

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.

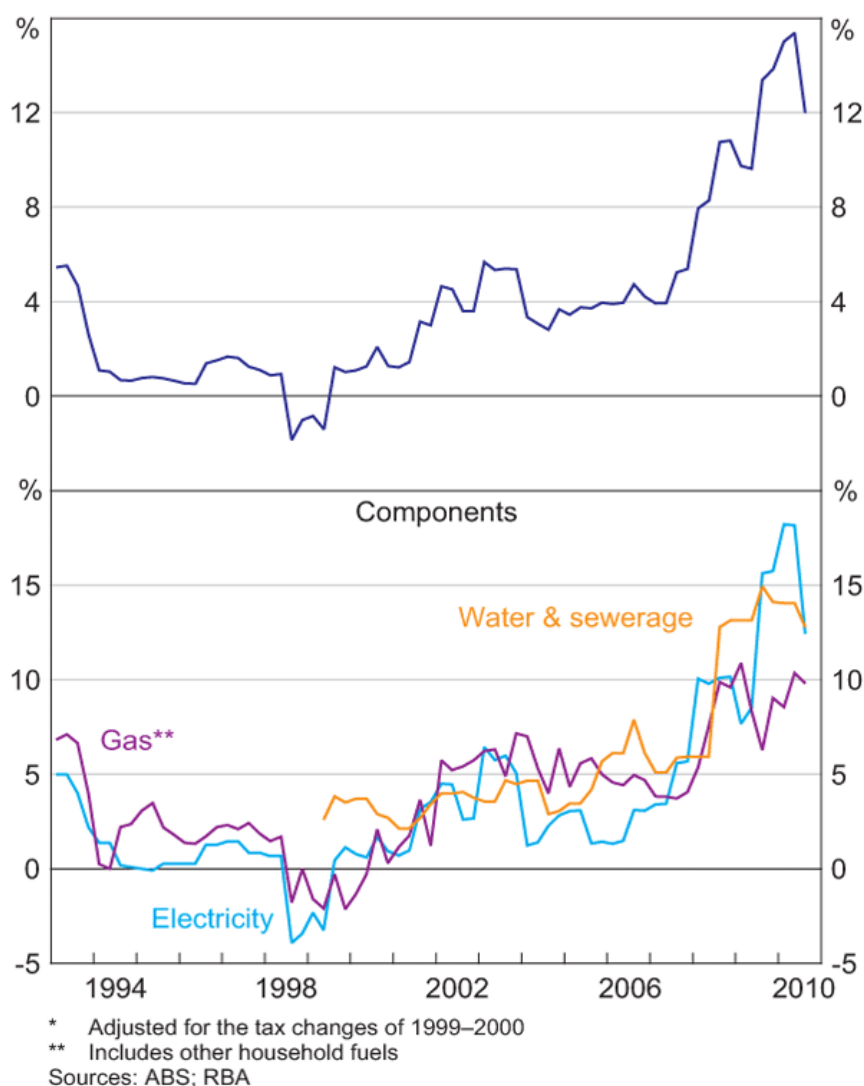
4 AER, *State of the Energy Market 2011*, p. 7.

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 inflation⁸



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:

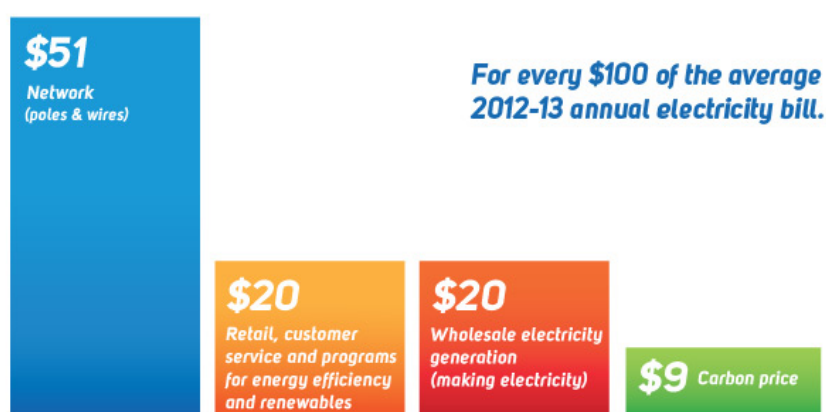
In my view, there was no good public policy reason for this large increase in prices. It happened because of the way we chose to regulate prices. Contributions to the price increases were made across transmission, distribution and retail. Generation has not been contributing much to the increases. Indeed, 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 2012–13¹⁰



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.

