

10.0 Energy

STRATEGIC OBJECTIVE **Ensure reliable and affordable supply for the State's businesses and households**

- KEY CHALLENGES**
- Improving energy affordability for businesses and households
 - Ensuring a diversity of supply and a sustainable energy mix for NSW into the future
 - Resolving regulatory uncertainty around the future of the energy sector
 - Bringing new gas projects on-stream

OPPORTUNITY	KEY Infrastructure NSW RECOMMENDATIONS	COSTS & FUNDING
Gas projects	<ul style="list-style-type: none">• Develop an appropriate regulatory regime to support investment by the private sector in gas infrastructure and supply projects	Cost is not material

Snapshot

- In the five years to 2013–14, annual electricity usage in NSW declined on average by 2.8 per cent a year to 66,233 gigawatts per hour (Australian Energy Market Operator 2014). The drivers of this reduction were declining industrial use, increased solar (PV) installation and improved energy efficiency. These factors counteracted upward pressures on demand, such as increasing population and incomes, and economic growth. AEMO forecasts that between now and 2023/24, NSW will see minimal growth in demand due to the continued impact of these factors.
- Based on the latest forecasts from AEMO, there is currently between 2800 megawatts and 3100 megawatts of surplus capacity in the NSW electricity system. By 2023/24, that there will still be between 1500 megawatts and 3450 megawatts of surplus capacity in NSW. Any new generation required over the next 20 years will be provided by the private sector, with the NSW Government no longer directly owning/controlling any electricity generation assets by the end of this year – other than 58 per cent of Snowy Hydro.
- Over the last decade, the average NSW residential electricity bill has more than doubled. These price increases contributed to structural adjustments in NSW's industrial and manufacturing base. The cost of providing gas to residential and business customers is forecast to increase significantly in the next few years as long-term gas supply contracts to NSW gradually expire from 2014 to 2018 and prices within Australia rise to be in parity with global export markets for Australian producers.
- The cost structure of NSW's electricity networks is less competitive than that in other jurisdictions. Investment in NSW electricity networks is significantly higher than in other States where the private sector owns the network. Each electricity business has borrowed heavily to fund its capital program and this increase in debt has contributed significantly to the increase in the Government's overall net debt. The electricity sector accounted for 23 per cent of Government capital in the four years to 2012/13 and represents 21 per cent of the future capital program (the four years to 2016/17), causing constraints on borrowing in other government sectors.

Australian Energy Market Operator 2014

10.1 Summary

While reforms in the NSW energy sector are successfully delivering competition in the wholesale and retail gas and electricity markets, challenges remain in ensuring that households and businesses have access to a secure, reliable, affordable and clean energy supply.

In particular, the cost of providing electricity to residential and business customers in NSW has increased significantly in recent years, primarily driven by increases in network (transmission and distribution) prices – with some contribution from 'climate change' schemes.

There is clear evidence that private sector ownership and management of network and transmission businesses in other States is delivering lower costs to customers with the same levels of service. Infrastructure NSW considers that further reform of the energy sector – in particular, increasing private sector ownership and operation of the State's electricity networks – will deliver benefits for NSW energy customers.

In 2012, the NSW Government established Networks NSW, a framework under which Ausgrid, Essential Energy and Endeavour Energy collaborate to pursue a range of cost saving initiatives that are already delivering substantial savings.

NSW also needs to manage and adjust to changes in its fuel mix over the next 20 years. This means coming to terms with a range of challenges, including the impacts of expected significant increases in wholesale gas prices within the next 5 to 10 years. Bringing new gas projects

on-stream will require the development of an appropriate regulatory regime to support investment by the private sector in gas infrastructure and supply projects.

Snowy Hydro Limited is now one of the last remaining government-owned retailer/generation business in the National Electricity Market. Infrastructure NSW recommends that work commences on a scoping study of the options for leasing Snowy Hydro Limited, with a view to recycling NSW’s share into new investments in public infrastructure.

