are differing views about the impact of residential solar PV systems on the cost of electricity. Some of the generous feed-in-tariffs (FiTs) in the early state and territory programs may have contributed to price increases, but more recent arrangements, together with a potential reduction in demand and the potential savings on networks costs may lessen the price impacts of residential solar PV and even lead to savings:

> It is important to make a distinction with feed-in tariffs. Most governments had premium feed-in tariffs in place up until early this year or last year, and they gave consumers who installed solar panels a greater subsidy, if you like, than the inherent value of that energy onto the market. Those consumers received money for that, and that resulted in rises in other consumers' bills. Those rises are now locked in. Those consumers are now assured of their income, and since then all of those governments have removed premium feed-in tariffs. Now the feed-in tariffs that are on offer are at a lower rate. The rate that the feed-in tariffs are offered at now is in most cases less than the benefit that is produced by those solar panels—in other words, the benefit of solar panels in terms of the value of distributed energy, the wholesale market value, the reduced losses in the network, the downward pressure on wholesale prices and so on.[138]
>
> Particularly within Australia, we are seeing falling domestic and commercial consumption because of self-generation through electricity from solar panels. We are seeing improved energy management systems in businesses and households that are reducing consumption as well.
>
> One of the decisions we are making right at the moment is more investment in poles and wires at a time when electricity consumption is falling, and that electricity consumption is falling at least in good part because of distributor generation from solar that is reducing the impact or the likely impact of need for more poles and wires into the future.[139]

5.120 The Alternative Technology Association (ATA) held a similar view, informing the committee of some interesting developments in South Australia:

> AEMO has concluded that rooftop solar in South Australia contributes significantly towards meeting peak demand.

---

137 EEC, *Submission 75*, Attachment 1, p. 4.

138 Mr Craig Memery, Senor Energy Advocate, Alternative Technology Association of Australia (ATA), *Proof Committee Hansard*, 3 October 2012, p. 6.

139 Professor Raymond Wills, Chief Adviser, Sustainable Energy Association of Australia, *Proof Committee Hansard*, 2 October 2012, p. 36.

> As is well known, energy efficiency, such as the South Australian energy efficiency scheme, both reduces wholesale energy prices and is cheaper than network investment as a cost passed through to all consumers. The prevalence of increasing levels of energy efficiency, solar PV and wind power in South Australia have resulted in only yesterday a draft decision by the South Australian regulator to reduce the regulated tariff by 8.1 per cent in response purely to price reductions at the wholesale level.[140]

5.121 It was suggested that some of the new arrangements for installing and connecting solar panels are much simpler for households:

> Our view is that, with the rapidly reducing price of solar panels, many of the schemes that are being promoted to offer subsidies directly to a household can be simply delivered by installing solar panels in those households and, in some cases, delivering a third or a half of their energy for free once those solar panels are in place, and offering some certainty in supply that does not rely on direct supply from a retailer in that context.[141]

5.122 Professor Ray Wills of the Sustainable Energy Association of Australia also explained how solar panels could assist vulnerable consumers and family's in remote areas:

> We have not done any technical modelling of it but certainly in terms of the concept we have discussed it widely, and I guess the key example is that, in today's market, a one kilowatt system, which could potentially produce 20 per cent of a household's electricity, would cost a little more than $1,000 in the current market. If you take that to a slightly bigger system to supply more of that particular customer's needs, 1½ or two kilowatts, then you may be able to source that en masse for in the range of $1,500 to $2,000. To offer a tangible example of that, currently in the debate within the Western Australian market, the opposition leader has suggested the sum of $200 million might be required to help families in the bush to meet payments on electricity so that we keep the price of electricity in the bush the same as that in the city, while still relieving the city customers of that payment that currently is a cross-subsidy through community service obligation payments. That sum of $200 million is about 100,000 households in the bush. That means that you could put solar panels on every one of those houses for around $200 million.[142]

5.123 Mr Ric Brazzale from the REC Agents Association was equally positive about the prospects of solar PV generation supplying electricity during periods of peak demand in the late afternoon in NSW.[143] However, the committee remains mindful of

---

140 Mr Damien Moyse, Projects and Policy Manager, ATA, *Proof Committee Hansard*, 3 October 2012, p. 2.

141 Professor Raymond Wills, Chief Adviser, Sustainable Energy Association of Australia, *Proof Committee Hansard*, 2 October 2012, p. 37.

142 Professor Raymond Wills, Chief Adviser, Sustainable Energy Association of Australia, *Proof Committee Hansard*, 2 October 2012, p. 37.

143 Mr Ricardo Brazzale, President, REC Agents Association, *Proof Committee Hansard*, 9 October 2012, p. 22.

the limitations of solar systems in relation to meeting residential peak demand, even when new storage technologies are deployed, as explained by Mr McConnell:

> [I]n South-East Queensland, if you look at generation here—we heard figures before about South Australia—solar particularly does not really lend itself to mitigating peak demand. The peak demand in Queensland and South-East Queensland is between four and 8 pm. At seven or eight o'clock at night, solar does not work.
>
> I am happy to talk a little bit about storage, because there are a lot of things happening in that area in terms of solar storage. For example, the University of Queensland have 1.2 megawatts of solar PV on the roof at St Lucia.
>
> It is wonderful. Professor Paul Meredith and we worked collaboratively together on that at the time. They were looking for some assistance from us, and I was involved with those discussions. I said: 'Paul, thanks very much but no, because solar is not going to impact on peak demand. But, if you then decide to put some battery storage in, yes, we would work with you.' To make a long story short, they did. They have put in, I think, about 400 kilowatts of battery storage. It is prohibitively expensive, and that is the problem. Storage is going to have an impact on networks going forward. That is a fact of life. The problem is that we have to learn about what storage does to the network and what the most cost-effective type of storage to use is, because at this stage it is still very expensive to install. That 400 kilowatts was, I think, about $2½ million or $3 million. So storage is going to make a difference.[144]

5.124 The committee also noted the need to potentially redesign electricity networks, to better cope with embedded generation systems, such as solar PV:

> But, when you get to larger embedded generation, technical issues arise because the system is not designed to just automatically take it—you just cannot put a large embedded generator anywhere in the system and expect it to work. So it becomes a case-by-case issue and I am sure we can improve and get faster and more responsive at that. The AEMC's *Power of choice* paper again goes to trying to help enable the frameworks and promote these things more widely, because this is a part of our new business. We recognise that it needs to be a part of our business going forward, but we have to get better at it.[145]

Committee comment

5.125 The committee recognises the positive contribution that embedded generation can have on reducing electricity consumption with equally positive flow-on effects for the environment. The committee was particularly heartened by the current research activity in this area, as demonstrated to the committee at its site visit to the Commonwealth Scientific and Industrial Research Organisation (CSIRO) Energy Centre on 24 October 2012: for example, the direct injection coal engine, renewable

144 Mr Terry McConnell, *Proof Committee Hansard*, 3 October 2012, p. 22.

145 Mr Hugh Gleeson, Chief Executive Officer, United Energy, *Proof Committee Hansard*, 9 October 2012, p. 18.

energy integration systems and solar cooling. The committee hopes that mainstream residential and commercial application of these projects will be a reality in the near future.

5.126 The committee is sympathetic to the concerns raised during the course of the inquiry about impediments to embedded generation, including solar PV, associated with network design, connection and costs, and payments for energy generated and fed into the grid (that is, feed in tariffs). However, the committee also notes that the impacts of embedded generation on the electricity network and centralised generation need to be better understood: both CSIRO and the Smart Grid, Smart City trial are examining these impacts and the committee is supportive of this.

5.127 As the interaction between embedded and centralised generation are better understood, and given the positive impacts of embedded generation, it is the committee's view that barriers to its wider implementation—both residentially and commercially—should be removed.

5.128 Similarly, consideration should be given to standardising embedded generation connection processes across jurisdictions in the NEM. The committee therefore recommends that SCER examine current barriers to embedded generation, particularly those related to network design, connection and costs, and FiT payments. The committee also recommends that SCER consider standardising connection processes for embedded generation in the NEM, including a standard connection protocol and licencing regime for embedded generation. In the committee's opinion, relevant state and territory energy ombudsmen and / or tribunals should also be empowered to intervene where embedded generators and NSPs are unable to resolve matters associated with connecting these generators to the grid.

5.129 The committee is also receptive to the EEC's proposals to support and offer incentives to embedded generators where they reduce network investment: that is, the release of annual maps of network constraints and their value, and location-specific network payments to embedded generators. The committee therefore recommends that SCER direct the AEMC to develop rule changes to implement these two proposals.

Recommendation 11

5.130 **The committee recommends that SCER:**

- **examine current barriers to embedded generation, particularly those related to network design, connection and costs, as well as FiT payments;**
- **empower relevant state and territory ombudsmen and / or tribunals to intervene where embedded generators and NSPs are unable to resolve disputes;**
- **standardise connection processes for embedded generation in the NEM and include a requirement for a standard connection protocol and licencing regime for embedded generation within the NEM;**
- **direct the AEMC to develop a rule change requiring the release of annual maps of network constraints and their value by network businesses; and**

- **direct the AEMC to develop a rule change to establish a default system of location-specific network support payments for embedded generation.**

5.131 More broadly—and as discussed by the EEC—the committee recognises the cost-savings that can be derived where electricity is generated closer to the point of consumption by reducing the need for expensive transmission infrastructure. For this reason, the committee recommends that the AEMC implement changes to the regulatory framework so that network charges for embedded generators reflect the cost of using only the relevant section of the network and provide incentives for generators to build in locations where the costs associated with transmission are reduced.

Recommendation 12

5.132 **The committee recommends that SCER direct the AEMC to:**

- **review the NER so that network charges for embedded generators reflect the cost of using only the relevant section of the network; and**
- **implement changes to the regulatory framework in order to provide incentives for generators to build in locations where the costs associated with transmission are reduced.**

5.133 Similarly, the committee is sympathetic to the concerns raised by the CEC regarding negotiations between generators and transmission businesses: the committee agrees that all generators, irrespective of the source of generation, should be able to negotiate on a 'fair basis'.[146] To address this concern, the committee recommends that the AEMC investigate ways to introduce greater transparency in negotiations between transmission businesses and all generators.

Recommendation 13

5.134 **The committee recommends that the AEMC investigate ways in which greater transparency can be introduced in negotiations between transmission businesses and generators.**

Other strategies to support business and industry

5.135 The committee heard from CSIRO's Energy Transformed Flagship that it is employing a range of strategies to be able to offer solutions for business and industry to reduce their electricity use:

> …we have developed a retrofit technology for commercial buildings that can reduce overall energy consumption of commercial buildings and we have demonstrated in trials between 10 and 20 per cent and a peak demand reduction of up to 30 per cent.[147]

146 Mr Russell Marsh, Director of Policy, CEC, *Proof Committee Hansard*, 27 September 2012, p. 52.

147 Dr Alex Wonhas, Director, Energy Transformed Flagship, Commonwealth Scientific and Industrial Research Organisation (CSIRO), *Proof Committee Hansard*, 9 October 2012, p. 46.

5.136 In addition, CSIRO is undertaking research to understand energy flows in buildings with a view to improving building design to reduce electricity consumption, and removing barriers to co- and tri-generation plants that can be installed in the base of a building. CSIRO advised that they had rolled out one of the first tri-generation systems in Australia, using a heat driven cooling technology.[148]

5.137 CSIRO also provided advice in relation to commercial office buildings where air conditioning is typically 60 per cent of energy use. CSIRO has developed technology to reduce 30 per cent of energy in air conditioning. In a more industrial setting, CSIRO is also working on 'optimal refrigeration control, which helps everyone in the cold chain, from people with large-scale apple storage through to supermarkets.'[149]

5.138 CSIRO provided a specific example of a project at Castlemaine involving a small goods manufacturer, a large motor company, a hospital and a couple of other very traditional industrial-style businesses to assist them understand how to reduce peak demand and how that may affect their business operations.[150]

5.139 The committee was told by the Australian Chamber of Commerce and Industry (ACCI) of the importance of the price of energy on the Australian economy:

> …low-cost energy is an important source of comparative advantage for the Australian economy. Access to efficient, reliable energy underpins the international competitiveness of industry, and the efficient supply of energy is a key factor underlying a high-wage, high-productivity economy.[151]

148 Dr Glenn Platt, Theme Leader, Local Energy Systems, Energy Transformed Flagship, CSIRO, *Proof Committee Hansard,* 9 October 2012, p. 47.

149 Dr Glenn Platt, Theme Leader, Local Energy Systems, Energy Transformed Flagship, CSIRO, *Proof Committee Hansard,* 9 October 2012, p. 47.

150 Dr Glenn Platt, Theme Leader, Local Energy Systems, Energy Transformed Flagship, CSIRO, *Proof Committee Hansard,* 9 October 2012, p. 48.

151 Mr Greg Evans, Director of Economics, Australian Chamber of Commerce and Industry (ACCI), *Proof Committee Hansard,* 9 October 2012, p. 54.

Chapter 6

Consumer protections

6.1 As discussed in Chapter 3, residential consumers in Australia have experienced increasing prices for electricity. The reasons for these increases have been explored in earlier chapters as have ways in which demand for electricity can be reduced through mechanisms such as cost reflective pricing, a demand response mechanism, information and consumer empowerment and a range of technological solutions.

6.2 This chapter examines the impact of these price increases on residential consumers and discusses protections to prevent consumers from experiencing adverse impacts associated with mechanisms to reduce demand for electricity.

Impact of increased electricity prices on consumers

6.3 The impact of increasing electricity prices on residential consumers cannot be denied: with limited budgets, many Australian households are finding it difficult to absorb the additional cost of higher electricity bills and are being forced to make challenging decisions about the allocation of household income to essentials such as rent, food and utilities.

6.4 Numerous individuals, consumer advocacy groups and unions voiced their concerns about the affordability of higher electricity bills during the course of the inquiry.[1] Ms Carolyn Hodge, Senior Policy Officer, Energy and Water Consumers' Advocacy Program, of the Public Interest Advocacy Centre (PIAC) stated:

> The issue of rising electricity prices should be understood by the impact on people. In summary, the most recent electricity price rise sees people in New South Wales facing an increase of between $208 and $427 for an average annual electricity bill. This comes on top of a recent history in which double-digit price rises have become the norm.
>
> We see price rises translate into rising disconnection numbers in New South Wales. According to the most recently available figures, approximately 18½ thousand people were disconnected for non-payment of bills in the 2010-11 financial year, and this is up by 15,835 from the previous year. Within this group, 18½ per cent, or nearly 3½ thousand people, were pension recipients and almost 1,500 people were disconnected more than once.
>
> We are increasingly aware that people in the workforce are also struggling to pay their electricity bills. Additionally, PIAC hears from community organisations who are inundated with requests for assistance to pay

1 For example see Consumer Utilities Advocacy Centre (CUAC), *Submission 2*, p. 1; Mr Ray Davis, *Submission 4*, p. 1; Mr Barry Spencer, *Submission 6*, p. 1; Mrs Lynette Oakes, *Submission 7*, p. 1; Ethnic Communities Council of NSW, *Submission 11*, p 1; St Vincent de Paul Society, *Submission 36*, p. 3; Public Interest Advocacy Centre, *Submission 60*, pp 2–3; and United Voice, *Submission 77*, p. 1.

> electricity bills, and our own research tells us that people are choosing not to heat or cool their homes because of concerns about cost, even when they need that heating or cooling to manage a medical condition.[2]

6.5 The Energy and Water Ombudsman Victoria (EWOV) informed the committee that it had seen an 'increasing number of Victorians contacting EWOV for assistance with energy and water matters' due to 'customer concerns about rising energy and water prices and associated affordability issues'.[3] In the four years since 2007–08, EWOV had seen a 225 per cent increase in payment difficulty cases because '[e]nergy and water prices are rising and people tell [EWOV] they are facing other cost of living pressures'.[4]

6.6 The Energy and Water Ombudsman NSW (EWON) observed a similar trend in that state.[5] EWON stated that '[d]isconnections because of inability to pay are of critical concern and the NSW electricity and gas disconnections rates remain too high'.[6]

6.7 Bringing the very real impact of rising electricity prices on the day-to-day lives of Australians into sharp focus, Ms Louise Tarrant, National Secretary of United Voice, shared a poignant personal account of one of the union's members:

> A lot of our members are struggling with the impacts of massive increases in utility costs over recent years. They are also facing a dilemma in how they respond to that challenge.
>
> …
>
> I want to quote from a member who sent me an email this morning, because we wanted to make sure our members' voices are very clearly heard. This is from a woman called Emily. She is one of our senior childcare representatives. In fact, she was our representative on a government board looking at training requirements in the childcare sector. She came home from the meeting to find that her electricity had been cut off, and this is what her experience was: "When I got home from the meeting, the electricity was just totally cut off. The company wouldn't turn it back on without me paying, so I used whatever funds I had left to pay. I used up my holiday fund. Then they said it'd take five to six hours to reconnect, and then added another $150 as a reconnection fee. I had to pay it all on the spot. I didn't want to be home in the dark with my four-year-old, so I had to take her to my mum's house to have a bath. We live in a tiny two-bedroom unit. It's really hot in summer and really cold in winter. We used to use air conditioning and heaters, but we don't anymore. We just pile on the

2 Ms Carolyn Hodge, Senior Policy Officer, Energy and Water Consumers' Advocacy Program, Public Interest Advocacy Centre (PIAC), *Proof Committee Hansard*, 25 September 2012, p. 56.

