

24 September 2012

Ms Sophie Dunstone  
Committee Secretary  
Senate Select Committee on Electricity Prices  
Parliament House  
CANBERRA ACT 2600

Dear Ms Dunstone

**Response to Questions on Notice from the Senate Select Committee on Electricity Prices**

The Department of Resources, Energy and Tourism welcomes the opportunity to provide responses to the Senate Select Committee on Electricity Prices Questions on Notice, as per your email of 7 September.

This should be read in conjunction with the Department's formal submission to the Committee of 18 September.

Yours sincerely,

Brendan Morling  
Head  
Energy Division

## Questions on Notice – Senate Select Committee on Electricity Prices

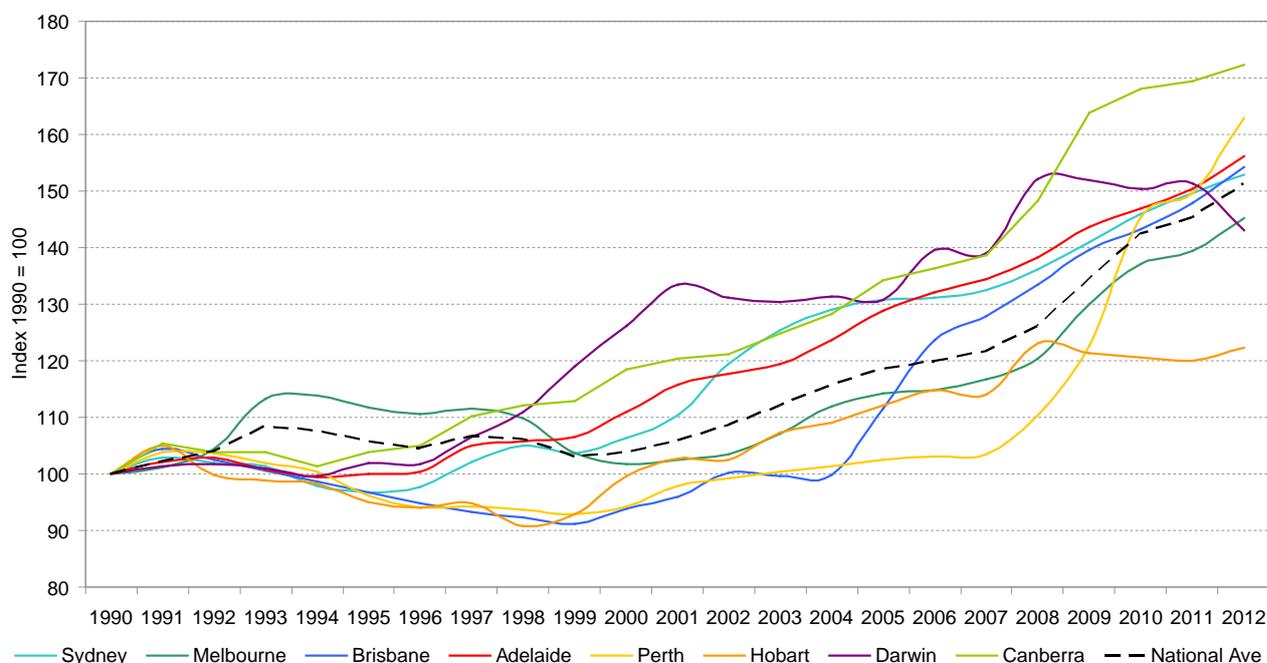
1. Have other utilities including, but not limited to water, sewage, gas, household fuels, communications, and postal services experienced similar or different price rises to electricity in recent years?
  - a. Where there are similarities, what drivers are contributing to those increases across multiple utilities?
  - b. Where there are differences, what are the reasons for the differences?

The Department does not have data on the similarities or otherwise between the different utilities and has no particular role or experience outside of energy markets, but would make the observation that these utilities are providing very different services and therefore may not be readily comparable.

### Gas

Household gas prices have also risen in recent years, although not to the same extent as electricity prices. Over the past 3 years, household gas prices averaged across Australia have risen by around 24 per cent (in nominal terms).<sup>1</sup> As shown below, there has been a steady upward trend in gas prices over the past decade, partly accounted for by the unwinding of historical cross-subsidies from business to household customers.

#### **Retail gas price index (inflation adjusted) – Australian capital cities<sup>2</sup>**



<sup>1</sup> Australian Bureau of Statistics (2012). Consumer price index, Cat. No. 6401.0.

<sup>2</sup> Australian Bureau of Statistics (2012). Consumer price index, Cat. No. 6401.0.

Rising wholesale energy costs and pipeline distribution costs have been the main drivers of upward pressure on retail gas prices.

Some similarities may exist between the cost pressures facing retail electricity and gas prices. These include rising wholesale energy costs, in part due to international pricing linkages to fuel costs and carbon pricing. Rising capital expenditure requirements for distribution infrastructure is another common factor, related to asset replacement and expansion needs and increasing material and labour costs.

### Water and sewerage

The Department understands water and sewerage management is primarily the responsibility of state and territory governments, through water utilities and local governments. Water charging in Australia is subject to different price setting processes in different areas of Australia. Under the National Water Initiative (NWI), Australian governments agreed to implement a set of pricing principles to ensure efficient and sustainable water pricing. In many cases pricing determinations are made by independent regulators that apply best practice pricing principles in consultation with industry, government and stakeholders.

The most recent Australian Bureau of Statistics (ABS) Consumer Price Index report of 25 July 2012, relating to urban water pricing, states that over the twelve months to the June quarter 2012, the housing group rose 3.4 per cent with water and sewerage rising 9.3 per cent. This is in comparison to the twelve months to the June quarter 2011 which stated a rise in the housing group of 4.6 per cent with water and sewerage rising 12.8 per cent.

Water prices are affected by many factors including capital and operating costs which include electricity. They are also affected by factors such as drought, urban population growth and ageing assets.

### Communications

The Department understands average real prices for all telecommunications services decreased by 6.0 per cent in 2010–11, and were 17.9 per cent lower compared to 2006–07.<sup>3</sup>

### Postal Services

The Department understands Australia Post's basic postage rate has increased by less than electricity charges in recent years, with the stamp prices rising to \$0.50 in January 2003, to \$0.55 in September 2009 and \$0.60 in June 2010.<sup>4</sup>

### Household expenditure data

In addition to the data presented above, the Australian Bureau of Statistics' Household Expenditure Survey (HES) data may be useful in analysing household expenditure on particular utilities and services. However, this data represents household expenditure and not supply

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<sup>3</sup> ACCC (2012). Changes in prices paid for telecommunications services in Australia, 2010–11: Report to the Minister for Broadband, Communications and the Digital Economy. [www.accc.gov.au/content/index.phtml/itemId/1060713](http://www.accc.gov.au/content/index.phtml/itemId/1060713)

<sup>4</sup> Australia Post website. [www.auspost.com.au](http://www.auspost.com.au)

costs so caution should be taken in making any such comparisons. This ABS HES data can be found at [www.abs.gov.au/ausstats/abs@.nsf/mf/6530.0/](http://www.abs.gov.au/ausstats/abs@.nsf/mf/6530.0/).