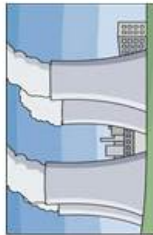
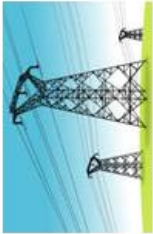


11 Australian Energy Market Commission (AEMC), *Retail electricity price estimates 2010-2011 to 2013-2014*, December 2011, p. 2.

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

Possible causes of electricity price increases	Generation	Transmission	Distribution	Retail
Markets and market power	 <ul style="list-style-type: none"> General investment boom / surge Gas for peak demand Withholding supply Price volatility 	 <ul style="list-style-type: none"> Peak demand (e.g. aircon) requiring more capacity Withholding transmission Overestimated demand forecasts 	 <ul style="list-style-type: none"> Billing and marketing Hedging Generation ownership Price volatility 	
Business and investment issues	<ul style="list-style-type: none"> Opportunistic profit taking Cost of capital following the global financial crisis Labour prices and executive salaries Fuel prices & access 	<ul style="list-style-type: none"> Opportunistic profit taking Cost of capital following the global financial crisis Labour prices and executive salaries Gold-plating 	<ul style="list-style-type: none"> Opportunistic profit taking Cost of capital following the global financial crisis Labour prices and executive salaries Gold-plating 	<ul style="list-style-type: none"> Metering (inc. smart)
Technical and reliability requirements	<ul style="list-style-type: none"> Inefficiencies in resource allocation Enhanced service standard requirements Replacement of assets after their useful life Recovery from a long period of underinvestment 	<ul style="list-style-type: none"> Undergrounding 	<ul style="list-style-type: none"> Undergrounding 	<ul style="list-style-type: none"> Metering (inc. smart)
Policy and regulatory settings	<ul style="list-style-type: none"> Carbon Tax 	<ul style="list-style-type: none"> Dividend extraction Greater usage of more expensive renewable energy systems and schemes Incentives to over invest and no counter appeal Revenue caps causing prices rise when demand falls 	<ul style="list-style-type: none"> Dividend extraction Greater usage of more expensive renewable energy systems and schemes Incentives to over invest and no counter appeal Revenue caps causing prices rise when demand falls 	<ul style="list-style-type: none"> Lack of competition Cross subsidy unwinding

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 both 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 sharply⁵³ 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

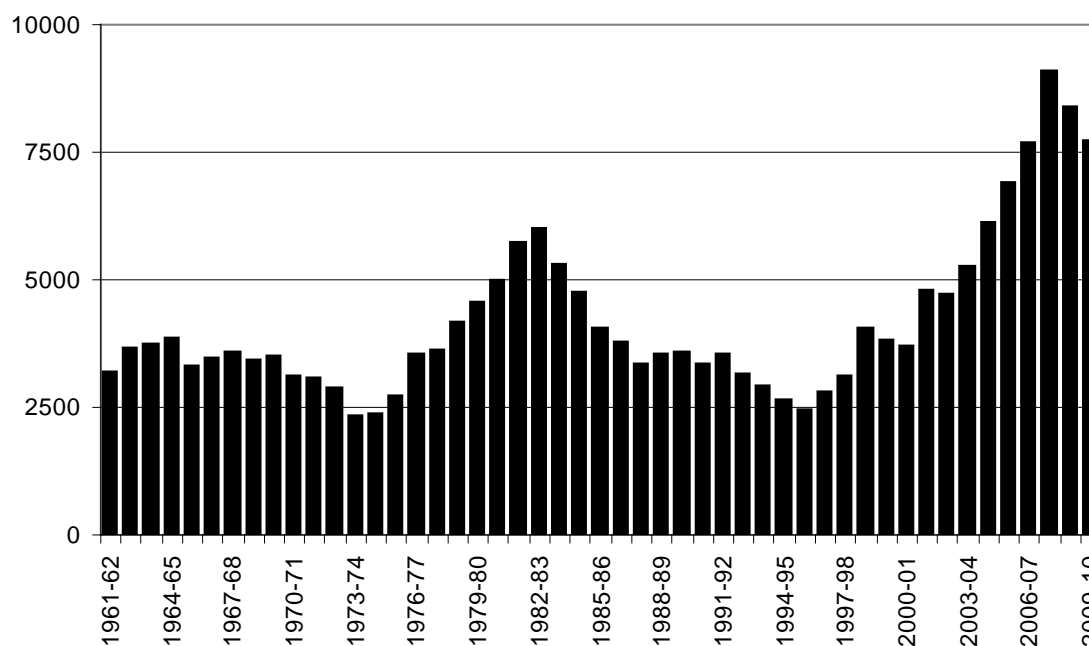
61 Mr Darren Busine, Acting Chief Executive Officer, Energex Limited, *Proof Committee Hansard*, 3 October 2012, p. 27.

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 dollars⁶⁵



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.