3 Energy and Water Ombudsman Victoria (EWOV), *Submission 13*, p. 2.

4 EWOV, *Submission 13*, p. 4.

5 Electricity and Water Ombudsman NSW (EWON), *Submission 21*, p. 3.

6 EWON, *Submission 21*, p. 3.

> blankets. I'm trying to live on low wages, all these bills going up. In one year it's gone up so much. At what point does it stop?"[7]

6.8 Other submitters similarly raised the impact of increasing electricity prices on their daily lives, and the steps they have taken to limit their electricity consumption. Ms Jan Turner explained:

> We have all energy efficient light bulbs throughout the house and only one bulb in each room. We use neither electric heating nor air-conditioning, cook on an electric stove but seldom use the oven as that is too expensive using stove top or microwave instead, we both take one minute showers and I follow my husband into the shower to save waste. Exactly how are we supposed to cut down any more? Eat our meals raw or eat in the middle of the night? Give up watching television at night?[8]

6.9 Mr Mark Hattersley described his efforts to minimise electricity usage:

> …I've been paying AGL an average of $150 bill per quarter, which many would call enviably modest…Few Australians would tolerate the self-imposed discipline whereby I achieve that figure: no freezer, no TV, no computer, no washing machine, no lights, no stove / oven, and no hot showers…I do "economize" drastically, in order to keep my bill to $150: but how many people are prepared to put up with such humiliating deprivation?[9]

6.10 Whilst Australians across socioeconomic groups are facing the financial challenge of higher electricity prices, the disproportionate impact on low income and vulnerable consumers was an area of particular focus throughout the inquiry. In its submission, Jesuit Social Services stated that '[t]he impact of increasing supply charges is most acutely felt by low income earners'.[10] Jesuit Social Services continued:

> One common group of low income households is pensioners, who often live as couples or single occupants in small units. Even when concessions are taken into account, a pensioner earning $347.65 per week who uses 57.5 kilowatt hours could spend around 5.2% ($18.07) of their weekly income on electricity costs. As figures 3 makes clear, the amount of this that is taken up by supply charges is the same as households with higher levels of income.

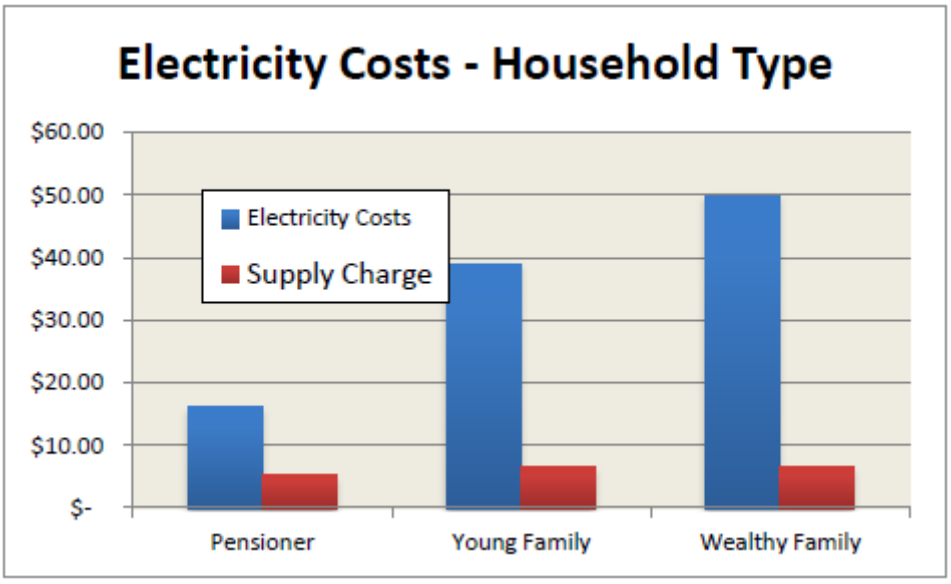
---

7 Ms Louise Tarrant, National Secretary, United Voice, *Proof Committee Hansard*, 9 October 2012, p.59.

8 Ms Jan Turner, *Submission 32*, p. 1.

9 Mr Mark Hattersley, *Submission 54*, pp 3–4.

10 Jesuit Social Services, *Submission 95*, p. 6.



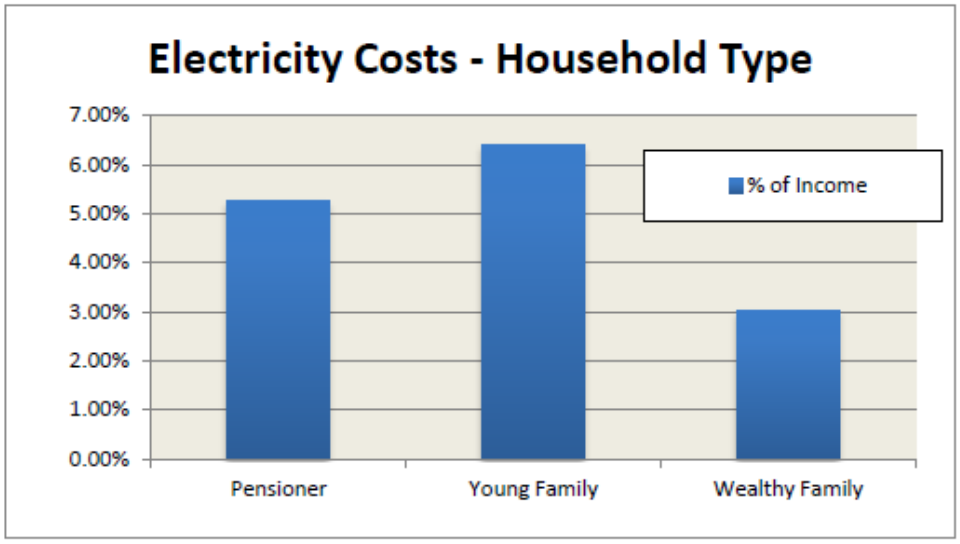


Figure 3 & 4: Impact of electricity prices on different income groups

The overall impact of rising electricity prices on different household types is made clear in figures 3 and 4. Households with lower incomes are spending a greater proportion of their income on meeting the rising costs of electricity. As these incomes are growing at a lower rate than incomes in the higher two quintiles, this burden is likely to increase. Figure 4 shows how young families on low incomes are particularly hard hit by electricity costs. This group, referred to as the "family formation" group, have young children, which leads to more power use because:

- More people means more usage of appliances and entertainment generally;
- Kids will be home during "Peak" hours when electricity is more expensive;
- Young children are already stretching the family income, both due to increased costs and because of parents working less hours.

> These factors combine to mean that a family formation household on a low income ($709 per week) might pay up to 6.4% of their weekly income on electricity costs compared to 3% for a high income family (in the 5th [q]uintile).[11]

6.11 The Combined Pensioners and Superannuants Association of NSW (CPSA) concurred:

> There are currently over 5 million Australians in receipt of an income support payment from Centrelink. These people struggle on low fixed incomes to pay for basic goods and services. In particular, those who rely solely on either a pension or allowance (the majority) are unable to afford essentials, including utilities.
>
> …
>
> According to the Association of Superannuation Funds Australia (ASFA), a single retiree needs to spend approximately $22,000 per annum to sustain a modest standard of living. This budget standard allows for an electricity bill of $35.08 per week or $1824.16 per year. Yet with average bills now coming in at $2876 per annum it is clear that in particular, pensioners on lower fixed incomes are simply unable to pay for their electricity usage.[12]

6.12 The Australian Council of Social Service (ACOSS) shared this concern, while drawing attention to the energy inefficiency of the housing stock in which many low income and vulnerable consumers live:

> People living on low incomes are experiencing significant pressures as a result of substantial increases in the cost of electricity, without a concomitant increase in income. Low income people are most likely to live in poorly-insulated and inefficient rental accommodation, and spend a higher proportion of their income on energy, water and fuel than others. They are least able to respond to increases in prices and to invest in more efficient homes. Given that energy is an essential service, energy price rises leave the most vulnerable households with little option but to pay the extra.[13]

Committee comment

6.13 Rising electricity prices are having a real and undeniable impact on Australian households: increased numbers of disconnections and greater numbers of consumers seeking assistance from energy and water ombudsmen are just some indicators of this. The personal accounts shared with the committee emphasise the extent of the problem and demonstrate the great lengths to which consumers are already going in their efforts to reduce their electricity consumption and minimise their bills. The committee believes these accounts are but a small sample of experiences shared by many Australians around the nation struggling with electricity bills. Further, these examples

---

11 Jesuit Social Services, *Submission 95*, pp 6–7.

12 Combined Pensioners and Superannuants Association of NSW (CPSA), *Submission 18*, p. 2.

13 Australian Council of Social Service (ACOSS), *Submission 67*, p. 4.

serve to strengthen calls for action and innovative solutions that enable consumers to reduce their electricity consumption in ways that do not sacrifice their quality of life.

6.14 In this context, the committee wishes to ensure that appropriate protections accompany the implementation of demand reduction mechanisms (see Chapter 5). The committee is particularly cognisant of the risk of low income and vulnerable consumers being negatively affected and believes that special consumer protections are warranted to ensure that these consumers do not, perversely, see their electricity bills rising further.

National Electricity Objective

6.15 As outlined in Chapter 4, the National Electricity Objective (NEO) is:

> 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.[14]

6.16 Concern was raised that the NEO does not adequately uphold the interests of consumers and therefore requires amendment.[15]

6.17 PIAC highlighted that the electricity system can only be considered to be working in the long-term interests of consumers with regards to price and security of supply if issues related to affordability are considered and addressed as part of policy initiatives[16]. PIAC submitted that:

> …any analysis of electricity prices must include an analysis of the social safety net that is struggling to keep people connected to this essential service. Allowing these two issues to continue without any link will see the divide between electricity costs and assistance grow even greater than it is today…[17]

6.18 PIAC recommended that the NEO should be changed to include "affordable access" with respect to the supply of electricity.[18]

6.19 The Standing Council on Energy and Resources (SCER) Expert Panel *Review of the Limited Merits Review Regime Stage Two Report* also argued the NEO could better state a commitment to the long-term interests of consumers.[19] The panel noted

---

14 National Electricity Law (NEL), section 7.

15 PIAC, *Submission 60*, pp 4–5.

16 PIAC, *Submission 60*, p. 4.

17 PIAC, *Submission 60*, p. 5.

18 PIAC, *Submission 60*, p. 5.

19 Professor G. Yarrow, the Hon. M. Egan and Dr J. Tamblyn, *Review of the Limited Merits Review Regime: Stage Two Report*, 30 September 2012, p. 38.

that assessments of efficiency need to balance cost considerations with other factors beyond the notion of pure economic efficiency itself.[20] The panel wrote that:

> It is the Panel's view that this is precisely what the reference to 'for the long-term interests of consumers' in the legislation provides, and the recommendations therefore serve to reinforce the intended meaning.[21]

6.20 As a result, the panel recommended that the NEO be changed to read 'in ways that best serve the long term interests of consumers' rather than 'for the long term interests of consumers'.[22]

National Energy Consumer Framework

6.21 The National Energy Customer Framework (NECF) is a national regime for the sale and supply of electricity and gas by retailers and distributors to retail consumers. It is a major component of the national energy market reform program as agreed by the Council of Australian Governments (COAG) under the Australian Energy Market Agreement (AEMA).[23]

6.22 The legislation and rules that gives effect to the framework was passed by the South Australian Parliament in March 2011.[24] NECF commenced in the Australian Capital Territory (ACT) and Tasmania on 1 July 2012 (see also Chapter 2). New South Wales (NSW), Victoria and South Australia will commence the NECF as soon as is practicable.[25] Queensland is yet to consider application of NECF in that state.[26]

Overview

6.23 NECF contains a range of consumer protections relating to the supply of energy to retail consumers, retailer authorisations, compliance monitoring and reporting.

---

20 Professor G. Yarrow, the Hon. M. Egan and Dr J. Tamblyn, *Review of the Limited Merits Review Regime: Stage Two Report*, 30 September 2012, p. 38.

21 Professor G. Yarrow, the Hon. M. Egan and Dr J. Tamblyn, *Review of the Limited Merits Review Regime: Stage Two Report*, 30 September 2012, p. 38.

22 Professor G. Yarrow, the Hon. M. Egan and Dr J. Tamblyn, *Review of the Limited Merits Review Regime: Stage Two Report*, 30 September 2012, p. 38.

23 Department of Resources, Energy and Tourism (DRET), *Submission 61*, p. 33.

24 The National Energy Consumer Framework (NECF) is created by the *National Energy Retail Law (South Australia) Act 2011* (SA). The passage of the legislation through the South Australian Parliament did not result in the immediate commencement of the NECF in South Australia.

25 DRET, *National Energy Customer Framework*, www.ret.gov.au/energy/energy_markets/national_energy_customer_framework/Pages/NationalEnergyCustomerFramework.aspx (accessed 25 October 2012).

26 DRET, *National Energy Customer Framework*, www.ret.gov.au/energy/energy_markets/national_energy_customer_framework/Pages/NationalEnergyCustomerFramework.aspx (accessed 25 October 2012).

6.24 The framework provides for consistent consumer protections across all participating jurisdictions. The framework ensures that customers are to get full details of the terms of their energy contract and have the contract explained in terms they understand before signing. Minimum terms and conditions must also be contained in a customer's energy contract.

6.25 Policies relating to customer hardship are included in NECF. Retailers are required to develop consumer hardship policies which include certain prescribed elements to assist residential consumers experiencing longer-term payment difficulties.

6.26 Under NECF, consumers must also be protected from poor marketing practices, unwanted calls and poor customer service. NECF also protects consumers from disconnection where they are registered as having life support equipment at their premises.

6.27 NECF has also seen the introduction of a price comparator website (www.energymadeeasy.gov.au) that will assist consumers to compare different prices offered by retailers in their area. Further, the framework requires retailers to provide customers with more detailed information on their bills.

6.28 For retailers, NECF removes regulatory overlap and unnecessary divergence between jurisdictions. The introduction of a national retailer authorisation decreases the current regulatory duplication where a retail license must be obtained in each separate jurisdiction.

6.29 The Department of Resources, Energy and Tourism (DRET) stated that harmonising consumer protections across the National Electricity Market (NEM) would result in benefits that:

> …enable industry to pass on the savings they realise from reduced compliance costs and barriers to market entry to customers through lower energy prices. Further, customers will be empowered through access to more information about their consumption and the services available to them.[27]

Support for NECF

6.30 Consumer advocacy groups and welfare organisations were supportive of NECF because it would help protect customers and assist them to better understand electricity prices.[28] For example, CHOICE submitted that:

> … the National Energy Customer Framework (NECF) should be agreed and adopted by all jurisdictions as soon as possible. In particular we recommend the fast-tracking of obligations on retailers to supply Energy Price Fact Sheets and tariff information for the Australian Energy Regulator's price

27 DRET, *Submission 61*, p. 46.

28 For example see PIAC, *Submission* 60, p. 11; ACOSS, *Submission 67*, pp 13–14; CHOICE, *Submission 73*, p. 16;

comparison site, www.energymadeeasy.gov.au, as provided for under the NECF.[29]

6.31 Mr Gerard Brody from the Consumer Action Law Centre (CALC) similarly stated:

> The benefits of a nationally consistent framework include being able to have one clear enforcement agency and having a much more robust range of enforcement powers to deal with misconduct amongst retail energy providers. At the moment our state regulators have much more restrained range of enforcement mechanism, often just taking away their licence or writing them a letter; there is nothing in between. That sort of framework has real prospects at a national level, so we would like to see a move to that national customer framework coming into place while ensuring that it reaches the best practice standards.[30]

6.32 Whilst supportive of NECF, consumer advocacy groups did raise some concerns that the framework would not provide the same level of consumer protections in Victoria as the current state framework.[31] Ms Caitlin Whiteman from the Consumer Utilities Advocacy Centre (CUAC) summarised these concerns:

> Victorians, with our high rate of churn, our smart meters and the imminent introduction of flexible pricing, need some protections that are not included. We do not want to go down a level when we have a market that is getting more and more intense.[32]

Committee comment

6.33 NECF provides energy consumers with valuable protections whilst simultaneously providing benefits to electricity retailers by removing duplicative red tape. For these reasons, the committee supports NECF and its introduction in the NEM.