- 2. To what extent have the household electricity price rises since 2007 been driven or influenced by key inputs to the electricity system? In particular, would the department please provide:**
- a. Yearly or quarterly historical information (e.g. 1980 to the present) on the following and any other relevant electricity generation input costs and the extent to which they influence generation costs and therefore wholesale electricity prices:**
    - i. coal prices;**
    - ii. gas prices;**
    - iii. to what extent are the new or replacement systems imported and therefore exposed to the Australian dollar increasing and remaining high since 2007;**
    - iv. labour costs; and**
    - v. financing costs (including debt and hedging arrangements)?**
  - b. Yearly or quarterly historical information (e.g. 1980 to the present) on the following and any other relevant electricity network (transmission & distribution) input costs and the extent to which they influence network charges:**
    - i. to what extent are the new or replacement systems imported and therefore exposed to the Australian dollar increasing and remaining high since 2007;**
    - ii. labour costs; and**
    - iii. financing costs (including debt and hedging arrangements)?**

While the Department does not have the detailed data sets requested, particularly on non-fuel input costs and actual prices paid by generators, it has provided a description on the drivers of electricity price rises in its submission to the Committee. In summary, the household electricity bill covers wholesale electricity generation costs, transportation of electricity through the networks, and retail services including organising the purchase and sale of electricity to consumers. Changes in any of these costs should (subject to retail price regulation practices) affect the billing price that consumers pay for electricity.

The Australian Energy Market Commission (AEMC) estimates that transmission and distribution network costs represented around 43.5 per cent of the national average household electricity price in 2012–13, with wholesale electricity prices representing a further 35.6 per cent.<sup>5</sup>

#### Australia's electricity generation

Generators in eastern states sell into a pooled wholesale market, with the pooled price being determined by Australian Energy Market Operator (AEMO) as the minimum necessary to ensure sufficient generation is dispatched. All generators (regardless of the price they bid) receive the same price (as the last dispatched generation unit), which rises as more costly generation has to be dispatched to meet demand.

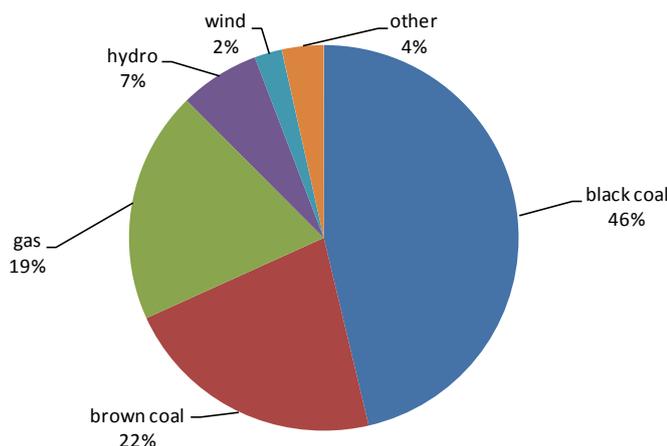
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<sup>5</sup> AEMC (2011). Final Report: Possible Future Retail Electricity Price Movements: 1 July 2011 to 30 June 2014.

Most of Australia’s electricity is produced using coal, which accounted for 68 per cent of total electricity generation in 2010–11. This is because coal is a relatively low cost energy source in Australia. It also reflects the abundance of coal reserves along the eastern seaboard, where the majority of electricity is generated and consumed.

Gas is Australia’s second largest energy source for electricity generation, accounting for 19 per cent of electricity generation in 2010–11. Renewable energy sources, mainly hydroelectricity, wind and bioenergy, accounted for around 9 per cent of the electricity generation mix in 2010–11.

**Figure 1: Australia’s electricity generation, by energy source, 2010-11<sup>a</sup>**



*a: Other includes oil, bioenergy and solar PV.*

*Source: BREE 2012, Australian Energy Statistics, Table O.*

### Prices for fuel inputs used in power generation

The cost of fuel will influence bids of different types of generators, which would be expected to eventually flow through to consumers. It would, however, take a very large change in fuel price to have a noticeable impact on bids (fuel being only one cost of a power station), and in turn market outcomes (given competition from other generators), and subsequently consumer prices (which are only partly driven by wholesale costs, and are often regulated).

Historically, fuel used in power generation in Australia has been relatively low cost by global standards. The Department does not know the actual prices paid for fuel by generators. Prices for non-renewables fuel inputs used in power generation in eastern Australia have been dominated by long-term, highly customised bilateral supply contracts entered into on an infrequent basis with a limited number of end-users. Invariably, these contracts are highly confidential.

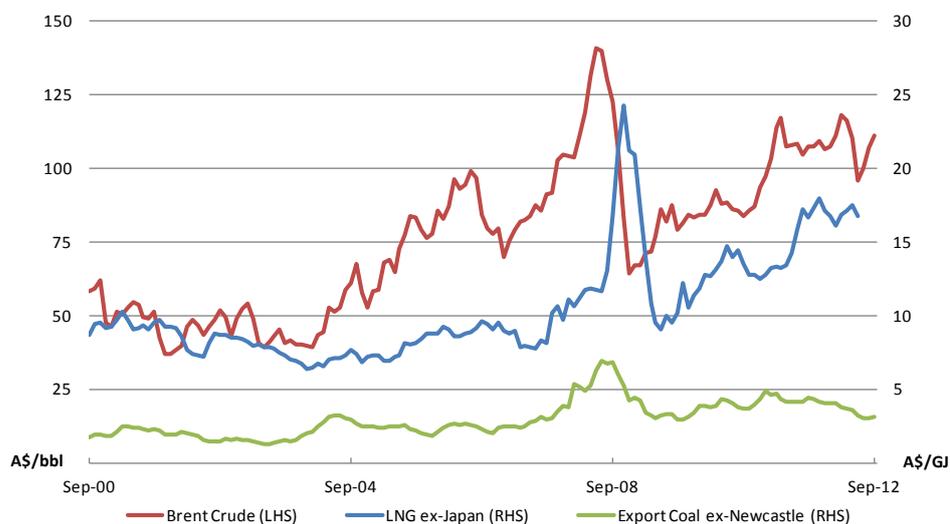
In general, it has been reported that Australia’s thermal coal (i.e. coal used in power generation) has been supplied by way of long-dated, fixed-price contracts to domestic power stations for less than \$1.30/GJ or about \$30/t in real terms<sup>6</sup>. Transactions of this nature underpinned a rapid expansion of thermal power in Australia, in particular, throughout the late 1970s, 1980s and early 1990s.