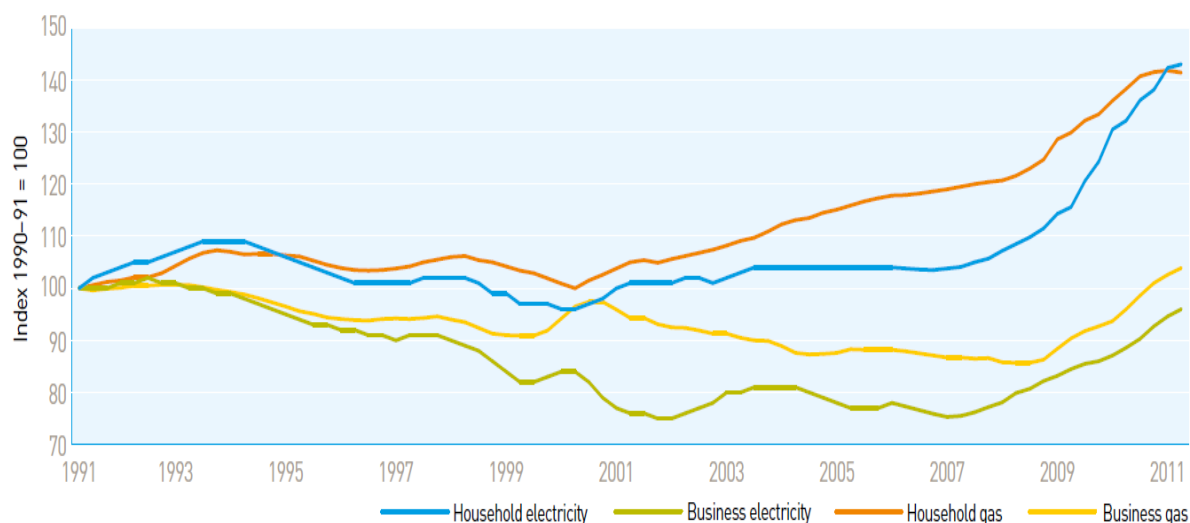
73 DRET, *Fact Sheet: Electricity Prices*, August 2012, p. 2.

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

Electricity and gas retail price index (real)—Australian capital cities



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

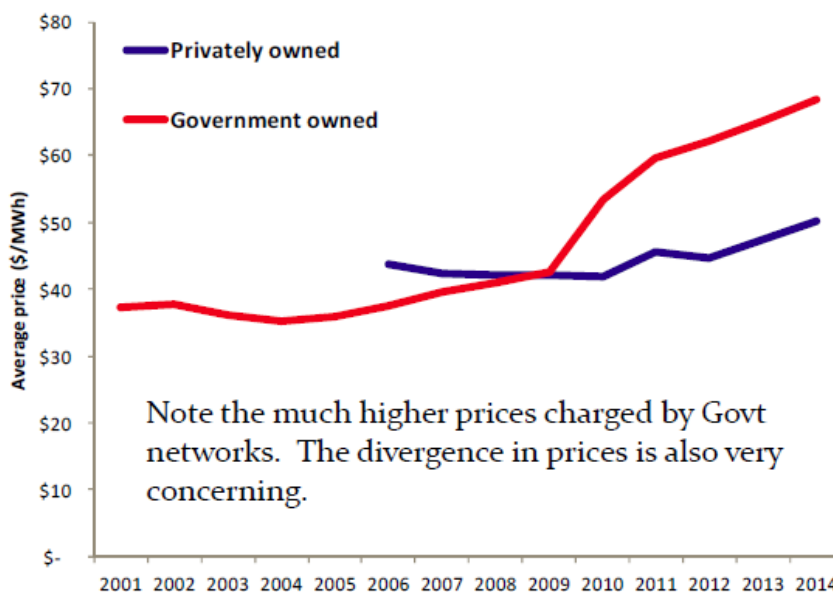
3.71 A presentation recently delivered by the Energy Users Association of Australia (EUAA) Executive Director highlighted the discrepancies in distribution prices between private and government owned entities as shown in Figure 3.6.