10.2 Progress since 2012

The energy sector in NSW is moving towards greater private sector involvement. Over recent years, the Government has moved out of ownership of retail energy businesses and electricity generators – recycling billions of dollars in sales proceeds into infrastructure projects across NSW.

There is strong evidence that government ownership of electricity networks does not provide the best customer outcomes and growing recognition that public ownership is not necessary, providing that good regulation being in place. Customers of private network operators in Victoria and South Australia have benefited in terms of both network prices and service levels, as shown in the figure below.

The NSW Government removed retail electricity price regulation in NSW from 1 July 2014, based on a review by the Australian Energy Market Commission (AEMC) in October 2013, which found that competition in NSW retail energy markets is delivering discounts and other

Table 10.1 Long-term change in average annual electricity prices (%)

	Government-owned		Privately-owned	
	NSW 1996 – 97 to 2012 – 13	Queensland 1996 – 97 to 2012 – 13	Victoria 1996 – 97 to 2012 – 13	South Australia 1998 – 99 to 2010 – 11
Retail electricity prices	+83%	+57%	+28%	+23%
Network prices	+122%	+140%	-18%	-17%
Non-network costs plus other costs*	+51%	+11%	+72%	+86%

Source: EY

benefits to small consumers and that price regulation could be removed.¹¹⁴ This means that IPART no longer determines regulated electricity retail prices and retailers are free to set their own prices.

10.3 Ongoing challenges

10.3.1 A reliable and affordable energy supply

The Government’s primary objective for energy is to make sure that residential and business customers across NSW have access to a secure, reliable, affordable and clean energy supply. This is best achieved by ensuring a diversity of supply and a sustainable energy mix that incorporates renewable energy sources.

The cost of providing electricity to residential and business customers in NSW has increased significantly in recent years, primarily driven by increases in network prices. However, other parts of the supply chain have

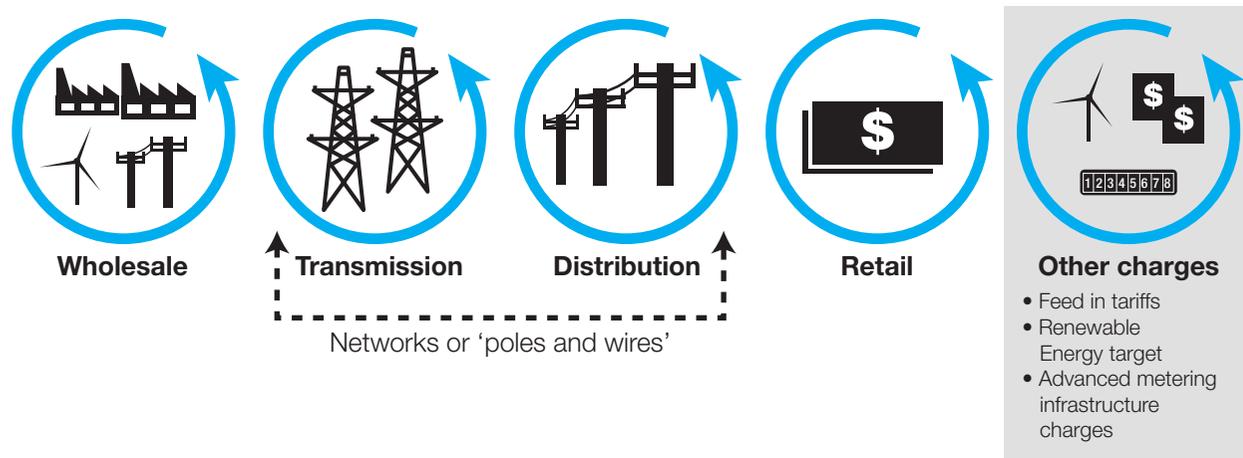
also driven the increase in prices, most notably ‘climate change’ schemes such as the carbon tax, renewable energy programs and the NSW Energy Savings Scheme.