<sup>6</sup> Simshauser, P and Nelson, T (2012) ‘The Energy Market Death Spiral - Rethinking Customer Hardship, Working Paper No.31 – Death Spiral’, AGL Applied Economic and Policy Research, AGL Energy Ltd, p. 3

By the mid-2000s, gas was similarly in abundance relative to domestic demand which gave rise to low cost Gas Supply Agreements that were common with pricing typically below \$3/GJ (for unity load factor) gas supplies<sup>7</sup>.

In comparison to contractual agreements for thermal coal and gas in Australia, Figure 2 shows the trade prices for non-renewables fuel inputs used in power generation. Monthly Brent Crude oil prices are currently trading at around US\$111/bbl, coal (ex-Newcastle) at around \$3.10/GJ and LNG at about \$17.00/GJ.

**Figure 2: Commodity prices, 2000 to 2012**



Sources: BREE; Bloomberg

<sup>7</sup> Simshauser, P and Nelson, T (2012), op.cit., p.3

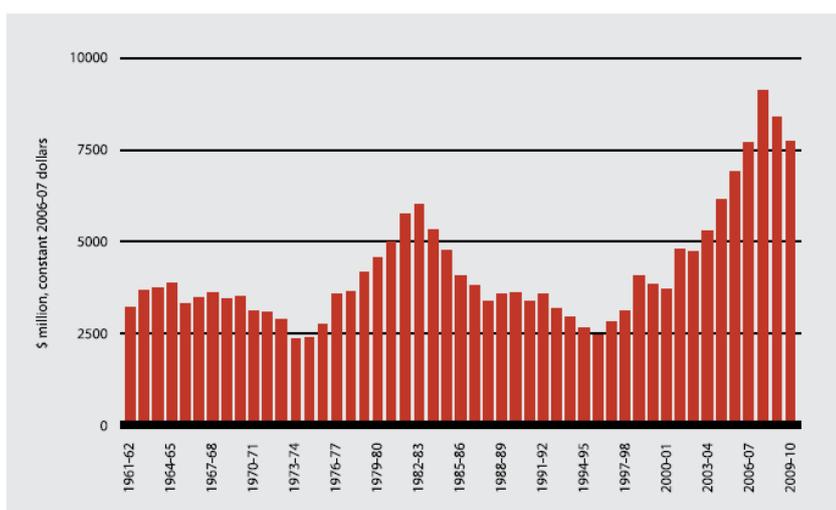
3. The Department’s August 2012 fact sheet on electricity prices indicates that asset replacement and reliability and quality of service enhancements account for significant proportions of household electricity price rises. Would the department please provide the committee with information on how the rate and costs of assets replacement has varied over time. For example, has the annual rate of pole replacement changed significantly, or has the cost of pole replacement changed significantly. Please include relevant electricity asset types, including, but not limited to poles, wires, meters, transformers, generators, and control systems.

The Department does not have access to detailed information on specific assets or the rate and cost of network asset replacement over time. This information is primarily located within the different distribution businesses as asset managers, who are generally represented by the Energy Networks Association (ENA). Data on asset replacement is submitted in varying forms to the Australian Energy Regulator (AER) to support applications for regulatory determinations.

As noted in the Department’s submission to the Committee, investment in energy infrastructure has a large cyclical element as ageing assets need to be replaced (see Figure 3). The recent increase in infrastructure investment is in response to the need to replace ageing assets, meet rising demand and enhanced reliability settings. Comparing the cost of the larger assets (e.g. substations) with their predecessors may not be useful as the technology in these assets may have changed and requirements for their performance may be very different.

As noted by the ENA in its submission to the Committee, the energy sector is going through a significant phase of investment as “the average age of network assets is 28 years. The need to replace ageing assets has been most pronounced in New South Wales and Queensland, reflecting the relative age of their assets. In 2006, for example, many of Ausgrid’s assets were approaching or beyond their standard life: 23 per cent of transmission substations and 15 per cent of overhead and underground transmission feeders were beyond their standard life.”<sup>8</sup>

**Figure 3: Electricity supply - Real capital investment, 1961-62 to 2009-10**



<sup>8</sup> ENA submission to the Senate Select Committee On Electricity Prices, 2012, p10-11

*Source: Topp, V and Kulys T, Productivity in Electricity, Gas and Water: Measurement and Interpretation, Productivity Commission Staff Working Paper, March 2012 p52*

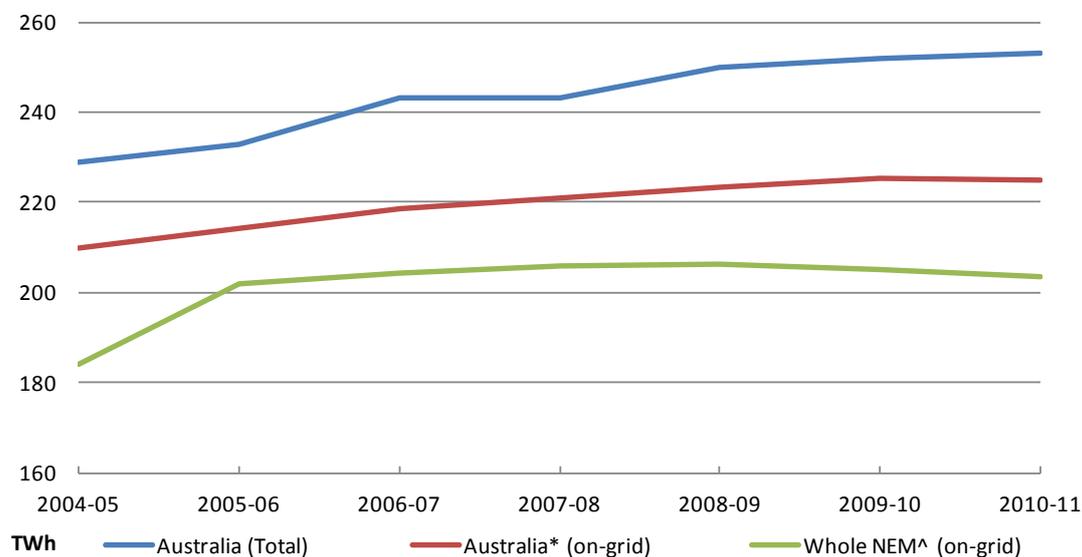
**4. The Energy in Australia 2010 - 2012 reports indicate that Australia’s total electricity generation has been relatively stable at around 220 – 230 TWh between 2004-05 and 2009-10. Does that indicate that overall demand was relatively constant and therefore was not a driver of household electricity prices? Has there been an increase in peak demand for electricity over the same period and how has this affected retail electricity prices?**

Australia’s total electricity generation has been relatively stable increasing at around 1.4 per cent, on average, a year between 2004–05 and 2010-11. However, peak demand between 1999 to 2011 has increased on average by around 2.9<sup>9</sup> per cent, noting that the rate of peak demand growth has slowed since 2010. In order to meet reliability requirements, network and generation infrastructure must be built to ensure sufficient capacity in the system to meet demand for these infrequent high demand periods. Therefore it is peak demand more so than total demand that drives a significant proportion of investment in new infrastructure, in addition to other drivers such as new connections and the replacement of aging assets for example.