6.34 The committee praises the ACT and Tasmania for their expeditious implementation of NECF and urges the remaining states in the NEM to implement the framework on or before 1 July 2012 in order to provide consumers in these states with the same protections as those in the ACT and Tasmania, and in a way that does not diminish existing consumer protections (for example, in Victoria).

---

29 CHOICE, *Submission 73*, p. 16.

30 Mr Gerard Brody, Director, Policy and Campaigns, CALC, *Proof Committee Hansard*, 27 September 2012, p. 41

31 See Mr Gerard Brody, Director, Policy and Campaigns, CALC, *Proof Committee Hansard*, 27 September 2012, p. 41; and Ms Caitlin Whiteman, Research and Policy Advocate, CUAC, *Proof Committee Hansard*, 27 September 2012, p. 33.

32 Ms Caitlin Whiteman, Research and Policy Advocate, CUAC, *Proof Committee Hansard*, 27 September 2012, p. 33.

Recommendation 14

6.35 **The committee recommends that NECF is implemented in all states and territories in the NEM in a way that does not diminish from existing consumer protections and to take effect on or before 1 July 2013.**

National consumer advocacy body

6.36 A number of submitters argued for creation of a national consumer advocacy body to represent the views of consumers.[33] For example, CHOICE submitted that:

> …there is a clear need for greater resources to support consumer advocacy on behalf of residential energy consumers, including the establishment of a national energy consumer advocacy body.
>
> …
>
> Advocates for residential energy consumers often contest issues alongside well-resourced representatives from the electricity generation, network and retail sectors, all of which also have national peak bodies, as do large-scale energy consumers. It is worth noting that advocacy on behalf of energy sector businesses is effectively funded by consumers, given all costs for these businesses, including lobbying, end up being paid for through consumers' energy bills. [34]

6.37 The CUAC likewise argued that:

> …stronger and more effective advocacy for energy consumers is required at a national level. While state based advocacy remains important in order to reflect the varying needs of consumers across different parts of the country, the growing role of national institutions in the energy market requires stronger consumer representative agencies at that national level.[35]

6.38 As did ACOSS:

> An effective, well-resourced national energy consumer advocacy body can operate to ensure consumer interests are central to decision-making by governments, regulators and energy businesses. Working closely with existing advocacy and community agencies to leverage existing skills, knowledge and experience, a new body focused on national key priorities can contribute to more responsible, effective, sustainable and fair energy markets.[36]

6.39 PIAC suggested creation of an 'affordability taskforce' convened by the Commonwealth Minister for Energy and Resources. Ms Carolyn Hodge of PIAC explained:

---

33 For example see CHOICE, *Submission 73*, p. 14; and Mr Gerard Brody, Director, Policy and Campaigns, CALC, *Proof Committee Hansard*, 27 September 2012, p. 38.

34 CHOICE, *Submission 73*, p. 14.

35 CUAC, *Submission 2*, pp 4–5.

36 ACOSS, *Submission 67*, p. 13.

> …electricity drives people's lives, and continued access to this essential service is vital to protect people's basic dignity and fundamental rights. As such, PIAC strongly supports a formal process through which all stakeholders, including federal and state governments, industry, regulators, ombudsmen and consumer advocates can work together to work develop an electricity affordability strategy. An affordability task force convened by the chair of the Standing Council on Energy and Resources, Minister Martin Ferguson, would be a sizeable win for Australian electricity consumers and a forum to identify practical and achievable actions to facilitate access to electricity that is as equitable as it is efficient.[37]

6.40 The CALC discussed the expertise required to navigate the complex electricity market and argued that establishment of a national body could offer this expert support to consumers. Mr Gerard Brody told the committee:

> There is also an opportunity to build expertise. An example would be in relation to distribution price determinations, which are undertaken once every five years in each state. When it comes around to each state that consumer body—say it was our body—has to look back five years ago and remember what we did then and try to engage with the various distribution businesses. If there were a national body able to assist that, it would be consistently participating in those reviews because they are going on around Australia all the time. We think there would be real benefits from having that repeat player to build expertise and more effectively participate in those determination reviews.[38]

Committee comment

6.41 As remarked elsewhere in this report, Australia's electricity market is technical and complex. This makes it difficult for consumers to both understand and effectively participate in its regulation.

6.42 The committee supports the call from consumer advocacy and social welfare groups for a national consumer advocacy body. Such a body could have the dual responsibilities of representing the views and interests of consumers in NEM regulatory processes as well as providing support and information to consumers about the electricity market, consumption and pricing.

Recommendation 15

6.43 **The committee recommends that SCER consider establishing a national consumer advocacy body to represent and support consumers in the NEM.**

---

37 Ms Carolyn Hodge, Senior Policy Officer, Energy and Water Consumers' Advocacy Program, PIAC, *Proof Committee Hansard*, 25 September 2012, p. 56.

38 Mr Gerard Brody, Director, Policy and Campaigns, CALC, *Proof Committee Hansard*, 27 September 2012, p. 38.

Specific protections for low income and vulnerable consumers

Opt-in cost reflective pricing

6.44 As discussed in Chapter 5, cost reflective pricing should be introduced in the NEM according to the recommendations of the *Power of Choice* report; that is, in a three-tiered model where small to medium consumers are deemed to remain on a flat network tariff unless they choose to shift to cost reflective pricing and install a smart meter. Transitioning to cost reflective pricing in this way should help to ensure that low income and vulnerable consumers are not adversely affected in circumstances where they are unable to shift their electricity consumption away from peak periods.

A social tariff

6.45 In addition to the three-tiered model described above and in Chapter 5, the Alternative Technology Association (ATA)—whilst supportive of cost reflective pricing—proposed a 'regulated social tariff whereby vulnerable consumers can be protected whilst other consumers can voluntarily choose cost reflective pricing that provides a benefit both to them and to network efficiency'.[39] The ATA explained:

> …we strongly support the introduction of time-of-use pricing.
>
> Our concern though is that if a whole lot of consumers move to time-of-use pricing because it benefits them, then that will have a flow-on unintended consequence of potentially driving up the cost of those flat tariffs that other consumers are seeking refuge in—in other words, because effectively the peakiness, if you like, of a load profile of customers who are on flat tariffs will increase as a result of consumers who would benefit from time of use moving away from there. So we see it as a further step than just having a voluntary mechanism. We think that there should be a protection in the form of a flat, simple social tariff for low-income consumers. This is something that has been discussed and there are varying views on it. Our view is that it would be effective and possible to implement a social tariff at a network tariff level, allowing a consistent and marketable and still competitive social tariff that can be used. This would be possibly seen by the networks and energy businesses as being awkward, however, we would note that it is not without precedent. If you look at feed-in tariffs that have been implemented across states, they have actually been based on network tariffs as well that have been for specific consumers. In the same way that you could have a network tariff for a consumer with solar panels, we see no reason that you cannot have a specific network tariff for a consumer who is vulnerable—one on a low income, one who holds a healthcare card or whatever the case may be.

Energy efficient appliances and housing

6.46 As discussed in Chapter 5, energy efficiency and energy saving measures were raised during the course of the inquiry as ways to ease electricity costs for

39 Mr Damien Moyse, Energy Projects and Policy Manager, Alternative Technology Association (ATA), *Proof Committee Hansard*, 3 October 2012, p. 2.

consumers.[40] Australian governments are pursuing a range of energy saving initiatives and offer various energy efficiency programs and grants to assist consumers to improve their energy efficiency.

6.47 Despite the gains and savings to be made by adopting energy efficiency strategies, barriers exist to these measures being widely adopted. The Council of the Ageing (COTA) stated that the elderly and those on low incomes are most affected by electricity price increases and are also those least likely to be able to afford to adopt energy efficiency measures.[41]

6.48 According to COTA, these consumers are unable to improve their efficiency because they use old, inefficient appliances and have no access to funds to replace them, have poor thermal efficiency in their homes, have medical conditions that require additional heating, cooling and electricity, and use mobility aids which require recharging.[42]

6.49 The Brotherhood of St Laurence recommended that energy saving measures should be made available to ensure low-income households are able to receive benefits to assist in implementing energy efficiency measures.[43]

6.50 It was also suggested by the CPSA that pensioners and those on low incomes are under-using electricity, refraining from using heaters and minimising television use to reduce utilities costs.[44]

6.51 ACOSS highlighted the plight of tenants in Australia: approximately one in four Australian households reside in private rental or public housing and do not have rights or incentives to make capital improvements. ACOSS explained:

> Landlords do not benefit from the bill savings or thermal comfort improvement energy efficiency improvements, and this split incentive has resulted in some of the most vulnerable households living in the most inefficient properties in Australia.[45]

6.52 The CALC was also cognisant of the constraints on low income and vulnerable consumers to improve the energy efficiency of their homes and appliances:

> We would certainly agree that poor quality housing stock and cheap appliances absolutely correlate with higher energy use, and of course that sort of housing stock and those sorts of products tend to be purchased by people who are financially vulnerable. So there is a very, very clear correlation. Indeed, they have the least capacity to avoid high electricity bills by making investments in those sorts of appliances. There is some

---

40 For example see ACT Greens, *Submission 1*, pp 1–2; ClimateWorks Australia, *Submission 20*, p. 1; and PIAC, *Submission 60*, p. 5;

41 Council of the Ageing (COTA), *Submission57*, p. 5.

42 COTA, *Submission 57*, p. 5.

43 Brotherhood of St Laurence, *Submission 86*, p. 8.

44 CPSA, *Submission 18*, p. 3.

45 ACOSS, *Submission 67*, p. 11.

> attractiveness to just not allowing products on the market that create those problems, but I guess the twin problem that goes with that, as we would know, is that the five-star energy rated appliances cost a lot more money. If such options were being considered, there would also need to be responses that enabled those appliances to be affordable.[46]

6.53 PIAC indicated that current low-cost energy efficiency measures have already been adopted and a more thorough approach is needed:

> …there is limited remaining scope to help low-income consumers through measures such as energy efficiency light bulbs, door snakes and water-saving showerheads. These products have been aggressively distributed, including by energy providers, and have therefore achieved significant market penetration, if not saturation.[47]

6.54 PIAC accordingly recommended that 'alternative, more impactful approaches are now required in order to help low-income consumers share some of the benefits of reduced energy consumption'.[48]

6.55 With regards to the ability of tenants to modify their electricity consumption by improving their energy efficiency, the committee was pleased to note during its site visit to the Smart Grid, Smart City Centre, research currently being conducted by the National Climate Change Adaptation Research Facility (NCCARF) examining how tenants are adapting to climate change by making changes to their dwellings and how they live in their homes.[49]

Federal government assistance

6.56 As part of the federal government's climate change plan, it introduced the Clean Energy Household Assistance Program which delivers payments to 9 in 10 households alongside the introduction of the carbon price. The Minister for Climate Change and Energy Efficiency, the Hon Greg Combet MP explained:

> On average, households will see cost increases of $9.90 a week, while the average assistance will be $10.10 a week.
>
> All the household assistance families and pensioners receive is no strings attached—so if people can make some small changes, like changing to

---

46 Ms Catriona Lowe, Co-Chief Executive Officer, CALC, *Proof Committee Hansard*, 27 September 2012, p. 37.

47 PIAC, *Submission 60*, p. 5.

48 PIAC, *Submission 60*, p. 5.

49 University of Newcastle, *Invitation: Calling all renters in inner Newcastle and Toronto*, available at the Smart Grid, Smart City Centre (received 24 October 2012) and National Climate Change Adaptation Research Facility (NCCARF), Rental housing, climate change and adaptive capacity: a case study of Newcastle, NSW, available: http://www.nccarf.edu.au/content/rental-housing-climate-change-and-adaptive-capacity-case-study-newcastle-nsw (accessed 25 October 2012).

energy efficient light bulbs or switching the television off at the power point, they will keep all of their extra payments and tax cuts.[50]

6.57 In addition, the government has introduced the Home Energy Saver Scheme (HESS) to provide low income earners with direct assistance to improve household energy efficiency, including a one-on-one home visit service. The scheme was developed in consultation with non-government and not-for-profit organisations, industry and unions.[51] Funding for HESS is $29.9 million over four years (until 2014–15). The scheme will also provide access to financial management information and education, advice, advocacy and support. Where appropriate, the scheme also includes referrals to the No Interest Loans Scheme (NILS), where appropriate to assist consumers to access capital to make longer term energy efficiency improvements.[52] The scheme will be delivered by 19 not-for-profit organisations and 'seeks to build on and complement other financial management and energy initiatives'.[53]

State government assistance

6.58 State and territory governments also offer assistance programs and packages to assist consumers with their electricity costs. Some of these assistance measures are summarised below.

New South Wales

6.59 The New South Wales (NSW) government offers various assistance measures with respect to energy bills, for example the:

- Family Energy Rebate of $215 per year to assist concession cardholders to manage their energy costs;
- Medical Energy Rebate of $215 per year for eligible concession cardholders with a medically diagnosed inability to self-regulate body temperature;
- Life Support Rebate to assist with the cost of electricity associated with the use of certain life support equipment;

---

50 The Hon Greg Combet AM, MP, Minister for Climate Change and Energy Efficiency, 'Helping low-income earners get ready for a clean energy future', Joint media release, 16 October 2011.

51 The Hon Mark Dreyfus QC MP, Parliamentary Secretary for Climate Change and Energy Efficiency, '$45 million to boost energy efficiency in Local Government and low-income households', Media release, 6 June 2012, available: http://www.climatechange.gov.au/en/minister/mark-dreyfus/2012/media-releases/June/MR-12-22.aspx (accessed 3 September 2012).

52 The government has reallocated an additional $20.7 million to the No Interest Loans Scheme from the former Solar Hot Water Rebate Scheme. See the Hon. Ms Jenny Macklin MP, Minister for Families, Community Services and Indigenous Affairs and Minister for Disability Reform, 'New scheme helps low-income Australians save on energy', Joint media release with Laura Smyth MP, 6 June 2012.

53 Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA), *Financial Management Program*, available: http://www.fahcsia.gov.au/our-responsibilities/communities-and-vulnerable-people/programs-services/financial-management-program, (accessed 4 September 2012).

- Home Power Savings Program to assist vulnerable households to reduce their electricity bills via home power assessments, a "power saving kit" and power savings action plan;
- Free financial counselling services;
- Save Power website for energy saving tips and information on rebates to assist households purchase energy savings appliances; and
- Energy Accounts Payment Assistance (EAPA) vouchers to help financially disadvantaged consumers to stay connected to essential energy services during a financial crisis.[54]

Queensland

6.60 The Queensland government offers the following electricity rebates and concessions such as the:

- Electricity rebate for pensioners and seniors ($230 a year);
- Medical Cooling and Heating Electricity Concession Scheme ($230 a year);
- Home Energy Emergency Assistance Scheme – assistance for customers experiencing a crisis or unforeseen emergency (up to $720 a year);
- Electricity Life Support Concession Scheme ($314–$469 per year); and
- Consumer Advocacy Program delivered by the Queensland Council of Social Services (QCOSS)—a $450 000 program designed to advocate the needs of low-income households and disadvantaged energy customers.[55]

South Australia

6.61 The South Australian government offers a number of measures to assist with energy bills, such as:

- a concession of up to $165 per year on household energy bills, to assist with electricity and gas payments, for certain concession cardholders;
- the Medical Heating and Cooling Concession of $165 per year for low income earners who have a clinically verified medical condition which requires frequent use of heating or cooling in the home to prevent the severe exacerbation of their condition;[56]

---

54 NSW government, *Supporting you: bills and payments*, available: http://www.nsw.gov.au/pages/supporting-you-bills-and-payments (accessed 18 October 2012).

55 Queensland government, *Rebates and concessions*, available: http://www.deedi.qld.gov.au/energy/rebates-and-concessions.htm, (accessed 12 September 2012); Queensland government, *Energy rebates and concessions* fact sheet, http://www.deedi.qld.gov.au/documents/energy/rebates-and-concessions-factsheet.pdf, (accessed 12 September 2012).