IPART estimates that the annual electricity bill of a typical residential customer in NSW on regulated retail prices increased from \$1,013 in 2007/08 to \$2,073 in 2013/14 (in nominal terms). This increase was driven by:

- a \$580 increase in network costs
- a \$259 increase due to the carbon price and other green schemes
- a \$166 increase in retail costs (such as retail cost-to-serve and retailers’ margins)
- a \$55 increase in energy costs (for example, generation costs).¹¹⁵

114. Australian Energy Market Commission 2013, *Review of Competition in the Retail Electricity and Natural Gas Markets in NSW – Final Report*

115. IPART, *Review of Regulated Retail Prices and Charges for Electricity from 1 July 2013 to 30 June 2016: Electricity – Final Report*

Figure 10.2 Components of the typical electricity bill

Source: EY

10.3.2 Impact of network prices

High network price increases have contributed to structural adjustments in NSW's industrial and manufacturing base. In *First Things First*, Infrastructure NSW concluded that customers were getting marginal service benefits from the significant price increases they have faced in recent years. Much of the growth in the industry's capital expenditure was based on forecast increases in demand, which did not materialise.

In 2012, the NSW Government established Networks NSW, a framework under which the three State electricity distribution organisations – Ausgrid, Essential Energy and Endeavour Energy – collaborate to pursue a range of initiatives that apply greater financial discipline to capital and operating programs. This framework is projected to deliver total business savings of \$4.3 billion

over a five-year period, commencing in July 2011. By November 2013, the businesses had achieved over \$1.4 billion in savings across 2011/12 and 2012/13.¹¹⁶

10.3.3 Impact of electricity wholesale and retail prices

In recent years, wholesale electricity prices have been flat or falling, as declining demand growth put downward pressure on electricity prices for consumers. In the five years to 2013/14, annual electricity usage in NSW declined on average by 2.8 per cent a year to 66,233 gigawatts per hour.¹¹⁷

AEMO forecasts that between now and 2023/24, there

116. Media Release 2013, NSW Treasury, 'Network savings now 10 times above target'

117. Australian Energy Market Operator, *2014 National Electricity Forecasting Report*

will be minimal growth in demand due to the continued impact of lower manufacturing activity, consumers' responses to higher prices (demand management), the impact of energy efficiency improvements and distributed generation. These decreases may offset any increases that might otherwise have been driven by population, income or economic growth.

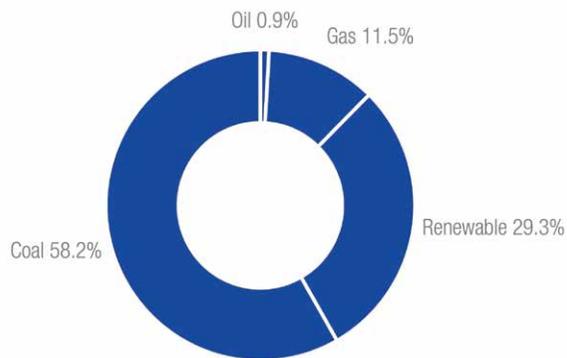
Based on the latest forecasts from AEMO, there is no need to provide any new generation capacity in NSW between now and 2023/24. There is currently between 2800 megawatts and 3100 megawatts of surplus capacity in NSW. By 2023/24, there will still be an estimated 1500 to 3450 megawatts of surplus capacity. Furthermore, any new generation required in NSW over the next 20 years will be provided by the private sector, with the NSW Government no longer directly owning/controlling any electricity generation assets by the end of 2014, other than 58 per cent of Snowy Hydro.