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 prices⁹³



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 Revenue⁹⁵

	2010-11	2011-12	2011-12	2012-13	2013-14	2014-15	2015-16
	Actual	Budget	Revised	Budget	Forward estimates		
	\$m	\$m	\$m	\$m	\$m	\$m	\$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	2011-12	2011-12	2012-13	2013-14	2014-15	2015-16
	Actual	Budget	Revised	Budget	Forward Estimates		
	\$m	\$m	\$m	\$m	\$m	\$m	\$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 dividends⁹⁸

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 cent¹⁰⁵ and that appears to be occurring in practice: witnesses cited figures of six,¹⁰⁶ 9.5,¹⁰⁷ 10¹⁰⁸ 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 revenue¹²⁰

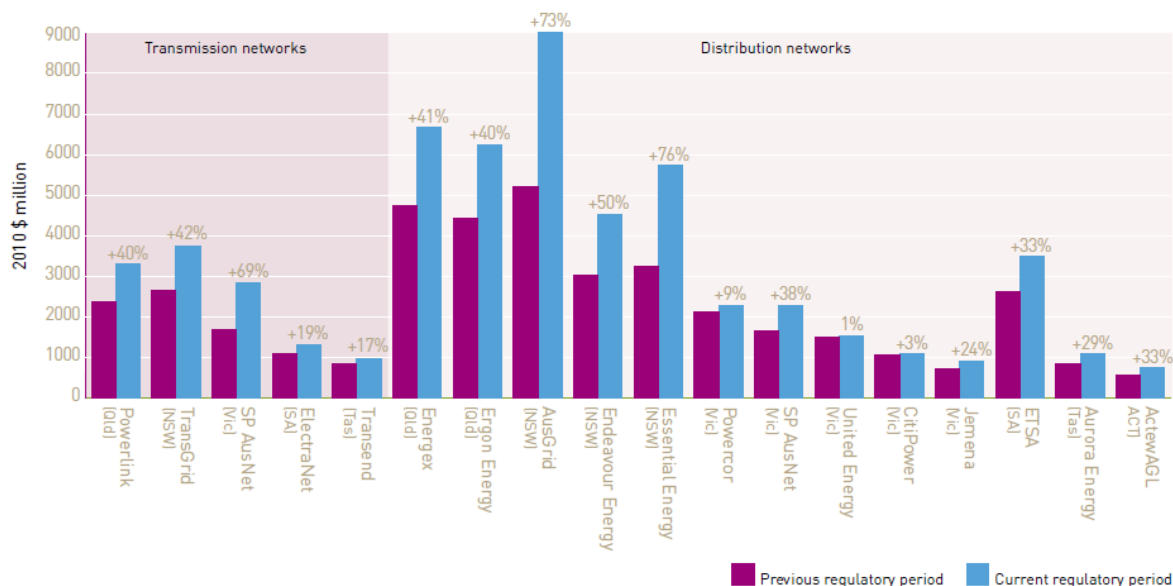
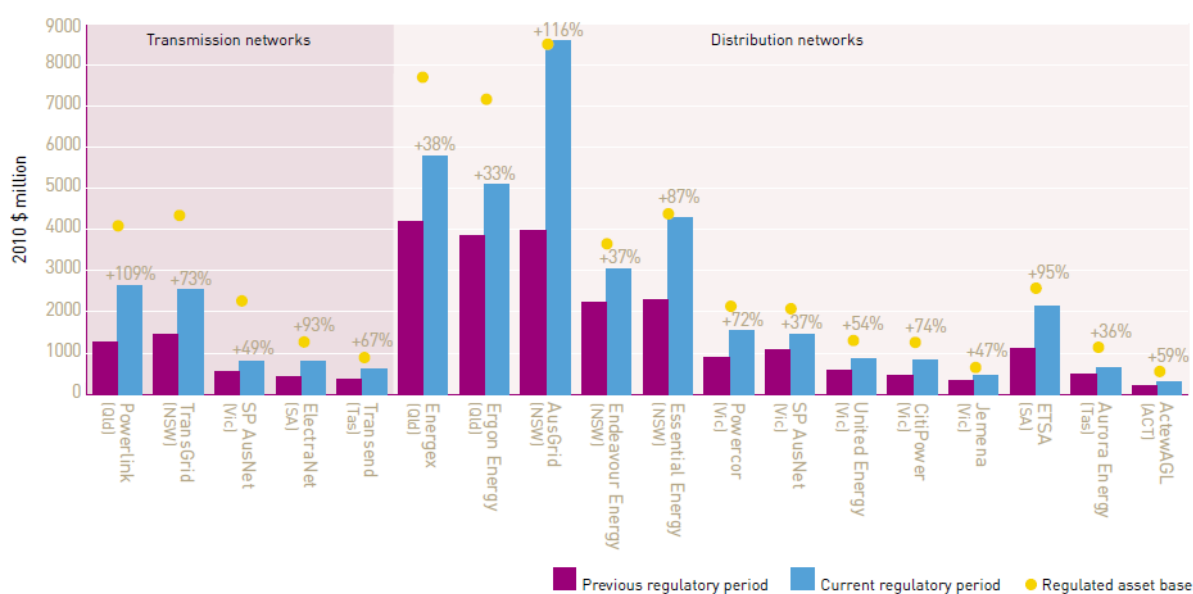


Figure 3.11: Energy network investment¹²¹



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 Laochumanvanit, 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.