56 Department for Communities and Social Inclusion (SA), *Concessions*, available: http://www.dcsi.sa.gov.au/pub/Home/Financialsupportandgrants/Concessions/tabid/209/Default.aspx (accessed 19 October 2012).

- a website with advice and information on energy saving measures;[57] and
- the Residential Energy Efficiency Scheme which provides incentives for households to achieve greenhouse gas reductions and potentially lower energy bills through reduced energy consumption, and includes free home energy audits for low income households.[58]

Tasmania

6.62 Assistance provided by the Tasmanian government to help with electricity bills includes:

- an electricity rebate of up to $450.78 for pensioners and health care card holders;
- a heating allowance of $56 per year to eligible pensioners to assist with heating costs; and
- a life support machine rebate which provides an electricity discount based on a daily rate to people who use an approved life support system, or live with someone who uses one.[59]

Victoria

6.63 The Victorian government offers a range of energy concessions including the:

- Annual Electricity Concession which provides concession cardholders with a discount off household electricity bills year round;
- Service to Property Charge Concession which provides a reduction on the electricity supply charge for concession households with low electricity consumption;
- Medical Cooling Concession which provides a discount of 17.5 per cent off electricity costs over a six month period from 1 November to 30 April for concession cardholders with a specified medical condition (for example multiple sclerosis or Parkinson's disease);
- Off-peak Concession which provides a 13 per cent discount on the off-peak tariff on electricity bills for eligible concession cardholders and is not available for consumers on time variable tariffs;

---

57 Government of South Australia, *Energy Efficiency*, available: http://www.sa.gov.au/subject/Water%2C+energy+and+environment/Energy/Energy+efficiency (accessed 19 October 2002).

58 Essential Services Commission of South Australia, *Residential Energy Efficiency Scheme*, available: http://www.escosa.sa.gov.au/residential-energy-efficiency-scheme-rees.aspx (accessed 19 October 2012).

59 Department of Premier and Cabinet (Tasmanian), *Discounts and concessions*, available: http://www.concessions.tas.gov.au/concessions/electricity_and_heating (accessed 19 October 2012).

- Life Support Concession which provides a quarterly discount on electricity bills where a concession cardholder or their household uses certain life support machines; and
- Electricity Transfer Fee Waiver which waives in full the fee normally payable to an electricity retailer when there is a change of occupancy at a property.[60]

60 Department of Human Services (Victoria), *Energy Concessions*, available: http://www.dhs.vic.gov.au/for-individuals/financial-support/concessions/energy (accessed 18 October 2012).

Unauthorised disclosure of the Chair's draft

Introduction

7.1 On 31 October 2012, the committee became aware of a possible unauthorised disclosure of the Chair's draft because of an article published by Lenore Taylor in *The Sydney Morning Herald*, 'Switch off and get paid', referring to the contents of the draft report.

7.2 The committee, in accordance with *Procedural Orders of Continuing Effect No 3 — Unauthorised disclosure of committee proceedings, documents or evidence*, has sought to discover the source of the disclosure.

Background

7.3 On the evening of 29 October 2012, the Chair's draft was provided to certain senators via email by the Committee Secretary.

7.4 On 31 October 2012, an article and video by Lenore Taylor titled 'Switch off and get paid' were published on the website of *The Sydney Morning Herald*.[1] The article referred to the contents of the Chair's draft, in particular 'government-backed recommendations from a special inquiry to be tabled in the Senate tomorrow'.[2] The article went on to summarise some of the recommendations in the Chair's draft.

7.5 In light of Ms Taylor's article, the committee considered that an unauthorised disclosure had occurred and resolved to investigate the source of this disclosure.

Investigation of unauthorised disclosure of a committee document

7.6 The committee wrote to the persons whom the committee understood to have been provided with the Chair's draft prior to its scheduled tabling in the Senate and subsequent publication on 1 November 2012 asking if they could explain the disclosure. Those persons were:

- committee members and their staff; and
- the Committee Secretary and staff of the secretariat.

7.7 The committee also wrote to the Hon Martin Ferguson AM MP, Minister for Resources and Energy, and the Hon Greg Combet AM MP, Minister for Climate Change and Energy Efficiency asking if they or their staff could explain the unauthorised disclosure.

7.8 The committee received responses from the following:

---

1 Lenore Taylor, 'Switch off and get paid', *The Sydney Morning Herald*, 31 October 2012.

2 Lenore Taylor, 'Switch off and get paid', *The Sydney Morning Herald*, 31 October 2012.

- Senators Thistlethwaite, Cormann, Edwards, Gallacher, McEwen, Milne, Thorp and Williams;
- Mr Matthew Marozzi and Ms Suzie Trifunovic from the office of Senator Gallacher;
- the Secretary, Senate Select Committee on Electricity Prices;
- the Hon Martin Ferguson AM MP, Minister for Resources and Energy, and the Hon Greg Combet AM MP, the Minister for Climate Change and Energy Efficiency.

7.9 The committee notes that, in responding, Senator Milne called for the committee to also investigate a possible unauthorised disclosure related to an Australian Broadcasting Corporation (ABC) radio report by Fran Kelly on 1 November 2012. As the committee did not wish to delay tabling of its important report on electricity prices, the committee resolved not to investigate this possible unauthorised disclosure.

7.10 On the basis of the responses received, the committee has not been able to discover the source of the unauthorised disclosure.

Conclusion

7.11 The committee has considered the responses received and noted the terms of *Procedural Orders of Continuing Effect No 4 — Unauthorised disclosure of committee proceedings*. The committee concludes that the disclosure of the Chair's draft was a serious breach of the committee's confidence. Therefore, the committee has determined to raise the unauthorised disclosure of the Chair's draft as a matter of privilege under standing order 81.

Senator Matthew Thistlethwaite
Chair

Additional comments from the Coalition

The sudden realisation by the Gillard Labor government that Australian families are hurting from rising electricity prices has only come after the government has made the situation worse by adding a carbon tax.

The Consumer Price Index (CPI) figures for the first quarter in which the carbon tax applied clearly confirmed the impact of the carbon tax on the cost of electricity and the cost of living.

Electricity prices have seen a 15.3 per cent rise with household gas and miscellaneous fuels seeing a 14.2 per cent rise. These are the largest quarterly increases since records have been kept.[1]

The establishment of this committee is part of a co-ordinated attempt to deflect attention away from the government and the breaking of its emphatic pre-election promise not to introduce a carbon tax.

The government is seeking to blame everyone except itself for the added cost of living pressures on households and the increases in the cost of doing business in Australia.

Electricity prices have been a growing concern for Australian households and business.

One of the key arguments the government has pursued recently was to blame the increase in power prices on network costs—a transparent attempt by the Gillard government and its alliance partner, the Greens, to shift blame to the states.

Coalition senators acknowledge that network costs do contribute to the costs and have been rising. However this is not a new development.

Two years ago, Prime Minister Gillard was encouraging further investment in the networks and encouraging the power companies to increase prices:

> The current price rises in a number of states have been principally caused by a sustained period of under-investment.[2]

And Minister for Resources and Energy Martin Ferguson has clearly acknowledged that the states should not be blamed:

> The states do not control the regulatory authorities that set prices and any suggestion that they do has no basis in fact and is a cheap shot.
>
> The states might be getting good dividends but they do not determine the price setting rules.[3]

---

1 Australian Bureau of Statistics (ABS) Data Series 6401.0: Consumer Price Index, Australia, September 2012.

2 The Hon. Julia Gillard, Prime Minister, Speech to the Australian Industry Group, 26 October 2010, available at: http://www.pm.gov.au/press-office/speech-australian-industry-group (accessed 31 October 2012).

Importantly, the Prime Minister and others across government only started to try and blame the states for increases in electricity prices after relatively recent changes of government in Queensland and New South Wales.

This is all about diverting attention away from the single policy change that would have the most immediate impact in terms of lowering the cost of electricity—the repeal of the carbon tax.

The impact of the carbon tax on electricity prices

One of the primary goals of the government's carbon tax is to increase electricity prices and thereby reduce the quantity of electricity demanded. Indeed, the government's own carbon tax modelling states that:

> Electricity demand is an important source of abatement in the early years, comprising over 40 per cent of the cumulative abatement to 2020.[4]

It is no surprise then that the empirical evidence demonstrates that the imposition of the carbon tax has led to a record increase in household electricity prices. After all, that is precisely what the carbon tax was intended to achieve. Of course, it is highly questionable whether this increase in prices actually reduces the quantity of electricity demanded. We know that the government expects domestic emissions to continue to rise and, given increased business costs and lower international competitiveness as a result of the carbon tax is likely to help overseas competitors take market share away from Australian business, any reduction in emissions in Australia as a result will be offset by an increase in emissions in other parts of the world—arguably at times by more.

By the same token, electricity price experts agree that removing the carbon tax—in other words, implementing the Coalition's policy—would reduce electricity prices.[5]

Data from the Australian Bureau of Statistics CPI for the September 2012 quarter (which covers the months of July to September of 2012) shows that the 15.35 per cent increase in electricity prices in this quarter was the largest single quarterly increase in 32 years. That is, the introduction of the carbon tax led to the highest increase in electricity prices in the entire history of the series.

Statistical analysis of the historical data, which is summarised in Figure 1 below, puts some additional context around the data and shows how large an outlier the September

---

3 Sydney Morning Herald, *Ferguson swipes Gillard over electricity prices*, 28 September 2012, available at: http://www.smh.com.au/opinion/political-news/ferguson-swipes-gillard-over-electricity-prices-20120927-26o99.html (accessed 31 October 2012).

4 The Treasury, *Strong growth, low pollution: Modelling a carbon price*, 10 July 2011, p. 10, available at: http://archive.treasury.gov.au/carbonpricemodelling/content/report/downloads/Modelling_Report_Consolidated_update.pdf (accessed 31 October 2012).

5 For example see Professor Paul Kerin, Chief Executive, South Australian Essential Services Commission, quoted in the Courier Mail, *Power prices to fall if carbon tax axed*, 4 October 2012, available at: http://www.couriermail.com.au/news/breaking-news/prices-to-fall-if-carbon-tax-axed-boss/story-e6freono-1226488263578 (accessed 31 October 2012).

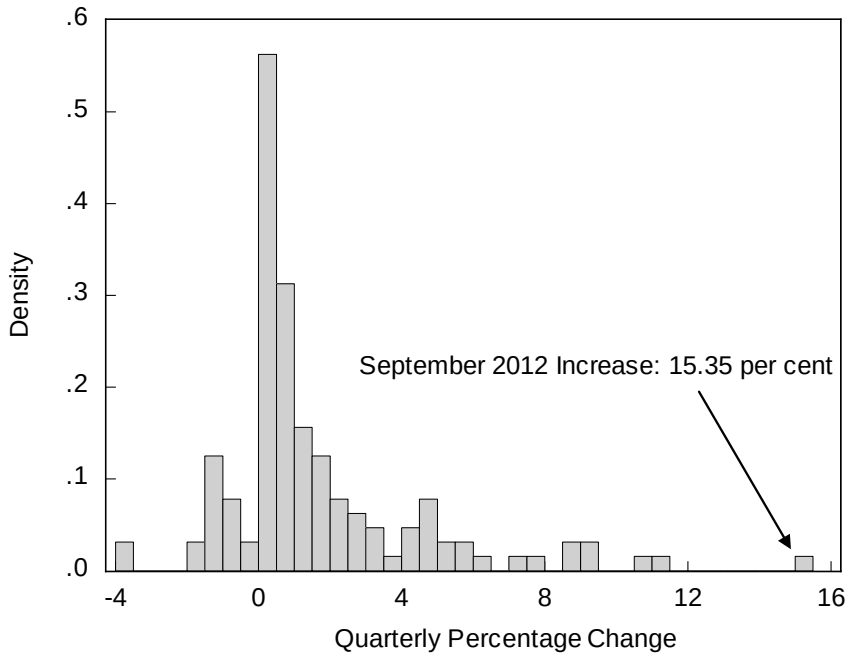
increase actually was. The data shows that over the last 32 years, the historical average of quarterly increases in household electricity prices in Australia has been 1.6 per cent. In other words, the introduction of the carbon tax led an increase in electricity prices of nearly 10 times the historical average.

Figure 1: Data summary of quarterly historical increases in household electricity prices, 1980 to 2012[6]

Statistical Measure	Value
Mean	1.61 per cent
Median	0.67 per cent
Maximum	15.35 per cent
Minimum	-3.85 per cent
Std. Dev.	2.95
No. Observations	128

Figure 2 below illustrates graphically the record increase in electricity prices following the introduction of the carbon tax.

Figure 2: Histogram of historical electricity price increases[7]



6 ABS, *Catalogue. No. 6401.0: Consumer Price Index*, Australia, September 2012.

7 ABS, Catalogue No. 6401.0: Consumer Price Index, Australia, Sep 2012, Coalition analysis.

The government has chosen to ignore this evidence, and has instead claimed that the carbon tax would lead to a "modest" increase in household electricity prices.[8] It is difficult to understand how a record increase of nearly ten times the historical average—the largest increase in prices in at least 32 years—constitutes a "modest" increase.

The government's carbon tax modelling also claimed that:

> The carbon price leads to an average increase in household electricity prices of 10 per cent over the first five years of the scheme.[9]

The Prime Minister even went so far as to say that:

> When the government priced carbon, we forecast an electricity price impact on consumers of around ten per cent—a forecast which has now become reality.[10]

But forecasts from computer models are not reality—they are forecasts. The actual data and the government's own Budget papers suggests that the10 per cent forecast over five years is very far from "reality".

First, the evidence reviewed above suggests that contrary to the Prime Minister's claims, the increase in household electricity prices since the introduction of the carbon tax has already easily exceeded 10 per cent. In addition to the Australian Bureau of Statistics (ABS) data outlined above, the TD Securities /Melbourne Institute Inflation Gauge for the month of July stated that '[d]ue to the introduction of the carbon tax from 1 July, the price of electricity rose by 14.9 per cent'.[11]

Second, the government's goal is not for the carbon tax to remain at its current level. There are still four years and nine months' worth of carbon tax increases until we reach the end of the government's "first five years of the scheme".

The carbon tax increases that are expected over the next few years have been deliberately designed by the government to lead to further increases in electricity prices, in order to reduce the quantity of electricity that is demanded which, as discussed above, is the government's goal.

Specifically, the government's own modelling (which is incorporated into the Budget forecasts and projections of carbon tax revenue and upon which the government is

---

8 The Treasury, *Strong growth, low pollution: Modelling a carbon price*, 10 July 2011, p. 10.

9 The Treasury, *Strong growth, low pollution: Modelling a carbon price*, 10 July 2011, p. 10.

10 The Hon. Julia Gillard, Prime Minster, Speech to the Energy Policy Institute of Australia, 7 August 2012, http://www.pm.gov.au/press-office/electricity-prices-facts-speech-energy-policy-institute-australia (accessed 31 October 2012).

11 TD Securities and Melbourne Institute, Press release, 6 August 2012, available at: http://melbourneinstitute.com/downloads/media_release/2012/TDSec_MI/TD-MI_PR_Jul12.pdf (accessed 31 October 2012).

relying to achieve a promised surplus), suggests that the carbon tax will increase by at least a further 35 per cent over its current level over this period.[12]

In other words, even though Australians have been hit with a record increase in electricity prices, the government is expecting (indeed, it is relying upon) sizeable increases in the carbon tax over the next few years, with further associated increases in electricity prices.

Disturbingly, under the government's own modelling assumptions, by the end of the first decade of the scheme, the carbon tax will have more than doubled in nominal terms from today's level.

It cannot be denied that the carbon tax is the largest, most easily addressed component of electricity price increases, as admitted by the Department of Resources, Energy and Tourism in recent Senate Estimates hearings:

> Senator CORMANN: What are the five biggest drivers of increases in electricity prices?
>
> Mr Morling: It is probably best to look at it on a jurisdiction-by-jurisdiction basis. If you look at New South Wales, for example, the average price increased by around 18 per cent in 2011-12. If you break that down, about 8½ per cent was network costs, about nine per cent carbon costs, 1.2 per cent retail costs, 0.8 per cent wholesale energy costs and 0.3 per cent other green schemes costs.
>
> …
>
> Senator CORMANN: So the biggest driver of the ones you have just mentioned for increasing the cost of electricity is the carbon tax?
>
> Mr Morling: The point has been made elsewhere that that was expected and it is slightly below the expected impact of the carbon price.[13]

The repeal of the carbon tax should be the first step in putting downward pressure on electricity prices.

Recommendation 1

That the government act immediately to reduce the upward pressure on electricity prices on consumers and business by repealing the carbon tax.

