

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, distributors 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 through which generators sell electricity in Queensland, NSW, the ACT, Victoria, South Australia and Tasmania.

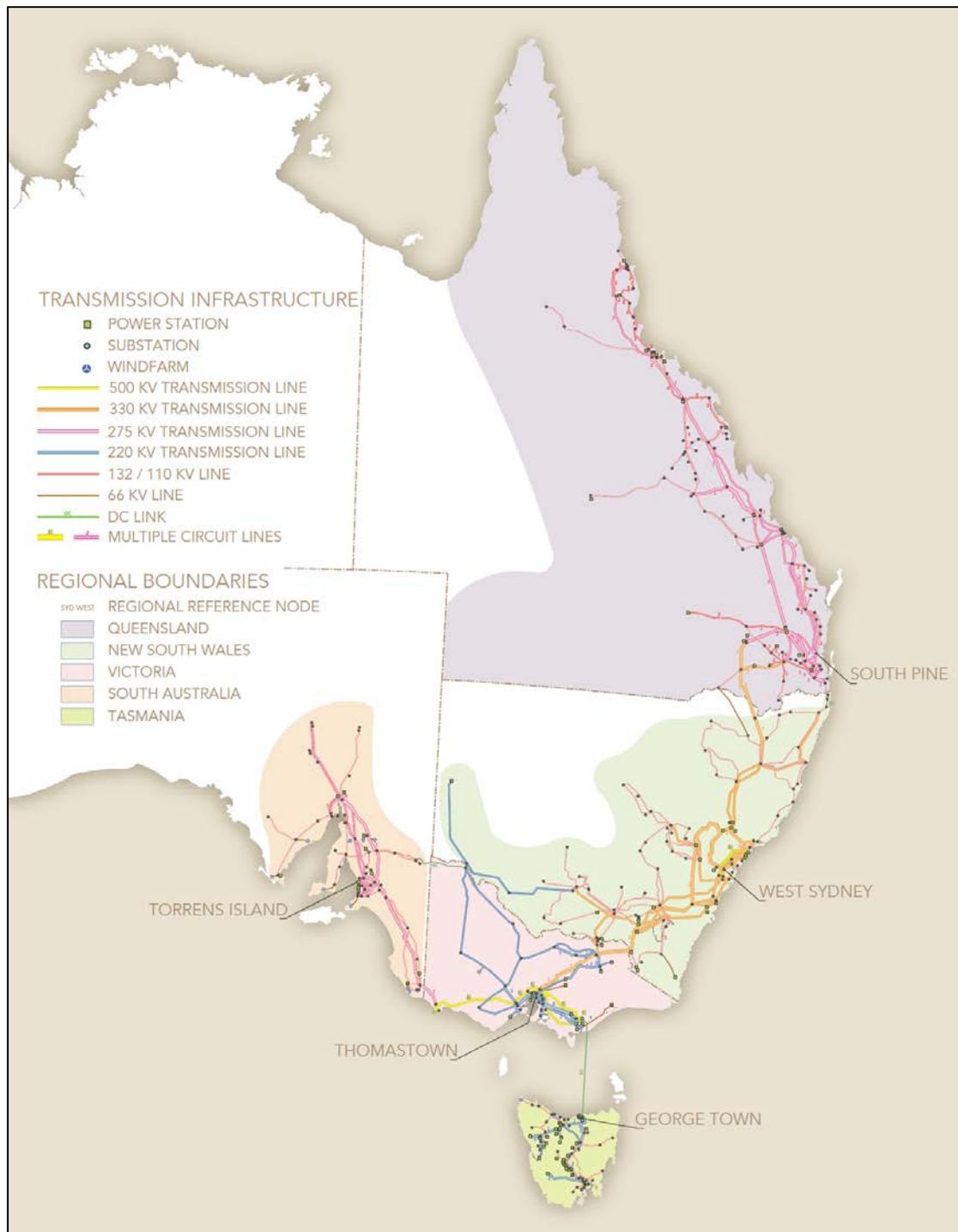
2.19 As mentioned above, the market commenced operation in December 1998 and physically links five regions—Queensland, NSW (including the ACT), Victoria, South Australia and Tasmania—by an interconnected transmission network (Figure 2.1).¹⁶

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 Market¹⁷



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.