10.3.4 A changing fuel mix

Despite AEMO forecasts for generation capacity, a significant issue for NSW is how the State's fuel mix will change over the next 20 years. This means coming to terms with a range of challenges: the impacts of expected wholesale gas prices; the future of coal (which makes up a significant share of NSW generation, as shown in the figures below); the retiring of NSW generation assets and the increasing role of renewables.

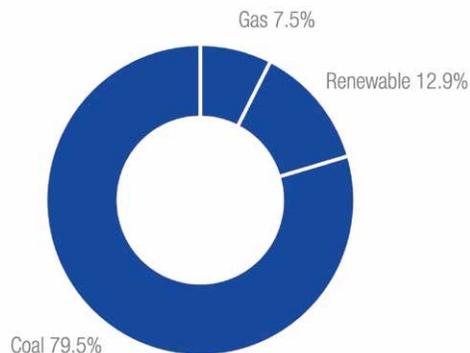
The considerable uncertainty associated with renewable energy schemes has implications for investor confidence in the renewable and non-renewable generation sectors. At present, NSW has over 17,000 megawatts of electricity generation projects in the planning system,

Figure 10.3 Installed capacity by fuel type in NSW in 2013



Source: Trade and Investment 2014, *State of the Renewable Energy Industry in NSW*

Figure 10.4 Generation by fuel type in NSW in 2013



Source: Trade and Investment 2014, *State of the Renewable Energy Industry in NSW*

many of which are unlikely to proceed. Almost 50 per cent of these schemes, worth an estimated \$13 billion,¹¹⁸ are for renewables.

Ideally, future investment in generation should align with the retiring of NSW generation assets (primarily coal) and should reflect regulatory certainty on renewable schemes. This will provide greater investor certainty, ensure security and affordability of supply and facilitate an orderly transition of retiring assets out of the market.

10.3.5 Role of gas in NSW fuel mix

The NSW Government does not own any gas distribution or transmission network assets, but gas infrastructure plays a critical role in the State’s energy mix.

NSW currently imports the vast majority of its gas from other States under long-term supply contracts. A large number of wholesale gas supply contracts are due to expire between 2014 and 2018. According to the Bureau of Resources and Energy Economics, by 2018 less than 15 per cent of NSW’s demand will be met by existing contracts.¹¹⁹

The growth in exports of Liquid Natural Gas (LNG) to Asian markets is driving significant changes in eastern Australia’s wholesale gas market.

NSW’s major gas network provider, Jemena, has proposed lowering gas network charges by up to 20 per cent for residential users over a five year period (excluding inflation) to ensure gas remains a competitive fuel

option in the longer term.¹²⁰ Nonetheless, NSW retailers increasingly will have to compete with offshore demand and move towards paying gas suppliers the same high price they can fetch on the global market.¹²¹ As a result, the cost of providing gas to residential and business customers is likely to increase significantly in the next five to 10 years as prices rise to parity with global export markets for Australian producers. This price increase is putting pressure on a number of industries, particularly manufacturing.

The NSW Government will need to consider bringing new gas projects on-stream. There are at least two key coal seam gas projects in NSW: Santos’s Narrabri Gas Project and AGL’s Gloucester Gas Project. Combined, these projects could supply a critical proportion of NSW’s demand for gas. In addition, putting in place longer term policy instruments such as trading hubs and gas trading bulletin boards will be important for market transparency on availability, demand and pricing.

Industrial gas users, related industry associations and other affected stakeholders have supported the idea of a domestic gas reservation policy, which would retain a portion of domestic gas for domestic use at lower prices. However, the Grattan Institute puts forward an alternate view, observing in its ‘Gas at the Crossroads’ report that “government intervention to artificially suppress prices or reserve supplies for domestic use will reduce the incentive to develop new supplies”.¹²²

118. Trade and Investment 2014, *State of the Renewable Energy Industry in NSW*

119. Bureau of Resources and Energy Economics 2013, Gas Market Report

120. Media Release 2014, Jemena, ‘Jemena seeks to lower NSW gas network prices’

121. IPART, *Changes in regulated retail gas prices from 1 July 2014*

122. Grattan Institute 2014, *Gas at the Crossroad: Australia’s hard choice*

Recommendation

Infrastructure NSW recommends placing greater emphasis on developing an appropriate regulatory regime to support investment by the private sector in gas infrastructure and supply projects.