The state of the electricity market

The committee's report contains much useful information about the state of electricity markets in Australia. We support many of its recommendations to improve the regulation of electricity prices and to investigate the potential to invest in more

12 This is made up of an increase to $29 per tonne of CO^2 emissions by 2015–16, plus an additional 7.5 per cent increase in 2016–17 which is identical to the government's own modelling assumptions.

13 Mr Brendan Morling, Head of Energy Division, Department of Resources, Energy and Tourism, Senate Economics Legislation Committee, *Proof Committee Hansard*, 18 October 2012, p. 14.

demand management tools which can help to moderate the peaks in electricity demand. For instance, we agree with the report's findings that there has been an historic increase in electricity prices of 90 per cent since 2007.

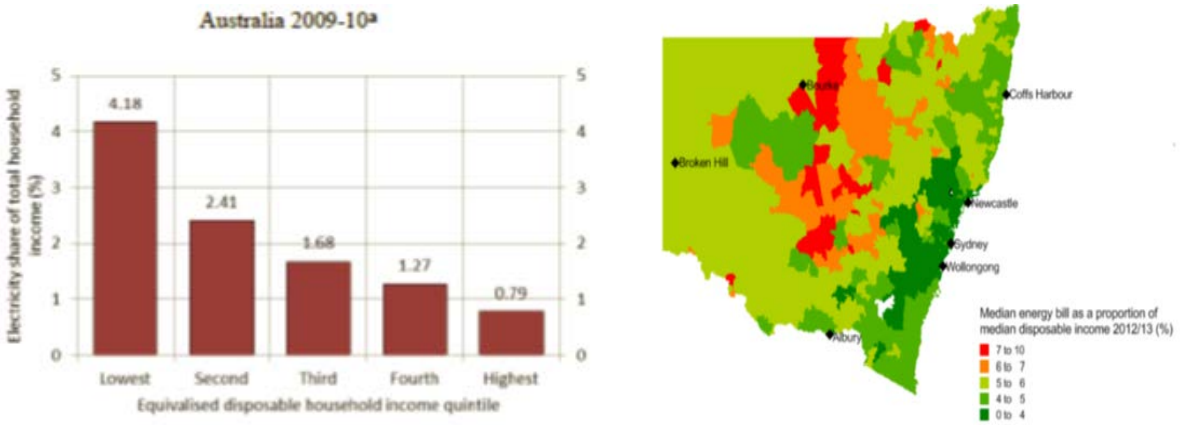
Nonetheless, the Committee's report:

- fails to stress that the objective of electricity regulation should be to deliver the most affordable electricity to the consumer with a level of reliability commensurate with the consumer's willingness to pay;
- places too great an emphasis on the increase in network and distribution costs as causes for the recent increases and hence puts too much weight on changes to network regulation as a potential solution for high electricity prices; and
- downplays the impact of the carbon tax and other green schemes in increasing electricity prices.

Australians are hurting from the increase in electricity prices since 2007

Since 2007 electricity prices for Australian households have increased by 90 per cent in nominal terms. The Australian government is adding to this burden with a carbon tax that will increase the costs of electricity every year.

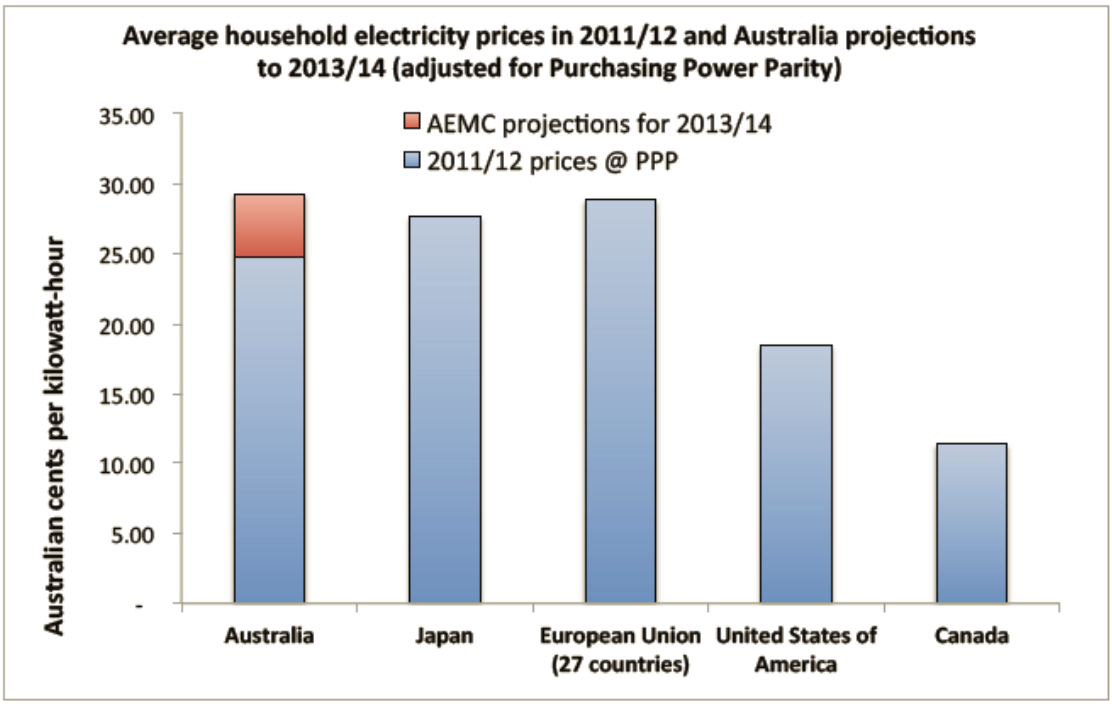
These historic increases in costs have placed a significant additional burden on Australian households, particularly lower income households and Australians living in regional areas.



Higher electricity prices also make it harder for Australian businesses to compete. The rapid increases have meant that Australia's electricity prices are some of the highest in the world and much greater than those in the United States and Canada (see below). These effects are greater in industries that are energy intensive, such as heavy manufacturing, which is already struggling from a high Australian dollar. Higher electricity prices have therefore exacerbated the impact of the "two-speed" economy by making it harder for Australian industry to compete.

Figure 3: Average household electricity prices in Australia in 2011 compared to common monetary areas and other major economies at Purchasing Power Parity[14]

Figure 5. Average household electricity prices in Australia in 2011 compared to common monetary areas and other major economies at Purchasing Power Parity[vi]



Government policy has been too slow to respond

Prices have been increasing consistently over the past five years yet the government has failed to take action to respond to these rapid increases in costs. In 2008, the Australian government transferred the power to regulate the prices of electricity distribution and transmission companies to the Australian Energy Regulator (AER).

The government has belatedly established a number of reviews to try and get a handle on the runaway price increases. These reviews, however, are unlikely to take any action to reduce prices from their current levels, even if they may seek to moderate the size of future price increases.

We note that the committee has not provided any estimates of how much electricity prices could fall by if its recommendations are implemented. That is, because the question of whether the investment in network infrastructure is a complex one, something that is discussed further below. While strengthening the AER's power to reject proposals to roll in investment into the regulatory asset base, may help moderate future potential price increases, these proposals are unlikely to reduce the current level of prices.

---

14 Carbon Energy and Markets 2012, Electricity Prices in Australia: An international comparison, A report to the Energy Users Association of Australia, March, p. 13.

Note: The date here differs somewhat from that in the committee's report because it uses the most up to date information on electricity prices.

The only concrete proposal to reduce electricity prices from their current levels is to remove the carbon tax.

The consumer should be at the heart of Australia's energy policy

We believe that Australia's energy policy should be designed with the interests of end consumers at its heart. The pricing of, and investment in, our electricity sector should balance the need for consumers to have access to reliable electricity against the need to deliver that electricity at the cheapest power possible. Achieving this goal is doubly important: We should strive the deliver the cheapest possible power to take pressure off the cost of living for those doing it tough, and delivering cheaper power helps increase the productivity of all sectors of the economy given that it is such an important input to business costs.

For this reason, we are concerned about Recommendation 8 to require the "AEMC consider how broader environmental considerations could better align with the operation and regulation of the NEM".

The Australian Energy Market Commission (AEMC) should focus on delivering its core objective to: … As the AEMC told the Committee:

> We of course would apply and pursue whatever objective Parliament see fit to give to us. This issue is not a new one. The way I think about it is with a football team analogy: everyone on the team has the same objective; it is just that we have different positions and different roles. Apologies to those who do not come from rugby states but, if the bonehead thinks that the five-eighth is not doing a good job, the worst thing he can do is try and do the five-eighth's job for him. Our role in relation to rules that relate to economic efficiency is part of one role in what people expect out of this sector. There are other manifestations of government that obviously deal with environmental issues in a systemic sense, such as climate change and, in a local sense, land use planning and emissions—NOX and SOX and salts and things from the plants.[15]

Moreover, adding additional objectives to the AEMC is inconsistent with the recent recommendations of the Productivity Commission, which found that:

> The overarching objective of the regulatory regime is the long-term interests of electricity consumers. This objective has lost its primacy as the main consideration for regulatory and policy decisions. Its pre-eminence should be restored by giving consumers much more power in the regulatory process.[16]

Coincidentally, the committee gave its support to this finding of the Productivity Commission even though it would appear to be inconsistent with its Recommendation 8.

---

15 Mr John Pierce, Chairman, Australian Energy Market Commission (AEMC), *Proof Committee Hansard*, 25 September 2012, p. 16.

16 Productivity Commission, Draft Report, *Electricity Networks Regulatory Frameworks: Volume 1*, October 2012, p. 2.

We believe that the government should seek to restore the primacy of the consumer by implementing the draft recommendations of the Productivity Commission. In our view, the committee's report has played only "lip service" to this concept without making concrete recommendations for its implementation.

Network costs are important but they are not the answer

The committee's report puts great emphasis on the role that increases in network investment have played in increasing electricity prices. While these have played a role in recent price increases there are other significant factors at play. For instance, the Productivity Commission has compared the components of an average bill in New South Wales in 2012–13 against an average bill in 2007–08.

There is widespread acceptance that there was a need for further investment in electricity networks, something that the committee has also recognised. While there are questions over whether these price increases have been excessive, the question is whether these benefits outweigh consumers' willingness to pay for greater reliability and fewer outages. The committee has not provided a clear answer to that question.

It is incumbent on those claiming that network costs have been too high to identify what reliability standards should be reduced. While the committee has called for a number of reviews of the electricity sector it has not identified one specific example of a reliability standard that it would reduce to help bring down electricity prices.

There is some evidence that consumers place a high value on reliability standards. For instance, the Energy Networks Association said that:

> The AEMC has tested customer attitudes as part of its review into reliability standards. The results confirm that most customers place a high value on reliability and are not attracted to trading off reliability for modest savings in costs.
>
> AEMC analysis also reveals the limited savings which can be achieved by relaxing standards. According to the AEMC, lowering reliability standards in New South Wales would yield annual savings of only $3 to $18 per household once fully implemented (i.e. in 2028/29).[17]

Indeed, we note that there are divergent views within the government over whether investments in network infrastructure have in fact been excessive. In late September, the Minister for Energy, Martin Ferguson, rejected a plan by the Member for Lyne, Mr Rob Oakeshott, for a federal takeover of electricity price regulation. Minister Ferguson said:

> The states do not control the regulatory authorities that set prices and any suggestion that they do has no basis in fact and is a cheap shot.
>
> The states might be getting good dividends but they do not determine the price setting rules.

17 Energy Networks Association, *Submission 64*, p. 12.

It is a complex reform that won't be solved by cheap front-page headlines.[18]

In our view, the government's attempts to try and blame state governments for recent electricity price increases have been clumsy and are not helpful in trying to formulate better energy policy. In this regard, we note that the committee has identified "dividend extraction by state governments" as a factor in contributing to household electricity price increases with no evidence that this has been the case. Indeed, elsewhere in the report, the committee notes that dividends from electricity companies are actually falling in New South Wales.

Engaging in a blame game with the states is not the way to help reduce electricity prices, particularly given that it has been federal regulation, through the Australian Electricity Regulator, which has overseen many of these very price increases.

Lack of attention to Western Australia and the Northern Territory

The Coalition notes that the overwhelming majority of recommendations appear to apply directly to states that participate in the National Electricity Market (NEM) and not to Western Australia and the Northern Territory, which do not participate in the NEM. For those recommendations that do not specifically refer to NEM jurisdictions, it is unclear whether they apply to non-NEM jurisdictions as well and, if they do, how they would be implemented in those jurisdictions, given their separate and different regulatory arrangements.

As such, it is unclear from the report what the direct or indirect implications of the recommendations would be for the non-NEM jurisdictions.

Indeed, none of the evidence brought before the committee regarding the regulatory arrangements of non-NEM jurisdictions - including similarities and differences with the NEM and advantages and disadvantages of various arrangements - appear to have been considered in any great detail in the report.

The Coalition considers this is a major oversight.

Concluding remarks

Coalition senators are deeply concerned about the impact of electricity price rises on the cost of living.

Coalition members of the committee conditionally support the recommendations of the majority, with the following qualifier:

Any changes to the electricity sector should be based on the creation of a more open, transparent and competitive market, not through the imposition of more red-tape and regulation.

The dead hand of government is already imposing a significant new cost in the form of a carbon tax. Any future changes should undergo a rigorous cost-benefit analysis and only proceeded if clear benefits to consumers—particularly households, older Australians and those living in regional Australia—can be demonstrated.

18 Sydney Morning Herald, *Ferguson swipes Gillard over electricity prices*, 28 September 2012.

Coalition members of the committee make the following additional recommendation:

Recommendation 1

That the government act immediately to reduce the upward pressure on electricity prices on consumers and business by repealing the carbon tax.

Senator Mathias Cormann
Senator for Western Australia

Senator Sean Edwards
Senator for South Australia

Senator John Williams
Senator for New South Wales

Additional Comments from the Australian Greens

Executive summary

The National Electricity Market (NEM) has been successful in delivering a reliable, secure supply of electricity. However, Australians are emitting higher levels of greenhouse gas emissions and paying much more for their electricity services than is necessary because of flaws in the regulation and operation of the NEM.

Whilst there is a multiplicity of factors increasing electricity prices, the primary driver underpinning the spiralling price rises has been over-investment in networks; $42 billion has been allotted for investment in network assets from 2010-15 even as electricity demand is falling. The Productivity Commission notes the average NSW electricity bill increased from $1100 to $2230 (2007-08 to 2012-13), and the network component increased by 130 per cent from $505 to $1159 (greater than the entire bill of 2007-08).[1]

Some of the investment is unavoidable and necessary (e.g. catch-up on asset replacement),[2] but there is almost universal agreement (excluding the network businesses) the evidence demonstrates there has been substantial over-investment.

Professor Garnaut's testimony summarises effectively the evidence presented to the Select Committee:

> The big increases in Australian electricity prices began…with the establishment of a new price regulatory system…the real price of electricity rose more than over a comparable period in any other developed country, and more than…any earlier period of Australian history…In my view, there was no good public policy reason for this large increase in prices. It happened because of the way we chose to regulate prices.[3]

The key factors include:

(a) Excessive weighted average cost of capital and rate of return allowances in revenue determinations;

(b) Systemic incentives to increase capital expenditure and the size of the asset base, and the coupling of revenue with energy throughput for electricity networks and retailers;

(c) Regulatory process failures in the oversight of networks;

---

1 Productivity Commission Draft Report, *Electricity Network Regulatory Frameworks*, October 2012, p.4. Some submissions focussed on the Renewable Energy Target as a contributor to electricity bills. The draft report of the Climate Change Authority review into Renewable Energy Target found that the scheme will add an average of around $60 per annum (3-4% of the average electricity bill).

2 It is estimated that around one-third of network investment in NSW is asset replacement. The Department of Resources, Energy and Tourism, Fact Sheet, *Electricity Prices*, August 2012.

3 Professor Ross Garnaut, *Proof Committee Hansard*, 9 October 2012, p. 1.

(d) Disincentives and barriers to distributed generation, energy efficiency and demand management - leading to under-investment in cost-effective 'non-network' solutions as cheaper, cleaner alternatives;

(e) State-based planning and reliability standards;

(f) Distortions in electricity prices that do not reflect the cost of usage during peak periods.

Through the proceedings before the Select Committee, one of the themes has been that networks will maintain rates of returns on assets through higher fixed or unit prices (c/kWh) if energy demand falls. As Professor Garnaut also noted:

> We guarantee a rate of return…basically a riskless rate of return; there is not even exposure to the market, so that if demand falls price is increased to make sure that companies get their guaranteed rate of return. So, as demand has fallen, prices have had to be increased even more than they otherwise would have been. Of course, if price then goes up in response to demand falls, then demand falls even more. A completely unsustainable situation can emerge and I think that we are in that unsustainable situation now.[4]

It is an unacceptable (and unsustainable) situation for regulated monopoly businesses (public or private) to maintain returns on redundant infrastructure by increasing unit prices or fixed access changes as business and households improve their energy productivity or install distributed energy – potentially negating the financial benefits, and muting market and policy incentives for energy efficiency, demand management or distributed generation.