Around 253 terawatt hours of electricity (or around 900 petajoules), including off-grid electricity, was generated in Australia in 2010–11. Off-grid electricity generation has been increasing rapidly, largely driven by growth in the mining sector (Figure 4).

The Energy Supply Association of Australia (ESAA) report that total on-grid electricity generation for Australia also increased at an annual average rate of 1.4 per cent between 2004–05 and 2010-11<sup>10</sup>. However, on-grid electricity generation in the National Electricity Market (NEM) declined by 0.5 per cent, on average, a year between 2008–09 to 2011-12.

**Figure 4: Australian electricity generation**



*Notes: Australia (Total) = Total Australian electricity generation, including off-grid electricity; \* Total electricity generation for Australia, excluding off-grid electricity; ^ whole of NEM (on-grid) electricity generation.*

Source: BREE 2012, Aust. Energy Statistics, Table O; Electricity Gas Australia, esaa; NEM Review Database

<sup>9</sup> AER (2012). State of the Energy Market 2011. [www.aer.gov.au/node/6311](http://www.aer.gov.au/node/6311)

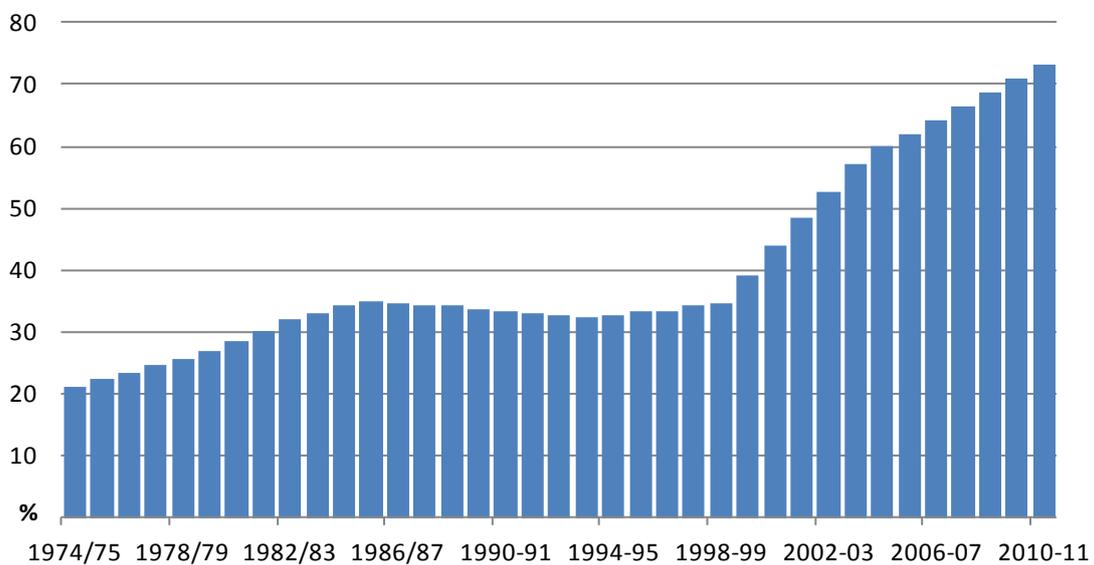
<sup>10</sup> Electricity Gas Australia, ESSA

## Peak demand

As noted in the Department’s submission to the Committee, over the past decade there has been a shift in the pattern of demand for energy, reflecting changes in lifestyle, household incomes and population growth. Demand for energy has fluctuated significantly as a result of seasonal variation (heating for winter and cooling for summer) (see Figures 6, 7 and 8) and improved life style of households (measured in average area per household or resident) that has influenced household energy consumption (Figure 5).

The ownership and use of household appliances has increased (Figure 5), with their use typically occurring during peak times (early morning and evening). This has contributed to the increasing incidence of short bursts of demand that have placed pressure on the network. This trend is generally attributed to growing penetration and ownership of air-conditioners, particularly in the residential sector. As a result, seasonal patterns and weather conditions affect the use of these appliances and hence frequency and magnitude of these peaks.

**Figure 5: Australian homes with an air-conditioner or evaporative cooler**



Source: Productivity Commission estimates derived from ABS (*Environmental Issues: Energy Use and Conservation*, Cat. no. 4602.0.55.001, March 2011) and *Energy Efficient Strategies* (2006).

Table 1 presents the number of days with peak (maximum) demand above a threshold of 30 gigawatts, in the NEM. In 2008–09, the weather conditions were most extreme compared with 2009–10 to 2011–12 with maximum demand for electricity within the NEM rising above 30 gigawatts on 65 occasions (21 days in summer and 44 days in winter). In 2011–12, peak demand days for electricity were less frequent than the previous three years with maximum demand exceeding 30 gigawatts on 17 occasions (1 occasion in summer and 16 occasions in winter).

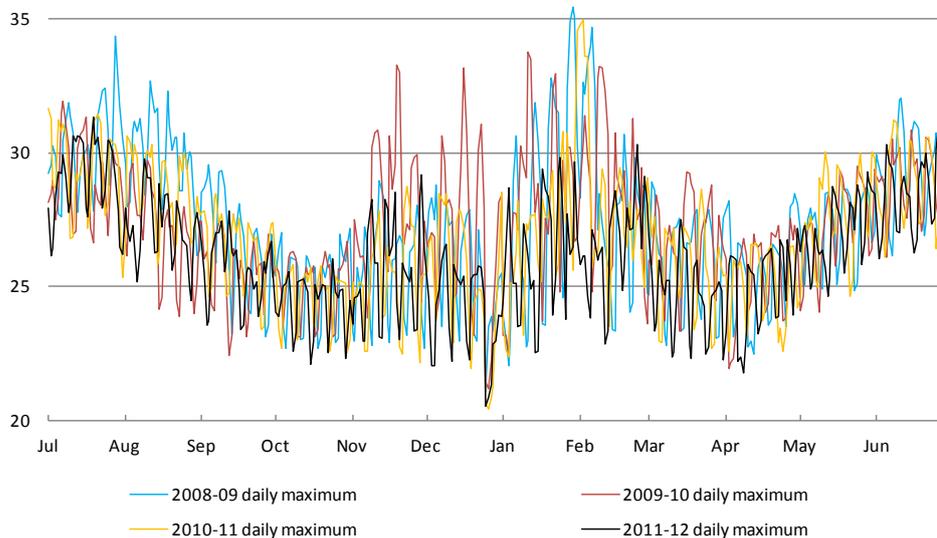
**Table 1: Number of days with peak (maximum) demand above 30GW, National Electricity Market**

	2008-09 Days above 30GW	2009-10 Days above 30GW	2010-11 Days above 30GW	2011-12 Days above 30GW
Year total	65	45	37	17
Summer	21	21	7	1
Winter	44	17	28	16

Source: BREE; NEM Review Database.