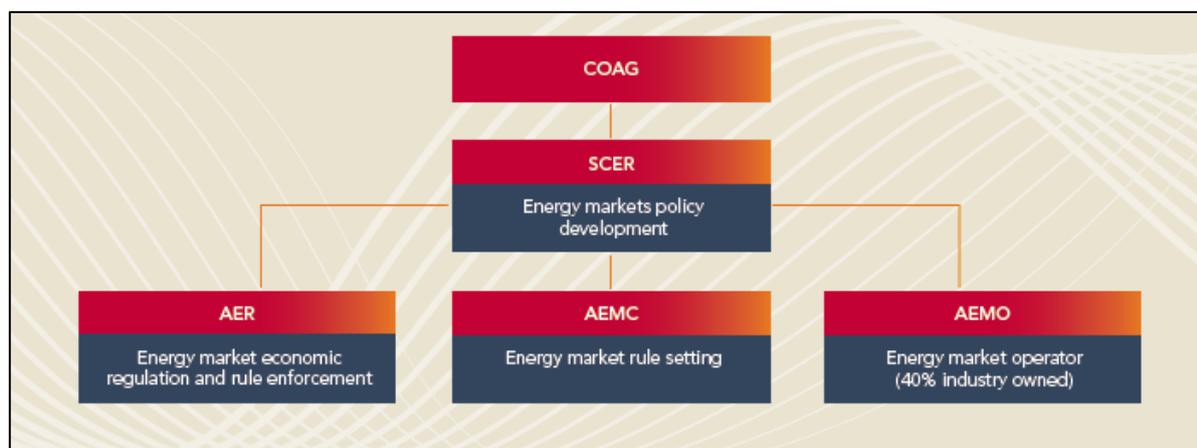
2.21 The NEM has a registered capacity of 49 110 megawatts (MW).¹⁹ There are 305 registered generators in the NEM who service nine million customers.²⁰

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 Market²²



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 use⁵³

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 10¹⁵ 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, 1981–2011⁶⁶

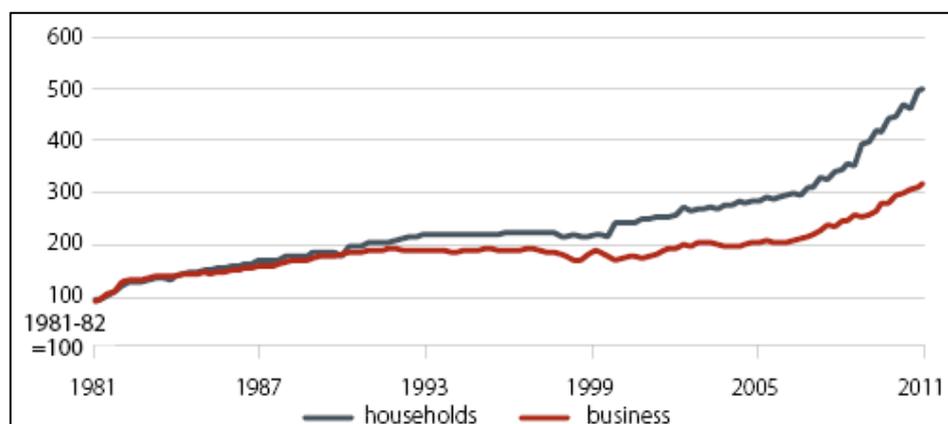
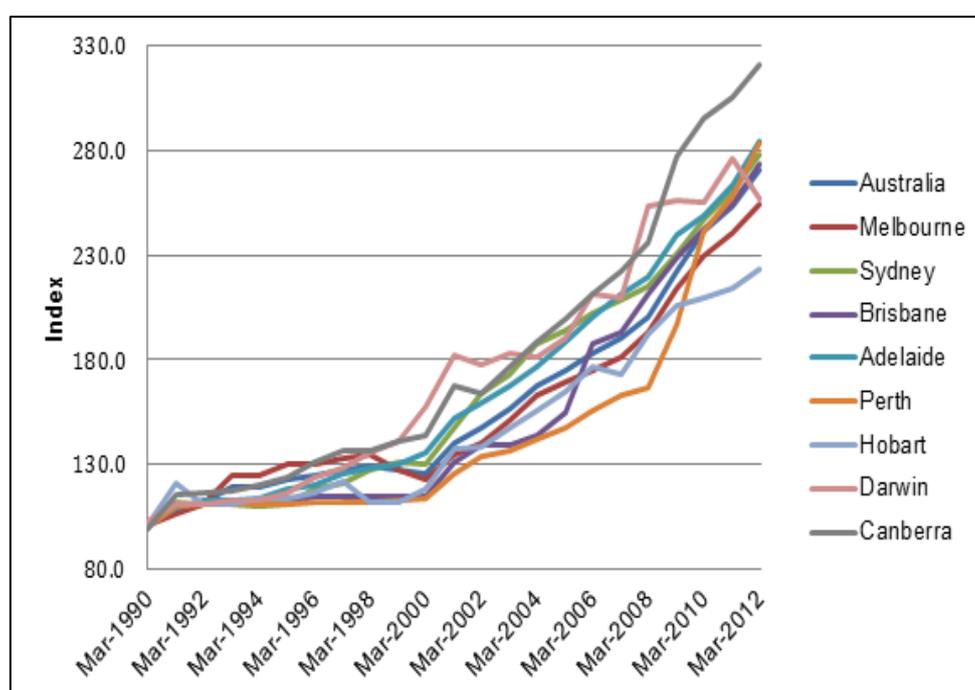