There is a misalignment between climate and energy policy and the regulation and operation of the NEM—and the NEM needs to be reformed to drive an effective, efficient transformation to a clean energy system.

Network investment and behaviour is the product of history, and the regulations and incentives of the NEM. The business models of the networks (and retailers) needs to be re-cast so they are no longer engines of energy growth but providers of energy services.

> Regulatory arrangements should focus on rewarding businesses for supplying services, focusing on providing returns for valued services and not for the number of assets built.[5]

Reforming the regulations and incentives of the NEM, complemented by reforms outside the NEM, could re-direct billions of dollars of investment from fuelling more energy consumption into building a 'smart grid', financing energy efficiency, demand management and renewable energy and lowering electricity bills.

The Decentralised Energy Roadmap developed by the University of Technology's Institute for Sustainable Futures found that approximately one-third of the capital invested in our networks could be avoided by managing peak demand through energy

---

4 Professor Ross Garnaut, *Proof Committee Hansard*, 9 October 2012, p. 2.

5 Australian Energy Market Operator, *Submission 39*, p. 3.

efficiency, demand management and distributed generation. In the current regulatory period alone, that is equivalent to $15 billion of network investment.[6]

As the Australian Industry Group, Energy Efficiency Council, Choice and Brotherhood of St Laurence noted:

> Governments must take action now to reform the electricity market. Some reforms can be implemented quickly and some will take time, but if we don't start the process now we will lock in billions of dollars in unnecessary infrastructure and higher bills for years to come.[7]

The Australian Energy Market Commission (AEMC) projection that network investment will increase by $240 billion by 2030 highlights the potential cost of business-as-usual.[8]

The Australian Greens support the recommendations in the Committee Report. However, further regulatory reform is required to reduce electricity bills and develop a regulatory system and electricity market geared to the challenge of low-carbon transformation.

The Australian Greens have **additional recommendations and comments** in the following areas:

Recommendation G1: That the National Electricity Objective be re-written to include an environmental objective and an Objective there are no regulatory barriers to demand management, energy efficiency and distributed generation.

Recommendation G2: That the Standing Council on Energy and Resources, in consultation with the AEMC and AEMO, develop reforms and rule-changes to establish AEMO as a single NEM-wide planning agency.

Recommendation G3: That the AER implement revenue caps for all Distribution networks to de-couple network revenue and energy consumption.

Recommendation G4: That the Department of Climate Change and Energy Efficiency and the Department of Resources, Energy and Tourism, in partnership with the Australian Energy Regulator, commission an independent study into the costs and benefits of a peak demand target and design options.

Recommendation G5: That the SCER directs the AEMC to review the costs and benefits of introducing a capacity-market, or capacity-elements, into the NEM to facilitate higher levels of demand-side participation.

Recommendation G6: That a standard connection, fair pricing and licencing regime for distributed generation be established, supported by a distributed generation ombudsman within the Australian Energy Regulator.

---

6 Dunstan, C., Boronyak, L., Langham, E et al., 2011, *Think small: The Australian decentralised energy roadmap: Issue 1*, December 2011, p. 30.

7 Australian Industry Group, Brotherhood of St Lawrence, Choice, Energy Efficiency Council, *A Plan for Affordable Energy*, p.2.

8 Total Environment Centre, *Submission 72,* p. 3.

Recommendation G7: That the Federal Government implement a national energy intensity target and the National Energy Savings Initiative.

Introduction

The Select Committee on Electricity Prices is one of several inquiries and reviews occurring into electricity prices and the regulation of the NEM. The Council of Australian Governments (COAG) will meet on December 7 to consider a package of energy market reforms. The Greens support the Select Committee recommendations, but there are additional recommendations that should form part of the COAG energy market reforms.

Reforming the National Electricity Objective (NEO): incorporating environmental and demand management objectives

The Australian Greens welcome the Select Committee recommendation that the AEMC consider how environmental considerations can be incorporated into the operation and regulation of the NEM. It is recognition that environmental considerations are not presently being adequately integrated.

Re-writing the NEO is necessary for environmental considerations to be incorporated at all levels of the NEM. As the Clean Energy Council submitted:

> The National Electricity Objective is the fundamental driver behind decision making processes undertaken by regulators in the national electricity market. However, this objective does not consider the requirements for sustainable development (economic, social and environmental needs). This limitation means that the long-term interests of consumers cannot be fully considered by regulatory decision makers. The National Electricity Objective should be amended to ensure that it fully reflects the concept of sustainable development.[9]

The Australian Energy Market Agreement (2006) included 'address(ing) greenhouse emissions from the energy sector' as one of its objectives, but this has not been translated into any regulatory frameworks governing the NEM.

As the Clean Energy Council further notes:

> When asked, the AEMC will clearly state their belief that policies to reduce emissions and promote renewable are simply externalities. Despite the transformative influences of these policies on the market which is being regulated by the AEMC, their firm view is that they have no responsibility to consider them or even to enable them to be met at least cost, for the long term interests of consumers.[10]

The Total Environment Centre highlighted some of the effects of the absence of an environmental objective in the NEO:

> The current NEO does not support climate and renewable energy policies, and struggles when their implementation appears to conflict with the overarching objectives of the NEM … This disconnect is apparent, inter alia, in relation to the costs and connection times associated with renewable

9 Clean Energy Council, *Submission 74*, p. 2.

10 Clean Energy Council, *Submission 74*, p. 11.

> energy projects at all scales, from humble rooftop PVs to the largest wind farms. It is also apparent in the current push by some retailers to attempt to restore revenue lost via the boom in PV systems by increasing fixed charges, making new PV systems less financially attractive.[11]

The United Kingdom has incorporated an environmental objective to ensure alignment between the operations of the electricity market and climate change and environmental policy. Australia also needs an environmental objective in the NEO ensure alignment between the NEM and public policy, and to ensure that regulators do not implement decisions that will impact on efficient carbon reduction or renewable energy targets.

Additionally, a demand-management objective is necessary to ensure the regulations and market operation balances investment in network infrastructure with non-network solutions – and doesn't privilege building network infrastructure over demand-side solutions.

In theory, the requirement to make decisions in the long-term interests of consumers should ensure this is the case, but as the AEMC, the AER and industry stakeholders have noted this is not occurring. To ensure cost-effective non-network alternatives are placed on equal footing to network investment, relevant provisions within the National Electricity Law and National Electricity Rules should be re-written to require regulators and networks to do so.

Recommendation G1

That the National Electricity Objective be re-written to include an environmental objective and an Objective there are no regulatory barriers to demand management, energy efficiency and distributed generation.

NEM-wide planning

The Australian Greens have additional comments in support of Recommendation 3 and 5.

The NEM is in practice a group of inter-linked state markets with major variations between states on the regulation of network services.

In relation to reliability standards, the Productivity Commission notes:

> (a) there are major variations between jurisdictions which does not efficiently optimise reliability standards across the NEM;
>
> (b) there is a conflict of interest if transmission businesses are both responsible for setting and meeting reliability standards, and evidence of massive over-engineering of standards in some States (e.g. the Productivity Commission estimates $1.1 billion alone could be saved in

11 Total Environment Centre, *Submission 72*, p. 15.

one regulatory period in NSW for the distribution networks, which implicitly values electricity at $9 million/megawatt-hour);[12] and

(c) 'deterministic' approaches used in some states encourage building rarely-used lines as redundancy into networks and discourage cheaper demand-side solutions.

The AER has also noted there are ambiguities in the deterministic reliability criteria which 'make it difficult for the AER to assess whether the capital expenditure proposals of [transmission network service providers] are genuinely required to meet reliability requirements.[13]

The risks of political consequences for networks and state governments from outages also encourage extreme conservatism. Reliability standard setting should be undertaken by an independent agency across the NEM.

AEMO, AEMC and the Productivity Commission have also noted that state-based transmission planning creates a potential bias against inter-connection between regions.[14] The Energy Reform Implementation Group previously identified in 2007 that:

> ...investment decision making is biased toward investment within each state rather than, where it is efficient to do so, having a true national character ... in an interconnected alternating current AC electricity grid, additions and subtractions of generation and network capacity at any point within the system affect conditions in other parts of the network ... Efficient system wide development requires planning to be coordinated across generation, transmission and load.[15]

Efficient flows of energy between regions can reduce prices[16] and assist in maintaining network security with higher penetrations of renewable energy. The establishment of a NEM-wide planner is an important reform to facilitate transition to a low-carbon electricity system.

The AEMO currently publishes the annual National Transmission Network Development Plan (NTNDP) but it cannot direct a transmission network to undertake investment in the plan. The exception is in Victoria where ownership was separated

---

12 Productivity Commission Draft Report, *Electricity Network Regulatory Frameworks*, October 2012, p.3.

13 AER cited in Productivity Commission Draft Report, *Electricity Network Regulatory Frameworks*, October 2012, p. 486.

14 AEMO and AEMC cited in Productivity Commission Draft Report, *Electricity Network Regulatory Frameworks*, October 2012, p. 641.

15 Energy Reform Implementation Group cited in Productivity Commission Draft Report, *Electricity Network Regulatory Frameworks*, October 2012, p. 640.

16 The Productivity Commission estimates an efficient transmission reliability framework could produce savings of $1 billion within a single regulatory period, and greater savings over the long-run. Productivity Commission Draft Report, *Electricity Network Regulatory Frameworks*, October 2012, p. 485.

from network planning, and the AEMO undertakes network planning and procurement. The Productivity Commission notes:

> The Victorian transmission planning framework appears to support efficient options for meeting reliability constraints. The decisions about what, where and when to build are made by AEMO, or are subject to competitive forces through tendering. AEMO, an expert, independent, not-for-profit planner, has little incentive to make inefficient investment decisions ... AEMO also has no reason to prefer network or non-network solutions since it is not influenced by the need to meet deterministic standards. As a result, it can identify the most efficient option, which may be a network or non-network option, or a combination of both.[17]

Establishing AEMO as a NEM-wide planner can also therefore create scope for an integrated resource assessment which examines both network and non-network solutions, and open up the tendering process to third-parties offering non-network solutions. Rule changes would be required to enable the AER to accept AEMO's advice on preferred network and non-network options.

As in Victoria, AEMO could also operate competitive tenders which are likely to deliver more cost-effective network augmentations. The Clean Energy Council says cost over-runs and excessive quotes are commonplace for network augmentations for large-scale renewable energy.

The Productivity Commission has noted some concerns about the costs of under-taking tenders and that in most cases the network proposal was selected. This is likely to reflect an under-developed third-party provider market and market competition can be expected to improve over time.

AEMC has proposed a hydrid-model which the Productivity Commission considers a 'second best alternative'.[18] The hybrid-model retains deterministic standards, and would establish new bodies within each state to set reliability standards. This does not create a genuinely NEM-wide framework and deterministic standards discriminate against demand-side options.

The AEMO should be established as a 'single planning agency for the entire NEM that is independent of individual governments and network businesses, which are conflicted in their role as planners and reliability setters'.[19] The Garnaut Review also recommended the establishment of a national transmission planning and reliability framework.[20]

---

17 Productivity Commission Draft Report, *Electricity Network Regulatory Frameworks*, October 2012, p. 502–03.

18 Productivity Commission Draft Report, *Electricity Network Regulatory Frameworks*, October 2012, p. 642.

19 Productivity Commission Draft Report, *Electricity Network Regulatory Frameworks*, October 2012, p. 18.

20 Garnaut Climate Change Review, 2011, *Transforming the Electricity Sector*, Update Paper No. 8.

The transition to demand forecasting by AEMO should also be completed. Transmission businesses produce the forecasts for New South Wales, Queensland and Tasmania that are used as the starting point for network planning and revenue determinations within the AER. This creates potential for over-stating demand in the context of the incentives which exist to over-investment. AEMO, which currently produces the forecasts for Victoria and South Australia, should also assume this responsibility across the NEM. AEMO processes should be more transparent and open to specialist input, especially on energy efficiency and distributed generation where forecasting capacity is relatively under-developed.

If AEMO is to assume further NEM-wide responsibilities, it is also timely to consider if its membership-funded model is appropriate to ensure there are no real or perceived conflicts of interest.

Recommendation G2

That the Standing Council on Energy and Resources direct the AEMC to examine arrangements for AEMO to be the single planning agency for the NEM with responsibility for forecasting, network planning, national reliability standards and operating tenders for integrated assessment of network and non-network options.

Further regulatory reform: de-coupling revenue and energy throughput

Overall, the recommendations in the Select Committee report and relevant reviews and rule-change processes (*Power of Choice* review, the *Economic Regulation of Network Service Providers* rule change and the statutory *Limited Merits Appeal review*) represent a significant, positive step.

The reforms should be implemented as soon as possible to provide regulatory certainty and ensure they are incorporated into the next round of revenue determination processes for network businesses.

However, the reforms currently proposed do not fully address the systemic incentives and disincentives identified as underpinning inefficient investment and privileging network over non-network solutions.

The Select Committee's Recommendation 4 is for the AEMC consider measures to de-couple network revenues and energy throughput. The AEMC has already noted the incentives to over-investment and over-recovery of revenue created by the linkage between profits and energy volume:

> When a network business develops tariffs which are based on consumption volumes, its profits could depend upon the level of actual volumes. Under such a tariff structure, the business would have no incentive to pursue any form of DSP project (or energy efficiency project) which decreases volumes.[21]

21 AEMC, *Power of Choice – giving consumers option in the way they use electricity draft report*, 6 September 2012, p. 127.

Revenue determinations for most distribution networks (NSW, Victoria, South Australia) are regulated using a weighted average price cap instead of a revenue cap (maximum allowable revenue) - which the AEMC observes is 'largely' a result of the AER's decision to continue with the previous mechanisms used by jurisdictions.

Under a price cap, the AER divides revenue requirements by projected units of sales. Unlike a revenue cap which incorporates ex-post adjustment to revenues (which ensure networks recover the specified revenue – no more, no less), a price cap is set annually, and there is no subsequent adjustment; if volume is higher than anticipated, the networks earn additional profits – and vice-versa. Under price caps, there have been cases of serious over-recovery (e.g. the AER estimated an over-recovery in the Victorian 2006-10 regulatory period, there was an over-recovery of $568 million) and it creates dis-incentives for demand-side activity:

> In the short-run, under a revenue cap when demand is increasing, revenue remains constant. Networks therefore have an incentive to encourage energy saving measures … in order to reduce costs, thereby increasing profits. Where a price cap is in place, on the other hand, when demand is increasing networks will increase their revenue by encouraging more consumption.[22]

It is notable there is a higher level of demand-side activity in Queensland which operates under a revenue cap.

The AEMC and the Productivity Commission have expressed a preference for price caps over revenue caps. The Productivity Commission argues that it creates a stronger incentive to efficiently price electricity to discourage peak consumption, and now that reforms are in motion for time-of-use pricing to remove distortions it should be retained.[23]

Time-of-use pricing is part of the solution, and the Australian Greens support their introduction in a phased manner with consumer education and protections for vulnerable consumers. However, there will be limits on both the extent to which pricing is genuinely cost-reflective for equity reasons, and the capacity and motivation of consumers to respond to price signals – especially low-income consumers. As the Productivity Commission notes, it is likely that the roll-out of time-of-use pricing, smart meters and other associated reforms will take quite some time.

In the meantime, the AER should move to implement revenue caps for all distribution networks. This could be reviewed if and when it is clear the pre-conditions for effective implementation exist for price caps to be implemented.

Recommendation G3

That the AER implement revenue caps for all Distribution networks to de-couple network revenue and energy consumption.