Figure 6 illustrates a number of features of peak daily demand, including that peak daily demand is typically lower on weekends compared with weekdays, and is generally lower during milder seasons (spring and autumn) compared with the more extreme seasons (winter and summer).

**Figure 6: Peak (maximum) daily electricity demand in the NEM**



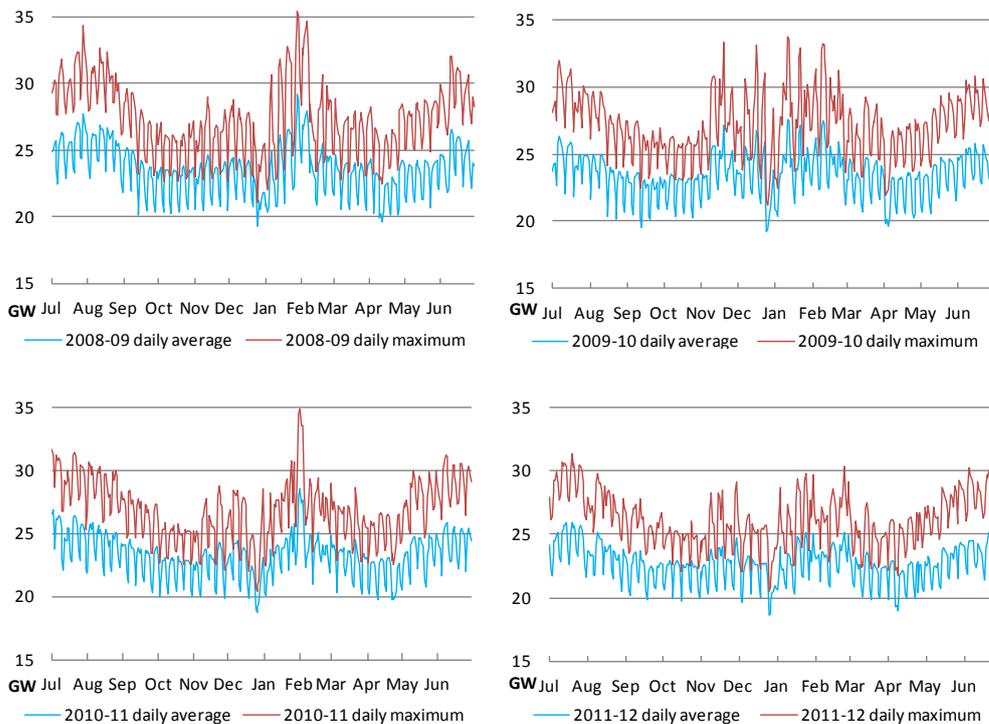
Source: BREE; NEM Review Database.

Figure 7 presents a comparison of peak (maximum) demand and average demand for electricity in the NEM. While the average demand for electricity has not changed dramatically over the past four years, the magnitude of the peaks is generally getting larger. Weather conditions were comparatively moderate in 2011–12 compared with 2008–09 to 2010–11 which is reflected in the size of the peaks.

Figure 8 illustrates the deviation of peak (maximum) demand for electricity from average demand. The differences between the magnitude of the peaks and average demand exhibit less variation in 2011-12 than over the period 2008-09 to 2010-11. That is to say, peakiness of maximum electricity demand is strongly associated with climatic conditions which were comparatively moderate in 2011-12 compared to 2008-09 to 2010-11.

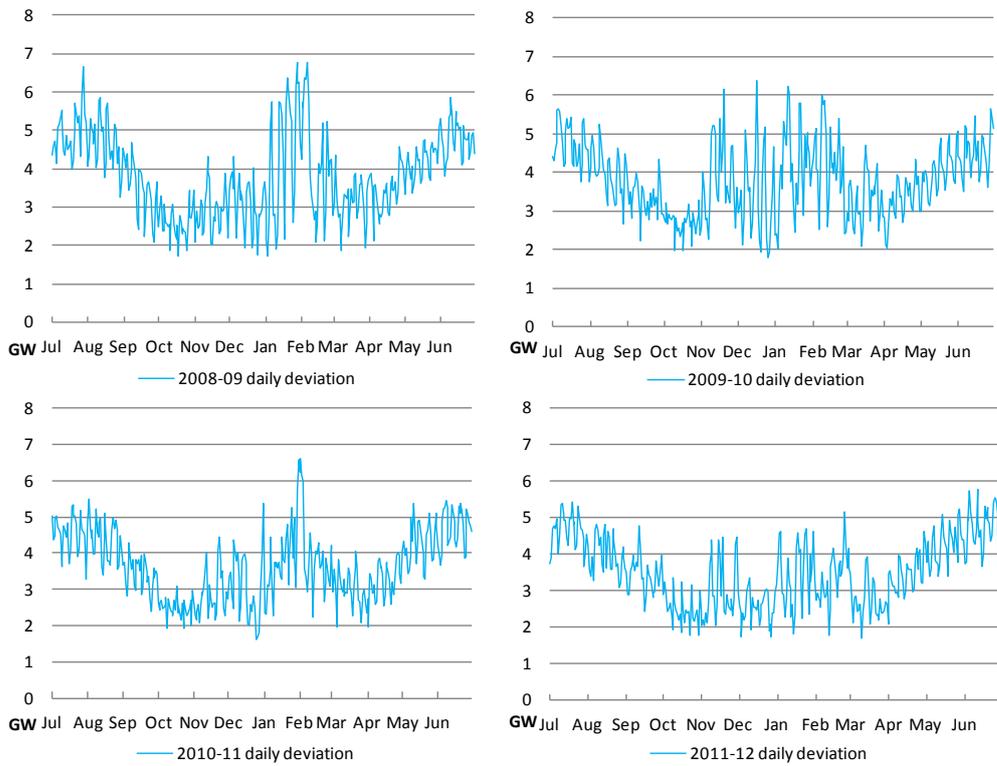
The comparatively extreme weather conditions in 2008-09 which coincided with a large number of occurrences of peak demand highlights that peaks are growing in number and magnitude. Capital investment is required in peaking plants to ensure sufficient capacity to meet these peaks. That is to say, the reliability of the electricity generation system is dependent on preparedness for peak demand and investment is required in extra generation capacity to meet peaks in demand. The ability to meet peak demand improves the reliability of the electricity generation system, but results in considerable overcapacity outside of peaks.