10.3.6 Investor confidence and reform in the energy sector

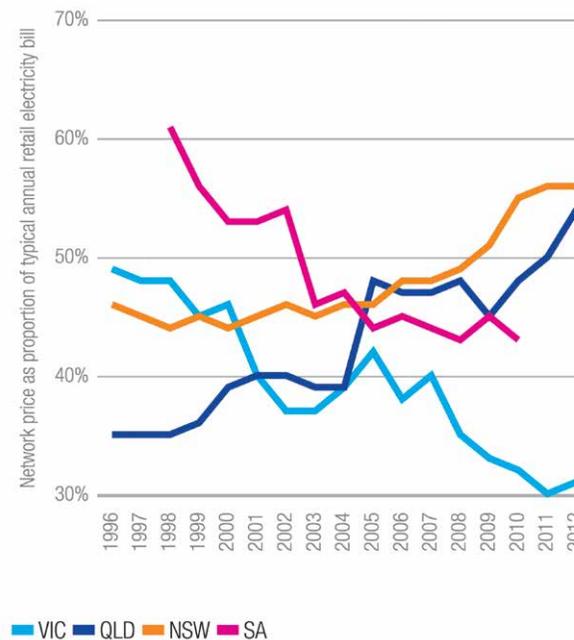
Improving energy affordability and security will require timely investment by the private sector to respond to market changes, as well as efforts by the NSW Government to continue the reform of the energy sector and to provide certainty for the sector.

The regulatory environment has recently been changed in an effort to encourage more efficient investment and provide a greater focus on the long-term interests of consumers. However, it is yet to be seen how the Australian Energy Regulator¹²³ will apply these new rules when considering submissions from the three NSW distribution businesses and TransGrid on prices for the period 2014 to 2019. A draft determination is due -in November 2014 for public consultation.

The evidence strongly indicates that the privatisation reform of electricity networks can serve the public interest in relation to energy security. While network prices in NSW increased in real terms by well over 100 per cent

123. The AER determines capital spends and pricing/revenue levels for the monopoly transmission and distribution sectors in both gas and electricity.

Figure 10.5 Network prices as a proportion of typical annual retail electricity bill (%)



Source: EY

in the period from 1996/97 to 2013/14, network prices in Victoria and South Australia have decreased significantly in real terms since privatisation. These results appear to be underpinned by substantial efficiency improvements in South Australia and Victoria since privatisation, suggesting the private sector has managed the networks more efficiently than government.¹²⁴ Since network privatisation, residential electricity customers in Victoria and South Australia have benefited in terms of both network prices and service levels.

124. Ernst and Young 2014, *Electricity Network Services – Long Term Price Trends*, Report to NSW Treasury

In *First Things First*, Infrastructure NSW recommended that the NSW Government undertake a study to assess the scope and implementation strategy for the privatisation of distribution networks. It also recommended the investigation of options for the lease of Snowy Hydro Limited – one of the last remaining government-owned retailer/generation business in the National Electricity Market.

With stable and transparent policy and governance frameworks in place, there is no longer any sound public policy reason why governments should continue to own electricity network assets or, in the case of Snowy Hydro, retail and generation assets. Specifically:

- Reforms in the energy sector are successfully delivering competition in the wholesale and retail gas and electricity markets.
- Recent changes to the regulatory framework will protect the long-term interests of consumers. These changes include competition reforms and national regulation by the independent Australian Energy Regulator (which is part of the ACCC).
- There is clear evidence that private sector ownership and management of network and transmission businesses in other States is delivering lower costs to customers with the same levels of service.