---

22 Total Environment Centre, *Submission 72*, p. 6.

23 Productivity Commission Draft Report, *Electricity Network Regulatory Frameworks*, October 2012, p. 417.

A peak demand reduction target for networks

An effective response to rising electricity prices must address aggregate and peak demand:

> The current state of rising electricity prices is primarily driven by a failure to manage peak demand, both at a network and a generation level. The inability or reluctance to properly engage the demand side of the market has lead to over investment in and inefficient operation of the electricity system.[24]

The Decentralised Energy Roadmap developed by the University of Technology's Institute for Sustainable Futures found that approximately one-third of the capital invested in our networks could be avoided by managing peak demand. In the current regulatory period, that is equivalent to $15 billion of network investment.[25]

The AEMC (reflecting stakeholder submissions, including networks) has found the existing Demand Management and Embedded Generation Connection Incentive (DMEGCI) scheme is not working. The allowance under the DMEGC represents just 0.1 to 0.2 per cent of network revenue, and still only 15-20 per cent of approved expenditure has been spent from 2010-12.[26]

The AEMC proposes reforms to the operation of the Demand Management and Embedded Generation Connection Incentive (DMEGCI) scheme. Reforms to the DMEGCI are unlikely to be effective (or at least optimal) in the context of on-going systemic incentives and barriers which will take time to fix. There are also powerful forces toward inertia and under-investment due to factors such as:

- Network culture: the AEMC observers there is an 'internal bias to engineering solutions' within the networks; and
- Low demand-side capacity: network skills and experience in implementing demand-side solutions is under-developed, and the external, third-party demand-side market is immature.

The United Kingdom and 14 US states have legislation or regulations for network peak demand reduction schemes – explicitly setting targets for networks to address part of forecast growth in peak demand through 'non-network' solutions.

---

24 Mr Damien Moyse, Energy Projects and Policy Manager, Alternative Technology Association, *Proof Committee Hansard*, 3 October 2012, p.1.

25 Dunstan, C., Boronyak, L., Langham, E et al., 2011, *Think small: The Australian decentralised energy roadmap: Issue 1*, December 2011, p. 30.

26 Clean Energy Council, *Submission 74*, p. 13.

A range of submissions from industry, clean energy bodies and community/consumer organisations advocated mandating a minimum peak demand reduction target for networks in Australia.[27]

> Targets are important, because they set expectations and focus management's attention. A regulated business can choose to ignore an incentive scheme, or make only a token effort…judging by the results of previous attempts to incentivise DSP, there is a risk of this happening with the proposed incentive scheme.[28]
>
> Develop a proposal to set distribution network companies minimum targets to reduce infrastructure driven by new peak demand. Network companies have a lot of experience in building infrastructure to meet demand, and very little history with peak reduction projects that can be much cheaper. On their own, incentives will take a long time to change this. Setting network companies a minimum target…would help them develop the experience and skills to use demand-side measures.[29]
>
> Many networks companies are still building infrastructure based on the assumption that energy consumption is rising, when in fact it has been declining for the last few years…While some network companies have made some effort to improve their demand-side skills, the culture and skills sets of every network business in Australia still substantially favours network augmentation over peak reduction…the NEM now has a 15-year history of tinkering in this area, which has failed to address this issue. It is clear that far more directive action is required. Such directive action is common in energy markets in the US and Europe.[30]

A range of models for a peak demand target were proposed. For example:

(a) Mandated peak demand reductions through the DMEGCI: the AER would oversee an obligation for networks to meet a minimum proportion of forecast peak demand through non-network measures. This would be implemented through the existing DMEGCI.

(b) A peak demand reduction fund: a national peak reduction target would be allocated between networks, and an independent body such as AEMO or the Clean Energy Regulator would oversee a tender process from the networks and third-party specialists for peak demand reduction projects. A price-cap for tenders based on the value of network augmentation

---

27 Australian Industry Group, Brotherhood of St Lawrence, Choice, Energy Efficiency Council, *A Plan for Affordable Energy*; Total Environment Centre, *Submission 72*; Clean Energy Council, *Submission 74*; EnerNOC, *Submission 50*; Alternative Technology Association, *Submission 80*; Dunstan, C., Boronyak, L., Langham, E et. al., 2011, *Think Small: the Australian Decentralised Energy Roadmap: Issue 1*, December 2011.

28 EnerNOC, *Draft Power of Choice Submission*, p. 2.

29 Australian Industry Group, Brotherhood of St Lawrence, Choice, Energy Efficiency Council, *A Plan for Affordable Energy*, p. 2.

30 Energy Efficiency Council, *Submission 75*, p. 10.

would provide a safeguard against inefficient investment. The up-front costs could be funded by a consumer levy, with the price cap ensuring there is benefit-sharing between networks and consumers, or through a program such as the Clean Technology Innovation Program.

(c) A peak demand reduction white certificate scheme: a network obligation akin to existing state-based energy efficiency retailer obligations. Networks would be required to acquit certificates, self-generated or sourced from third-parties, to meet a mandated peak demand reduction target.

(d) A network productivity target scheme: a mandated target based on network load factor or ratio between peak/average demand, administered by the AER or the Clean Energy Regulator.

The AEMC agrees there is under-investment and the networks are poorly positioned to undertake demand management – but does not support a target because of the risk of networks under-taking inefficient investment for the purposes of meeting a target. Submissions to this Inquiry indicate these concerns can be addressed through effective scheme design such as safeguards within the DMEGCI or price-caps for peak demand reduction projects.

The risk of consumers over-paying for investment in non-network solutions to meet peak demand targets appears considerable lower than the risk consumers will continue to pay for the failure to invest in cost-effective energy efficiency, demand management and distributed generation.

Recommendation G4

That the Department of Climate Change and Energy Efficiency and the Department of Resources, Energy and Tourism, in partnership with the Australian Energy Regulator, commission an independent study into the costs and benefits of a peak demand target and design options.

Facilitating demand-side participation

There was widespread support for the recommendations in the Power of Choice review to facilitate demand-side participation in submissions and public hearings, such as enabling demand-side bidding into the wholesale electricity market.

However, the major Australian demand-side aggregator (EnerNOC) and the Energy Efficiency Council also submitted that the benefits of the change proposed by the AEMC may be limited unless a capacity-market, or capacity-market elements were introduced into the NEM.

Effective participation will require the capacity to respond very quickly to fit with the 5-minute bid periods of the ‘energy-only’ wholesale market. EnerNOC notes that whilst there are some demand-response activities that can take advantage of the proposed change, the high short-run marginal costs of most demand-side activities will limit the ability to take advantage of the opportunity:

> Some demand resources are able to dispatch at short notice, in 5-10 minutes or less. These are customers whose operations are simple, or whose loads

> can be remotely controlled. Demand response on these terms is relatively expensive, because dispatching such resources tends to be disruptive. Increasing the notice period greatly increases the number of customers that can participate ... truly broad participation can be achieved if 1-2 hours of notice can be given.[31]

A capacity-market includes payment for availability irrespective of energy output, plus a payment for dispatched energy. It would guarantee payment to demand-side participants. Western Australia, which has a capacity-market, has a 7 per cent contribution from demand response relative to 3 per cent in the NEM[32]:

> If a capacity market was introduced into the National Electricity Market, an energy consumer could sell their demand-response into the capacity market instead of the wholesale energy market. Capacity markets appear to unlock greater volumes of peak reduction than other mechanisms but…any decision to introduce a capacity market requires detailed consideration.[33]

Recommendation G5

That the SCER directs the AEMC to review the costs and benefits of introducing a capacity-market, or capacity-elements, into the NEM to facilitate higher levels of demand-side participation.

Connection processes and pricing of distributed energy

As the Productivity Commission has noted, distributed generation is 'constrained by regulatory obstacles';[34] connection processes are costly, uncertain, complex and lengthy.

The Australian Greens welcome the Select Committee recommendations, but believe a distributed generation ombudsman within the Australian Energy Regulator may be more effective. If effective processes are not established within State and Territory Ombudsmen and Territories, the Commonwealth Government should fund the establishment of a distributed generation ombudsman within the Australian Energy Regulator.

Recommendation G6

That the Commonwealth Government should fund the establishment of a distributed generation ombudsman within the Australian Energy Regulator, if satisfactory progress is not forthcoming on empowering and resourcing State and Territory Ombudsmen and/or tribunals.

Energy efficiency programs outside the NEM

---

31 EnerNOC, *Submission to Power of Choice Draft Report*, p. 3.

32 Oakley Greenwood, *Policy Options for maximising downward pressure on electricity prices*, p. 30.

33 Energy Efficiency Council, *Submission 75*, p. 11.

34 Productivity Commission Draft Report, *Electricity Network Regulatory Frameworks*, October 2012, p. 439.

Reforms outside the NEM are also required to drive improvements in energy productivity, reducing aggregate and peak demand.

The recommendation of the Prime Minister Task Group on Energy Efficiency to set a national 30% energy intensity target for 2020 should be implemented. A national energy intensity target would create a focal point for a policy framework to improve energy productivity. The Department of Climate Change and Energy Efficiency would report annually on progress towards the target and be required to develop a plan to achieve the target.

The National Energy Savings Initiative (a national energy efficiency trading scheme) should be implemented, replacing schemes operating in NSW, Victoria and SA. The review of the NSW Energy Savings Scheme by IPART found it to be delivering cost-effective energy savings, and the first round of modeling on the NESI estimated it could reduce household energy bills by $87 to $296 a year by 2020, including $3.5 billion - $12 billion in deferred generation and network costs.

Recommendation G7: That the Federal Government implement a national energy intensity target and the National Energy Savings Initiative.

Senator Christine Milne
Senator for Tasmania

Additional comments from Senator Nick Xenophon

Public outrage about the massive 40 per cent increase in electricity prices since 2008 cannot be denied, and is indeed justified. As acknowledged by the committee in the majority report, it is concerning to see that disagreement exists within the industry as to the reasons behind the price increases.

Appropriate data regarding the drivers of increased electricity costs needs to be recorded and made publicly available to improve industry accountability and transparency. To that extent I welcome the important work that has been done by the Australian Energy and Market Commission (AEMC) to predict the contributions of a number of factors to future price increases. However it would have been immensely beneficial to this inquiry if comprehensive data had been made available to explain the huge price increases of the past five years. Such data should be made available publicly, and if the industry refuses, it should be mandated in legislation.

Key causes of electricity price increases

The majority report addressed the main causes of electricity price increases, however I believe two factors deserve further attention: cost forecasting and the impact of complying with climate change policies, including the Renewable Energy Target (RET) and its current structure. I emphasise that the target itself should not be changed; rather, incentives need to be given within the RET for baseload renewables such as geothermal.

Cost forecasting

On 2 October 2012 the Essential Services Commission of South Australia (ESCOSA) released a draft determination on wholesale electricity costs and the standing contract price. In South Australia, ESCOSA regulates retail electricity prices for small consumers who are on the standing contract offered by AGL Pty Ltd. ESCOCA's draft determination announced a reduction of 8.1 per cent of the standing contract price. The reason for the reduction was inaccurate forecasting of the wholesale price of electricity. This example demonstrates how convoluted predicting prices can be, based on rules skewed against consumers, and how important it is for regulators to have review mechanisms in place to ensure that price predictions align with actual prices.

Climate and renewable energy policies

At the outset I wish to make it clear that Australia must take steps to protect our environment and economy from the impacts of climate change. That said, I have concerns climate and renewable energy policies are inefficient and may place an undue financial burden on households and businesses, while not achieving an optimal environmental outcome.

The Large-Scale Renewable Energy Target (LRET) imposes a legislated target of 41,000GWh of electricity be produced by renewable sources in the period 2020 to 2030. My issue is not with that target, but the way the target is achieved through an over-reliance on one form of technology. It favours a form of technology (wind power, for example) that does not provide reliable baseload power, and fails to give sufficient support to emerging technologies such as geothermal and solar thermal, which have the potential to provide baseload power.

In their submission Major Energy Users Inc expressed concerns about the impact of state renewable energy incentive schemes:

> The cost of these state schemes cannot be under-rated. For example, the cost of the feed-in tariff scheme used in SA has resulted in network prices increasing by over 20% in 2012/2013 just to recover the PV rebate payable.[1]

The REC Agents Association put forward a set of different figures to describe the impact of renewable energy schemes:

> While it is clear that the renewable scheme has contributed to rising power prices, it is currently less than 1c per kilowatt hour, which is roughly equivalent to 3.4 percent of retail prices, and a similar amount is due to state based schemes.[2]

However the Independent Pricing and Regulatory Tribunal (IPART) states:

> In 2011-2012 the cost of complying with the RET adds around $102 (or around 5%) on average to an indicative regulated electricity consumer's bill in NSW. This is significantly higher than was forecast when the RET scheme was amended in 2009 and 2010 and higher than the estimates referred to in the Climate Change Authority's recent issues paper for the RET review.[3]

IPART continues:

> Together, the RET and the carbon price add around $270 to a typical residential consumer's bill in NSW in 2012/13. As the target increases each year until 2020, the costs of meeting the LRET are likely to increase (depending on the price of the certificates). It is possible that by 2020 the LRET will add more to electricity bills than the carbon price.[4]

However the committee heard the LRET may actually reduce wholesale electricity prices:

---

1 Major Energy Users, *Submission 30*, p. 5.

2 Mr Riccoardo Brazzale, President, REC Agents Association, *Proof Committee Hansard*, 9 October 2012, p. 9.

3 IPART, *Submission 35*, pp 9–10.

4 IPART, *Submission 35*, p. 10.

> …the extra generation that the LRET brings on has to some extent – and there is some controversy over the size – a depressing effect on wholesale electricity prices.[5]

Professor Garnaut also commented:

> The steady expansion of renewable energy supplies under the RET is forcing down wholesale prices, and it is possible, although no certain, that in the middle of 2015 with the linkage to the European market we would have a lower carbon price than we do today.[6]

With such disagreement as to the impact of renewable energy schemes on electricity prices it is unsurprising confusion exists as to the true cost of these schemes to consumers. Therefore I welcome recommendation 1 of the committee which calls for regular ongoing quantitative monitoring of contributors to electricity prices, however I believe detailed analysis of past contributors should also be conducted.

Recommendation: the AEMC conduct a thorough investigation into the impact renewable energy schemes, both federal and state-based, have had on electricity prices since 2008, with a view to maximising the environmental benefits at the lowest cost to consumers. Further, such a review should investigate the long-term benefits of encouraging investment in baseload renewables.

Demand management

The committee has engaged in a comprehensive discussion about how to manage overall demand, and in particular peak demand, in order to reduce electricity prices. What is apparent in today's electricity market is the information vacuum that seems to exist in terms of consumer knowledge of the industry. Therefore proposals such as mandatory installation of smart meters must be met with significant efforts by industry and government to educate the public about demand management initiatives and how they can be used to reduce power bills.

The fallout from lack of education was expressed clearly by the Energy Retailers Association of Australia in their discussion about smart meters in Victoria:

> it was done without much consumer involvement, information or consultation,…(because consumers) got the cost of the meter upfront without getting any of the befits, (this) has poisoned the environment around (smart meters).[7]

---

5 Mr Tennant Reed, Principal National Adviser, Public Policy, *Proof Committee Hansard*, 25 September 2012, p. 43.

6 Professor Ross Garnaut, *Proof Committee Hansard*, 9 October 2012, p. 2.

7 Mr Cameron O'Reilly, Chief Executive Officer, Energy Retailers Association of Australia (ERAA), *Proof Committee Hansard*, 25 September 2012, pp 21–22.

This example clearly demonstrates that potentially cost saving technology can be mistrusted or ignored by households due to lack of consumer education and involvement in the technology's rollout. Without appropriate consumer engagement and rigorous legislative safeguards, price savings may not be achieved.

The committee has recommended the SCER agree to introduce cost reflective pricing for electricity in conjunction with smart meters in all jurisdictions in the NEM based on the three tier consumer size model proposed by the Power of Choice draft report. Should the SCER agree to implement this model I strongly encourage it to heed the committee's recommendation that the rollout be accompanied by a comprehensive consumer information and education campaign during both the planning and implementation phases.

Consumer protection

The role of the National Energy Consumer Framework and advocacy groups

The severe impact rising electricity prices has had on households in undeniable. The committee received evidence from a variety of sources attesting to the increase in requests for assistance from consumer advocacy groups, complaints to energy industry ombudsmen and, sadly, utility disconnections.

Encouraging limited use of electricity can only go so far to keeping electricity bills low. One submitter described how he was able to keep his quarterly power bills to $150:

> Few Australians would tolerate the self imposed discipline whereby I achieve that figure: no freezer, no TV, no computer, no washing machine, no lights, no stove/oven and no hot showers.[8]

In a developed nation such as Australia we should not expect the financially vulnerable to take such drastic measures in order to pay the bills. In response to this issue the committee has made two important recommendations, both of which I fully support.

Recommendation 13 encourages all states and territories to adopt the National Energy Consumer Framework (NECF), a national regime for the sale and supply of electricity and gas that contains a number of consumer protections.

One such protection is for energy contracts to be explained in terms consumers understand before signing. Recently I was made aware of a number of people in South Australia who had negotiated a discount on their electricity rate with their retailer in exchange for signing up to a contract for a minimum of two to three years. However shortly after they signed the contract the residents received a letter from their retailer informing them rates had increased. Unless the resident was willing and able to pay a

8 Mr Mark Hattersley, *Submission 54*, pp34.

$75 early exit fee they were locked into paying higher power prices for the next few years when they thought they had negotiated a discount.