**Figure 7: Peak (maximum) versus average daily electricity demand in the National Electricity Market**



Source: BREE; NEM Review Database.

**Figure 8: Deviation of peak (maximum) demand from average daily electricity demand in the National Electricity Market**



Source: BREE; NEM Review Database.

**5. The retail electricity price increases over the past two decades in capital cities connected to the National Electricity Market (NEM), appear to have increased more than those not connected to the NEM (Perth and Darwin) for which price remained constant during the period 2000 to 2007 (see Australian Bureau of Statistics consumer price indices, 6401.0 table 11 for example). What is the reason for the difference and why did prices in Perth and Darwin start increasing at a similar rate to the NEM states from around 2007-2008?**

It is generally the case that retail electricity prices have increased by more in jurisdictions within the NEM over the past two decades. NEM jurisdictions, in line with energy market reforms over the past two decades, have been moving towards cost reflective electricity pricing which avoids the need for cross subsidisation by jurisdictional governments.

Cost reflective pricing is yet to be achieved in Western Australia (WA) and the Northern Territory (NT). In WA before 2009, regulated household electricity prices had not increased since 1997/98 (excluding GST) and regulated small business electricity prices had not increased since 1991/92 (excluding GST).<sup>11</sup> This led to retail electricity prices in the state set below the costs of supply, requiring the state government to cross subsidise state-owned energy businesses to ensure they remain viable.

More recently, the WA Government has attempted to move electricity prices closer to cost reflectivity. As such, from 2009 the WA Government has increased regulated household and small business electricity prices by 77 per cent and 62 per cent respectively.

Despite these increases, electricity prices in WA are still not yet cost reflective. WA's Economic Regulation Authority (ERA) reported in June 2012 that retailer Synergy's household electricity prices would need to increase by 29 per cent in 2012-13 to achieve cost reflectivity.<sup>12</sup>

In the NT electricity prices also do not reflect the costs of supply. The NT's electricity market is isolated from the NEM, with the supply chain (i.e. generation, distribution and retail) dominated by the NT Government owned and vertically integrated Power and Water Corporation.

Over the period from 2009-10 to 2012-13, regulated household electricity prices in the NT increased by 39.6 per cent as the NT Government tried to ensure prices more closely reflect supply costs.<sup>13</sup> However, the NT's electricity prices are still not cost reflective - the AEMC estimates that NT householders pay around 24 to 26 per cent less than the cost reflective price of electricity.<sup>14</sup>

The NT Government subsidises the cost of electricity (and water) to households and small businesses through the provision of a \$63 million Community Service Obligation payment to the Power and Water Corporation. This equates to an average annual subsidy of \$820 per connection or \$15.38 per week.<sup>15</sup> This subsidy is already included in electricity (and water) tariffs meaning they do not reflect the true costs of supply.

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<sup>11</sup> WA Department of Finance (2012). [www.finance.wa.gov.au/cms/content.aspx?id=15096](http://www.finance.wa.gov.au/cms/content.aspx?id=15096)

<sup>12</sup> ERA (2012). Final Report: Synergy's Costs and Electricity Tariffs. [www.erawa.com.au/1/1165/46/inquiry\\_into\\_the\\_efficiency\\_of\\_synergys\\_costs\\_and\\_pm](http://www.erawa.com.au/1/1165/46/inquiry_into_the_efficiency_of_synergys_costs_and_pm)  
<sup>13</sup> [http://www.nt.gov.au/ntt/utilicom/electricity/electricity\\_retail\\_pricing.shtml](http://www.nt.gov.au/ntt/utilicom/electricity/electricity_retail_pricing.shtml) and [http://150.191.80.125/\\_data/assets/pdf\\_file/0016/65212/cp\\_table.pdf](http://150.191.80.125/_data/assets/pdf_file/0016/65212/cp_table.pdf)

<sup>14</sup> AEMC (2012). Final Report: Possible Future Retail Electricity Price Movements: 1 July 2011 to 30 June 2014. [www.aemc.gov.au/market-reviews/completed/possible-future-retail-electricity-price-movements-1-july-2011-to-30-june-2014.html](http://www.aemc.gov.au/market-reviews/completed/possible-future-retail-electricity-price-movements-1-july-2011-to-30-june-2014.html)

<sup>15</sup> Power and Water Corporation (2012). Fact sheet: Prices are changing from 1 July 2012 (Power, Water, Sewerage). [http://150.191.80.125/\\_data/assets/pdf\\_file/0015/65211/prices.pdf](http://150.191.80.125/_data/assets/pdf_file/0015/65211/prices.pdf)

Cost reflective pricing is important to driving more efficient use of energy, improving utilisation of infrastructure and lowering overall supply costs for all consumers. This avoids distorted price signals on energy consumption and investment and promotes efficient and competitive energy markets for the benefit of consumers and the energy sector alike.

**6. The Department of Resources, Energy and Tourism, *Fact Sheet on Electricity Prices*, August 2012, p. 2, indicates that household electricity and gas prices have increased much more than business electricity and gas prices since 1991.**

**a. What types and sizes of businesses are included in the business category?**

The graph on page two of the Department's *Fact Sheet on Electricity Prices* is based on price index data from the ABS. It represents movements in electricity and gas prices paid by households and a representative subset of businesses. The household electricity and gas price indexes data is based on the ABS Consumer Price Index (Category No. 6401.0) specific to electricity and gas.

The business electricity and gas price indexes data is based on the ABS Producer Price Index (Category No. 6427.0) specific to electricity and gas. The ABS derives this data through surveys of electricity retailers and businesses in the manufacturing sector. The size and types of these businesses vary greatly but are intended as far as possible (through the ABS survey process) to represent the broad range and size of businesses within the manufacturing sector. The data should be treated as indicative only of potential trends in electricity and gas prices for these businesses.

**b. Why have the household prices increased so much more than business prices?**

The AER notes 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.<sup>16</sup>

However, in recent years similar electricity and gas price pressures are applicable across both business and household consumers. The AER notes that rising wholesale energy prices drove up retail prices in 2007-08, when the drought constrained hydro generation and low cost thermal generators that rely on water for cooling. More recently, rising network costs (especially for distribution networks and pipelines) and the costs of introducing and expanding green schemes flowed through to retail prices.<sup>17</sup>

As referenced above, the ABS price index data should be treated as indicative only of potential trends in electricity and gas prices for households and businesses.