Figure 2.5: Australian capital cities electricity price indices⁶⁷



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

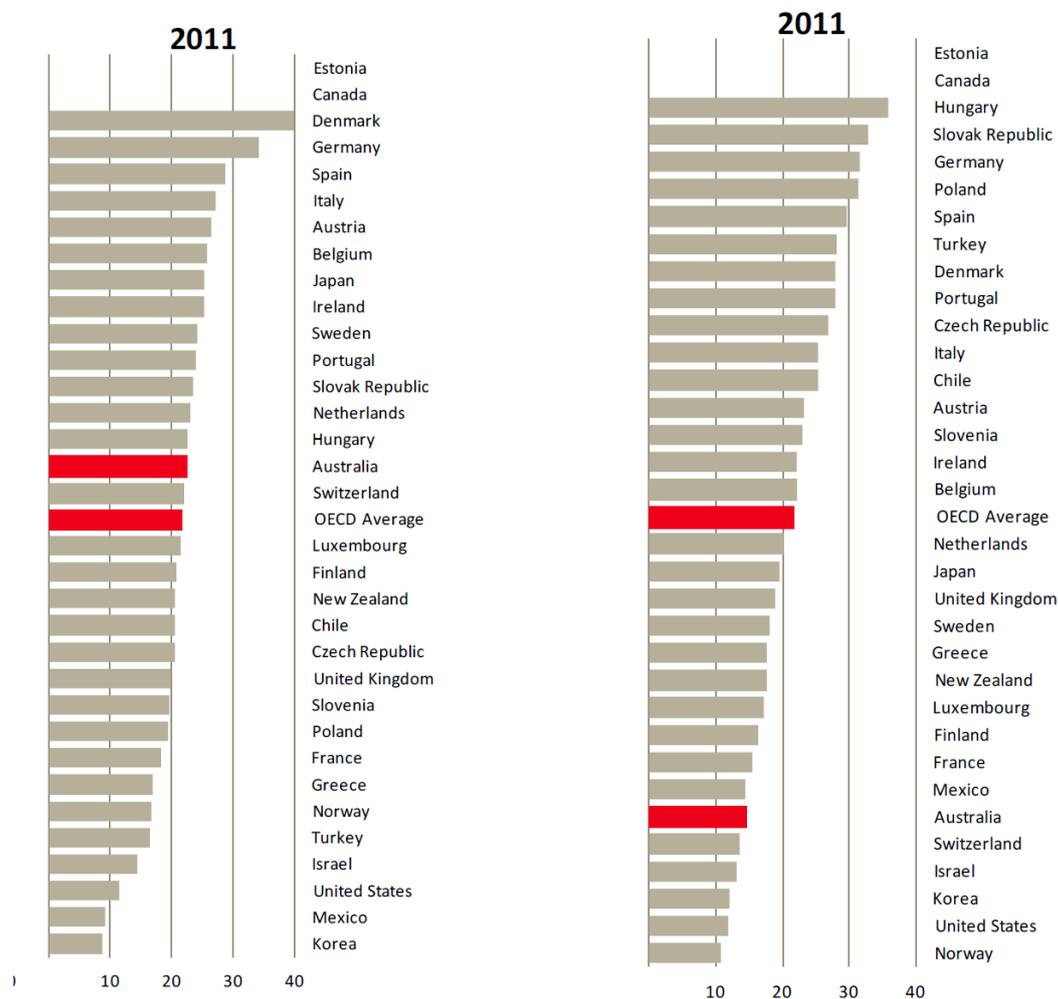
70 DRET, *Answer to question on notice*, 25 September 2012, p. 2.

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

Figure 2.4: Household electricity prices in OECD economies, 2010⁷²

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.