The NECF should require retailers fully disclose potential future price increases when asking customers to sign up to minimum term contracts. Similarly each State should follow New South Wales' lead and take steps to ban early exit fees for utility contracts.

The second recommendation by the committee regarding consumer protection is for the Standing Council on Energy and Resources (SCER) to consider establishing a national consumer advocacy body to represent and support consumers in the National Electricity Market (NEM). This body would restore the focus on the long term interests on consumers in electricity policy (as per the National Electricity Objective) by representing consumer views to policy makers as well as provide advocacy and support for consumers.

Financial assistance for meeting rising electricity prices

Concerns have been raised previously that Federal Government handouts to low-income earners to compensate for the introduction of the price on carbon were spent on poker machines. In July this year the Australian Financial Review reported:

> Poker machine revenue in Queensland jumped more than 7 percent in May – when the first Clean Energy payments went out – and rose almost 12 percent in June year on year.[9]

It is important low income earners receive assistance with meeting the higher electricity bills, however there must be appropriate safeguards in place to ensure the money is being spent where it is intended. State and Federal Governments should give consideration to providing assistance by way of vouchers payable to utility companies rather than direct cash payments.

Industry claiming to be victims

The following interchange with the Chief Executive Officer of the Energy Retailers Association of Australia sets out a position energy retailers have put to the public that many would consider to lack credibility.

> Senator XENOPHON: Further to Senator McEwen's line of questioning, could you take on notice and provide us details of the form of self-regulation practices that you have, how you deal with disputes, the number of complaints you have had and whether you pass on some of the more egregious disputes on to regulators for formal action? Like Senator McEwen, I have had a number of constituents who have complained about practices with respect to this. My first substantive question goes to your submission. On behalf of your members, the energy retailers, you have

9 Sue Mitchell, Gemma Daley and Fleur Anderson, *Gambled away: Pokies swallow carbon tax compo*, Australian Financial Review, 18 July 2012, p. 1.

basically cried victim. You have said that it is important that senators understand that the retailers are the billing agent for the entire electricity industry and the value chain—meaning that they bear much of the consumer backlash over rising electricity prices. To what extent do you think that consumer backlash is in part due to AGL boss Michael Fraser's pay going up 85 per cent from $3.4 million to $6.3 million and that Origin Energy's managing director Grant King's package is now $8.348 million—a rise of $600,000 in one year?

Mr O'Reilly: I would say to you that we are fortunate that the two largest energy companies in this country—which are in the top 20 ASX listed companies—have performed very well in recent years in a very challenging climate for shareholders.

Senator XENOPHON: That is not my question. I am asking about the consumer backlash. Do you acknowledge that some of these massive pay rises by members of your association have caused a degree of that consumer backlash?

Mr O'Reilly: I would say that they are held to account by their boards, and as the federal government has introduced further powers for shareholders to look at executive pay, in this case it appears that the board and shareholders of those companies are happy. These things come to light because of transparency and reporting of executive salaries, which is a good thing.

Senator XENOPHON: That is not my question. You made an assertion in your submission that the retailers bear much of the consumer backlash over rising electricity prices—and you do not consider that the hefty pay rises given to AGL boss Mr Fraser and Origin's Grant King have anything to do with that consumer backlash?

Mr O'Reilly: Executive salaries is an issue which is something that is held to account by boards and by the opportunity for shareholders to now vote on remuneration reports. These companies are billion dollar companies upon which we rely to build our future generation and to provide an essential service. If they are doing a good job then I do not think that encouraging envy is necessarily a good way to be dealing with the issue of our rising electricity prices.

Senator XENOPHON: I am not encouraging envy; I am just asking you whether you acknowledge that when consumers are facing rising power prices and they see that an energy retailer gets an 85 per cent pay rise—up to $6.3 million—that could fuel part of that consumer backlash.

> Mr O'Reilly: I am not accountable for how much my respective member CEOs get paid. The boards of those companies are and they seem to be happy with the job they are doing. What I would say is that these companies are going to play a critical role in building the future generation of this country and delivering reliable electricity, and I hope they are run by the best people available who are getting paid appropriate dollars.[10]

Senator Nick Xenophon
Senator for South Australia

10 Mr Cameron O'Reilly, Chief Executive Officer, ERAA, *Proof Committee Hansard*, 25 September 2012.

Appendix 1

Submissions, additional information, tabled documents and answers to questions taken on notice

Submissions

1 ACT Greens

2 Consumer Utilities Advocacy Centre

3 Ms Heidi Muller

4 Mr Ray Davis

5 Name Withheld

6 Mr Barry Spencer

7 Mrs Lynette Oakes

8 Mr Joe Nagy

9 Name Withheld

10 Engineers Australia

11 Ethnic Communities Council of NSW

12 Association of Building Sustainability Assessors (ABSA)

13 Energy and Water Ombudsman Victoria

14 Mr Brian M'Crystal

15 Prof. Alan Pears AM

16 Business Council of Australia

17 Tasmanian Government

18 Combined Pensioners and Superannuants Association

19 The Association of Professional Engineers, Scientists and Managers, Australia

20 ClimateWorks Australia

21 Energy and Water Ombudsman NSW

22 Starfish Ventures

23 Lend Lease

24 Consumer Action Law Centre

25 UnitingCare Australia

26 Silver Spring Networks

27 energetics

28 Australian Energy Market Commission

29 Energy Retailers Association of Australia

30 Major Energy Users Inc

31 One Big Switch

32 Ms Jan Turner

33 Mr Bruce Robertson, Manning Alliance

34 AGL Energy Limited

35 IPART

36 St Vincent de Paul Society

37 Sustainable Energy Association

38 Mr Bruce Mountain

39 AEMO

40 Cotton Australia

41 Australian Coal Association Limited

42 Mr Adam McHugh

43 Australian Air Quality Group

44 Office of the Minister for Energy and Water Supply Queensland

45 Renaissance Energy

46 Solar Energy Industries Association (SEIA)

47 Origin

48 Dr Lynne Chester

49 Alinta Energy

50 EnerNOC Pty Ltd

51 Grid Australia

52 Mr Bruce Smith, Flow-Ice

53 ACT Government

54 Mr Mark de Hattersley

55 Victorian Electricity Distribution Businesses

56 EUAA

57 COTA

58 Australian Chamber of Commerce and Industry

59 Australian Energy Regulator

60 Public Interest Advocacy Centre

61 Department of Resources, Energy and Tourism

62 Unions NSW

63 Australian Power and Gas

64 Energy Networks Association

65 Physical Disability Council of NSW

66 Hydro Tasmania

67 Australian Council of Social Service

68 Infigen Energy

69 Chamber of Commerce and Industry of Western Australia

70 REC Agents Association

71 Australian Aluminium Council

72 Total Environment Centre

73 CHOICE - Australian Consumers Association

74 Clean Energy Council

75 Energy Efficiency Council

76 Energy Supply Association of Australia

77 United Voice

78 National Farmers' Federation

79 Pacific Hydro Australia

80 Alternative Technology Association

81 Economic Regulation Authority

82 CSIRO

83 Low Carbon Australia

84 CEPU

85 South Australian Council of Social Service

86 Brotherhood of St Laurence

87 National Irrigators' Council

88 Chamber of Commerce and Industry Queensland

89 NSW Irrigators' Council

90 Ms Anne Kallies

91 Property Council of Australia

92 Canegrowers

93 Queensland Council of Social Service

94 Name Withheld

95 Jesuit Social Services

96 Infrastructure Partnerships Australia

97 The Hon The Hon Peter Collier MLC, Minister for Education; Energy; Indigenous Affairs - Western Australia

98 Mr Richard Cessford

99 Smartgrid Australia

100 Grattan Institute

101 Mr Vislav Koffsovitz

102 Gerbilnow

103 TRUenergy

104 Name Withheld

105 Queensland Farmers' Federation

106 NSW Government

107 National Generators Forum

106 NSW Government

107 National Generators Forum

108 Exigency

109 Mr Terry Dwyer

110 CitiPower and Powercor Australia

111 Solarmatrix

112 Brian Woods

113 Wayne Mayo

Additional information

1 Sustainable Energy Association - Additional information provided following public hearing, Perth, 2 October 2012

2 Mr Alan Hughes - Additional information: Statement of Approach: AER Price Comparator Website

Tabled documents

Notes for introductory statement to the Senate Select Committee on Electricity Prices, tabled by Dr Iain MacGill, Centre for Energy and Environmental Markets, UNSW (public hearing, Sydney, 25 September 2012)

Think Small – The Australian Decentralised Energy Roadmap, tabled by Prof. Stuart White, Institute for Sustainable Futures, University of Technology, Sydney (public hearing, Sydney, 25 September 2012)

Energy shock: pressure mounts for efficiency action, tabled by Mr Tennant Reid, Australian Industry Group (public hearing, Sydney, 25 September 2012)

Energy and Affordability – Joining the dots, tabled by the Australian Council of Social Service (public hearing, Canberra, 9 October 2012)

Answers to questions taken on notice

Department of Resources, Energy and Tourism – answers to written questions taken on notice.

Department of Resources, Energy and Tourism – answers to questions taken on notice (from public hearing, Sydney, 25 September 2012)

Public Interest Advocacy Centre – answers to questions taken on notice (from public hearing, Sydney, 25 September 2012)

Energy Retailers Association of Australia - Answers to questions on notice (from public hearing, Melbourne, 27 September 2012)

CEPU - Answers to questions taken on notice (from public hearing, Canberra, 9 October 2012)

CSIRO - Answers to questions taken on notice (from public hearing, Canberra, 9 October 2012

Consumer Utilities Advocacy Centre and Consumer Action Law Centre - Answers to questions taken on notice (from public hearing, Melbourne, 27 September 2012)

Consumer Utilities Advocacy Centre - Answers to written questions taken on notice

Ergon Energy - Answers to questions taken on notice (from public hearing, Brisbane, 3 October 2012)

Consumer Action Law Centre - Answers to written questions taken on notice

Total Environment Centre - Answers to written questions taken on notice

Australian Energy Market Commission - Answers to questions taken on notice (from public hearing, Sydney, 25 September 2012, and; answers to written questions taken on notice

Electrical Trades Union of Australia (NSW Branch) - Answers to written questions taken on notice

United Voice - Answers to written questions taken on notice

Energex Limited – Answers to questions taken on notice (from public hearing, Brisbane, 3 October 2012)

Government of Western Australia, Department of Finance, Public Utilities Office – Answers to questions taken on notice (from public hearing, Perth, 2 October 2012)

Appendix 2
Public hearings

Tuesday, 25 September 2012 – Sydney

Department of Resources, Energy and Tourism

Mr David de Jongh, Assistant Manager, Retail Policy Team, Energy Division

Mr Alan Hopkins, Assistant Manager, Demand Side Policy Team, Energy Division

Mr Brendan Morling, Head, Energy Division

Mr Geoff Whelan, Manager, Retail Policy Team, Energy Division

Department of Climate Change and Energy Efficiency

Mr Brad Archer, First Assistant Secretary, Energy Markets and Policy Coordination Division

Department of Families, Housing, Community Services and Indigenous Affairs

Ms Andrea Wallace-Green, Section Manager, Climate Change Household Assistance Section, Seniors and Means Test Branch

Australian Energy Market Commission

Mr John Pierce, Chairman

Dr Brian Spalding, Commissioner

Mr Paul Smith, Acting Chief Executive

Energy Retailers Association of Australia

Mr Cameron O'Reilly, Chief Executive Officer

Centre for Energy and Environment Markets, University of New South Wales

Dr Iain MacGill, Joint Director (Engineering)

Institute for Sustainable Futures, University of Technology, Sydney

Professor Stuart White, Director

Grid Australia

Ms Hannah Dunn, Media and Government Manager

Mr Norman Jip, Coordinator

Mr Peter McIntyre, Chairman

Australian Industry Group

Dr Peter Burn, Director, Public Policy

Mr Tennant Reed, Principal National Adviser, Public Policy

Total Environment Centre

Mr Jeff Angel, Executive Director

Dr Mark Byrne, Energy Market Advocate

Public Interest Advocacy Centre

Mr Oliver Derum, Policy Officer, Energy and Water Consumers' Advocacy Program

Ms Carolyn Hodge, Senior Policy Officer, Energy and Water Consumers' Advocacy Program

Choice

Ms Katrina Lee, Strategic Policy Adviser

Mr Matt Levey, Head of Campaigns

Thursday, 27 September 2012 – Melbourne

Australian Energy Regulator

Mr Chris Pattas, General Manager, Network Operations and Development Branch

Ms Sarah Proudfoot, General Manager, Retail Markets Branch

Mr Andrew Reeves, Chairman

Mr Ed Willett, Board Member

Australian Energy Market Operator

Mr David Swift, Acting Chief Executive Officer

Victorian Electricity Distribution Businesses

Mr Peter Bryant, General Manager, AMI Services, CitiPower and Powercor Australia

Mr Nino Ficca, Managing Director, SP AusNet

Mr Hugh Gleeson, Chief Executive Officer, United Energy

Mr Shaun Reardon, Executive General Manager, Strategy, Regulation and Projects, Jemena Ltd

Energy Users Association of Australia

Mr Brian Green, Chairman

Mr Bruce Mountain – Private capacity

Consumer Action Law Centre

Mr Gerard Brody, Director, Policy and Campaigns

Ms Catriona Lowe, Co-Chief Executive Officer

Consumer Utilities Advocacy Centre

Ms Caitlin Whiteman, Research and Policy Advocate

Energy Supply Association of Australia

Mr Kieran Donoghue, General Manager Policy

Mr Matthew Warren, Chief Executive Officer

Clean Energy Council

Mr David Green, Chief Executive Officer

Mr Russell Marsh, Director of Policy

Energy Efficiency Council

Mr Simon Helps, Vice-President

Mr Simon James, President

Mr Robert Murray-Leach, Chief Executive Officer

EnerNOC Pty Ltd

Dr Paul Troughton, Manager of Regulatory Affairs

Tuesday, 2 October 2012 – Perth

Department of Finance, Western Australia

Dr Ray Challen, Deputy Director General Public Utilities Office

Ms Anne Nolan, Director General

Economic Regulation Authority

Mr Richard Begley, Principal Regulatory Adviser

Mr Robert Pullella, Executive Director-Access

Mr Greg Watkinson, Chief Executive Officer

Independent Market Operater (WA)

Mr Allan Dawson, Chief Executive Officer

WA Council of Social Service

Ms Irina Cattalini, Chief Executive Officer

Mr Chris Twomey, Director of Policy

Sustainable Energy Association of Australia

Professor Ray Wills, Chief Adviser

Wednesday, 3 October 2012 – Brisbane

Alternative Technology Association

Mr Craig Memery, Senior Energy Advocate

Mr Damien Moyse, Energy Projects and Policy Manager

One Big Switch

Mr Chris Zinn, Director, Campaigns

Mr Terry O'Connell - (Private capacity)

Energex Limited

Mr Darren Busine, Acting Chief Executive Officer

Mr Peter Price, Executive General Manager, Network Performance

Ergon Energy Corporation Limited

Mr Ian McLeod, Chief Executive

Tuesday, 9 October 2012 – Canberra

Professor Ross Garnaut – Private capacity

REC Agents Association

Mr Ric Brazzale, President

Ms Fiona O'Hehir, Vice-President

Low Carbon Australia Limited

Mrs Margaret McDonald, Chief Executive Officer

Energy Networks Association

Mr Garth Crawford, Principal Adviser Regulation

Dr Malcolm Roberts, Chief Executive

Australian Council of Social Service

Dr Cassandra Goldie, Chief Executive Officer

Mr Andrew Nance, Adviser

Ms Andrea Pape, Senior Policy Officer, Energy and Climate Change

National Generators Forum

Mr Tim Reardon, Executive Director

Mr Trevor St Baker, Chairman

Commonwealth Scientific and Industrial Research Organisation

Dr Glenn Platt, Theme Leader, Local Energy Systems, Energy Transformed Flagship

Dr Alex Wonhas, Director, Energy Transformed Flagship

Australian Chamber of Commerce and Industry

Mr Greg Evans, Director of Economics

Electrical Trades Union of Australia

Mr Steve Butler, Secretary, New South Wales Branch

Unions New South Wales

Mr Mark Lennon, Secretary

United Voice

Ms Louise Tarrant, National Secretary

Electrical and Plumbing Union

Mr Peter Tighe, National Secretary