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<sup>16</sup> AER (2012). State of the Energy Market 2011. [www.aer.gov.au/node/6311](http://www.aer.gov.au/node/6311)

<sup>17</sup> AER (2012). State of the Energy Market 2011. [www.aer.gov.au/node/6311](http://www.aer.gov.au/node/6311)

**7. To what extent has the undergrounding (rather than using poles and wires) increased the cost of household electricity networks?**

**a. How are the costs and benefits weighed up by companies and regulators in setting prices?**

The Department does not have access to specific information on undergrounded electricity cables, nor the associated costs, as these vary between businesses and locations. We understand distribution network businesses (which are generally represented by the ENA), and transmission businesses (which are generally represented by Grid Australia) have more specific data.

The ENA has recently noted “Underground cabling is a major improvement to network reliability. Across Australia in the decade to 2009 more than 56,000 circuit kilometres of new transmission and distribution cabling was laid underground, almost 65 per cent of all cable installed during that period. Underground cabling is more expensive than overhead cables but is also more secure, improving reliability and safety of supply.”<sup>18</sup>

Regulated electricity network businesses must periodically apply to the AER to assess their revenue requirements (typically, every five years). Chapters 6 and 6A of the National Electricity Rules lay out the framework that the AER must apply in undertaking this role for distribution and transmission networks respectively. The frameworks are broadly similar, and require the AER to set a ceiling on the revenues or prices that a network can earn or charge during a regulatory period.

In determining the revenues or prices that a network business can charge, the AER must forecast the revenue requirement of a business to cover its efficient costs (including operating and maintenance expenditure, capital expenditure, asset depreciation costs and taxation liabilities) and provide a commercial return on capital. In making its assessment, the AER collects a range of data on regulated businesses to make an assessment of regulated businesses proposals (including any proposals for undergrounding) for future revenue needs.

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<sup>18</sup> ENA Electricity Prices Fact Sheet, [http://www.ena.asn.au/udocs/2012/06/nem\\_07.pdf](http://www.ena.asn.au/udocs/2012/06/nem_07.pdf)

**8. Are there different ways in which electricity generators, transmission, distribution and retail are set up in each state and territory, which may influence costs and household electricity prices, including, but not limited to pole spacing, undergrounding, voltages, layout of distribution networks, metering, location of generators?**

Generation

Just over half the generation capacity of the National Electricity Market is government-owned. Most generation capacity in Victoria (VIC) and South Australia (SA) is privately-owned, while state-owned corporations control nearly all generation capacity in Tasmania (TAS). In Queensland (QLD), state-owned corporations control around two-thirds of its generation capacity, including power purchase agreements over privately-owned capacity. In New South Wales (NSW), some state-owned retail and gen-trader rights were sold to private interests in 2010. In November 2011, the NSW Government announced it would seek to privatise its remaining generation assets and power station development sites. The Australian Capital Territory (ACT) does not have its own generation capacity.

The Western Australian Electricity Market (WAEM) is separate from the NEM and is divided into two networks, the South West Interconnected System (SWIS) and the North West Interconnected System (NWIS). A state-owned corporation is responsible for about 60 per cent of generation in the SWIS. Private generators sell power to a state-owned corporation responsible for transmission, distribution and retailing in the NWIS. Generation capacity in the NT is provided by a single state-owned corporation.

Transmission and distribution

All five distribution networks in VIC are privately-owned, while the SA network is leased to private interests. The transmission networks in VIC and SA and the three direct current interconnectors (Directlink, Murraylink and Basslink) are all privately-owned. The ACT distribution network has mixed government and private ownership, and electricity transmission to the ACT is owned by a NSW state-owned corporation. All networks (transmission and distribution) in QLD, NSW and TAS are state-owned.

Two major networks operate in WA, the SWIS and NWIS. Both are owned by state-owned corporations. Smaller networks that service the Pilbara mining operations are owned by private companies. The NT network is owned by a state-owned corporation.

The Productivity Commission is currently testing whether there are any barriers in the regulatory framework to the greater use of productivity benchmarking by energy networks, irrespective of ownership, which could deliver more efficient outcomes to consumers.

Retail

Energy retail in the NEM is dominated by private corporations. SA and Victoria have fully privatised energy retail sectors. Three retailers, AGL Energy, Origin Energy and TRUenergy, supply the bulk of small customers. These companies also account for almost the entire energy retail sector in NSW. In QLD, Origin Energy and AGL Energy together account for over half of the retail market, whilst government-owned retailers account for most of the remainder. The ACT and TAS are exceptions. The ACT's energy retail sector is dominated by ActewAGL, a joint venture between the public and private sectors. The energy retail sector in TAS is entirely government-owned.

In WA, most consumers purchase their electricity from state-owned corporations. Smaller electricity users in the SWIS are serviced by a state-owned corporation, while those consuming more than 50 megawatts but less than 160 megawatts per year may access retail competition from private companies or use a standard state-owned retail contract. Users consuming more than 160 megawatts per year must negotiate a contract with any licensed energy retailer. A state-owned corporation is the sole retailer in the NWIS and other small, remote networks. The predominant electricity retail entity in the NT is a state-owned corporation.

The Department refers to its earlier submission to the Inquiry on the drivers of recent electricity price rises.

The table below shows the number of active retailers and where they operate<sup>19</sup>

RETAILER	OWNERSHIP	QLD	NSW	VIC	SA	TAS	ACT
ActewAGL Retail	ACT Government and AGL Energy		•				•
AGL Energy	AGL Energy	•	•	•	•		
Alinta Energy	Alinta Energy						
Aurora Energy	Tasmanian Government					•	
Australian Power & Gas	Australian Power & Gas						
Click Energy	Click Energy						
Country Energy	Origin Energy		•				
Diamond Energy	Diamond Energy						
Dodo Power & Gas	Dodo Power & Gas						
Ergon Energy	Queensland Government						
Integral Energy	Origin Energy		•				
Lumo Energy	Infratil						
Momentum Energy	Hydro Tasmania (Tasmanian Government)						
Neighbourhood Energy	Alinta Energy						
Origin Energy	Origin Energy	•	•	•	•		
Powerdirect	AGL Energy	•					
Qenergy	Qenergy						
Red Energy	Snowy Hydro <sup>1</sup>						
Sanctuary Energy	Living Choice Australia/ Sanctuary Life						
Simply Energy	International Power						
Tas Gas Retail (formerly Option One)	Brookfield Infrastructure						
TRUenergy	CLP Group		•	•			•

Electricity retailer ■  
 Gas retailer ■  
 Host retailer •

1. Snowy Hydro is owned by the New South Wales Government (58 per cent), the Victorian Government (29 per cent) and the Australian Government (13 per cent).

Notes:

The 'host' retailers listed for Victoria and Queensland are those responsible for offering 'standing offer' contracts to customers that establish a new connection.

TRUenergy surrendered EnergyAustralia's licence in July 2011.

Sources: Jurisdictional regulator websites, retailer websites and other public sources.

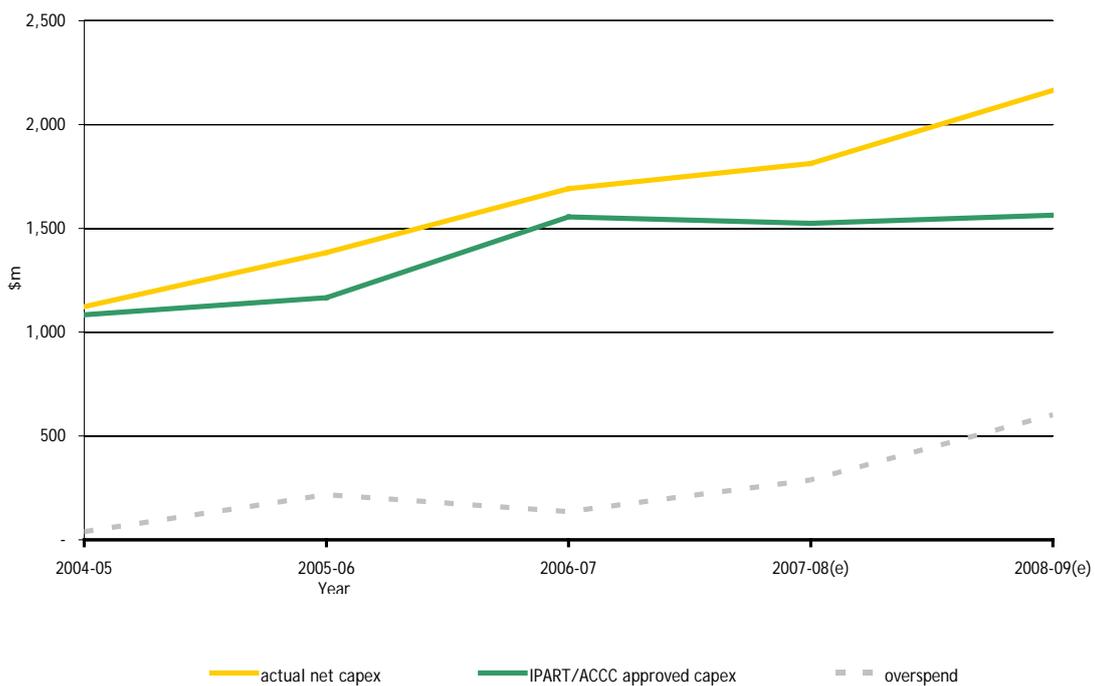
<sup>19</sup>AER 2011 - State of the Energy Market 2011 [www.aer.gov.au/node/6311](http://www.aer.gov.au/node/6311)

**9. Is there any evidence of capital expenditure overspends by electricity network service providers?**

A capital expenditure (capex) overspend occurs when an electricity network incurs more capex than was allowed by the regulator in its regulatory determination. Under the current National Electricity Rules (NER), the regulatory asset base must be adjusted to include all capex incurred during the previous regulatory period. This means that prices automatically adjust to allow network businesses to recover all capex incurred, even if it was in excess of their regulated allowance.

For the previous regulatory period, there is evidence that some electricity networks have incurred capex overspends, particularly in New South Wales (NSW) and Queensland. Figures 9 and 10 below show the capex overspends incurred by NSW and Queensland electricity distribution networks between 2004-05 and 2007-08 and between 2005-06 and 2009-10, respectively. The NSW distribution networks spent 19 per cent more than the forecasts set in previous determinations.<sup>20</sup> Around 94 per cent of the total overspend was due to expenditure by AusGrid and Essential Energy.

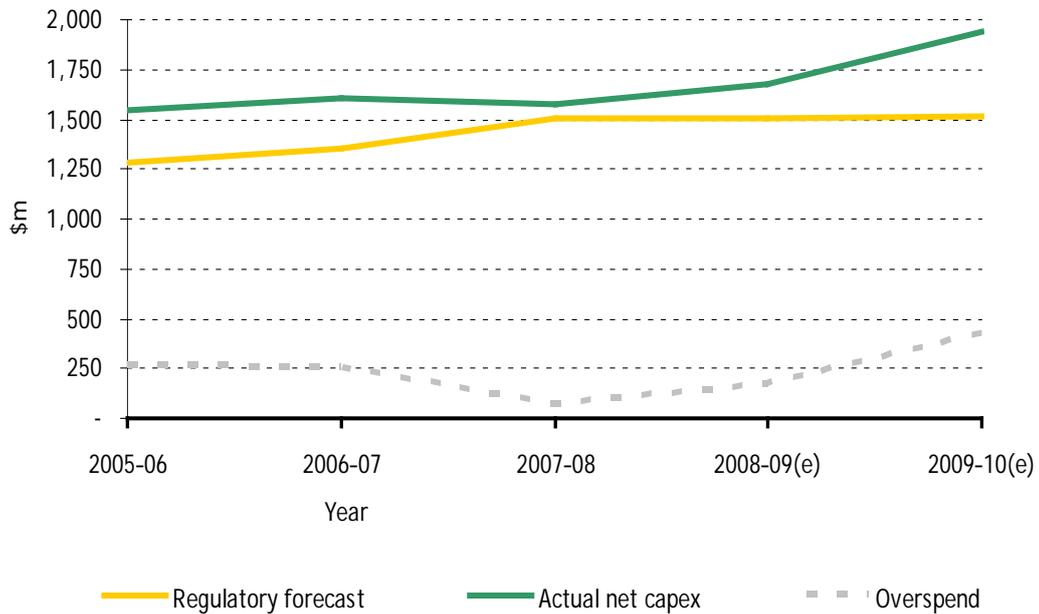
**Figure 9: Combined NSW DNSPs actual and determined capex forecast (\$m real 2008–09)**



Source: AER, *Draft decision—New South Wales draft distribution determination 2009–10 to 2013–14*, 21 November 2008, p. 123.

<sup>20</sup> AER, *Draft decision—New South Wales draft distribution determination 2009–10 to 2013–14*, 21 November 2008, p. 122.

**Figure 10: Combined Qld DNSPs actual and determined capex forecast (\$m, 2009-10)**



Source: AER Queensland Draft Distribution Determination, 2010-11 to 2014-15, November 2009, pg 85

The Department notes 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.<sup>21</sup> 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.

<sup>21</sup> See AEMC: [www.aemc.gov.au/Electricity/Rule-changes/Open/economic-regulation-of-network-service-providers-.html](http://www.aemc.gov.au/Electricity/Rule-changes/Open/economic-regulation-of-network-service-providers-.html)