6. Public Versus Private Sector Investment

**Key Findings**

- Historically, the NSW Government has ensured the State’s supply of generation through ownership of, and investment in, power stations.

- The energy market reforms of the 1990s have established a national and competitive energy market governed by a tested regulatory framework. The success of these reforms means the Government no longer needs to own electricity businesses to ensure security of supply.

- The National Electricity Market (NEM) provides a market that is efficient and protects consumers regarding price, quality, reliability and security of electricity supply.

- Government ownership of electricity businesses operating in the competitive sectors of the industry neither increases nor decreases the State’s ability to ensure price, social and environmental outcomes are achieved from the electricity industry.

- Should the NSW Government choose to continue to own most of the State’s electricity industry, the State will almost certainly have to both fund the next tranche of baseload generation in New South Wales and invest further in the State-owned energy corporations. There is no sustainable half way house. If Government continues to own businesses operating in the competitive energy market, it needs to accept that these businesses will have to pursue business strategies and investments across the NEM that will allow them to be successful.

- Investment in baseload capacity is but one example of the type of investments that Government would need to fund. The cost of new investment in generation capacity in New South Wales over the next 10 to 15 years is expected to be in the vicinity of $7 billion to $8 billion.
Key Findings (cont)

- The Government owned retail businesses will struggle to remain viable without significant additional capital to allow them to adopt a more vertically and horizontally integrated business model. The potential cost of doing so is in the range of $2 billion to $3 billion over the same period.

- Further, the Inquiry believes Government may be exposed to investing in the order of $3 billion to $4 billion over the next 15 years to retro-fit some existing power stations with carbon reduction technologies.

- While these investments may earn a return, the NSW Government would need to accept that it has less choice over how its limited capital is allocated to meet State Plan objectives and be prepared to make adjustments elsewhere in its capital program and State Budget to account for the increased business risk that such investment entails.

- Alternatively, divesting the retail and generation interests to the private sector would mitigate the need for public funding of the investment in these businesses and would realise proceeds otherwise unavailable to the Government.

- The combined impact of both the divestment of generation and retail and the avoidance of new generation investment means that total State net debt would be up to $26 billion lower in 2020 compared to a ‘retain and invest’ scenario. This would significantly improve the State’s fiscal position and the Government’s ability to meet its State Plan objectives.

- The State’s business profile and credit rating will benefit from the removal of ‘high risk’ generation and retail assets from its balance sheet.

- In summary, the Inquiry considers private sector investment will meet the State’s emerging generation needs while allowing the Government to achieve its energy and environmental policy goals, maintain the State’s credit rating and improve its ability to deliver State Plan objectives.
6.1 Introduction

The fourth term of reference of the Inquiry is to determine the conditions needed to ensure investment in emerging generation, consistent with maintaining the NSW AAA credit rating.

The Inquiry sees this term of reference as establishing whether the NSW Government’s responsibility to ensure a competitively priced and reliable supply of electricity for the State is consistent with its stated preference for the private sector to fund the State’s emerging generation needs.

In May 2007 the NSW Premier stated ‘It is not my preference, or the preference of this Government to use public funds to build new power stations with such funding better used elsewhere such as hospitals and schools’.

This sentiment has also been expressed in the recent NSW Infrastructure report to the Council of Australian Governments (COAG):

‘The NSW Government recognises the importance of adequate, reliable electricity supplies to the NSW economy and to the living standards of NSW citizens’... ‘The NSW Government preference is that the private sector undertakes investment in new electricity generation capacity. If the private sector investment is not forthcoming and the Government perceives that there are risks that supply demand imbalances may result in supply shortfalls, then the Government-owned business may invest in new capacity to meet that demand. The NSW Government will not allow NSW businesses and residences to suffer from blackouts and supply shortfalls’.

Electricity supply is an essential service, and the Inquiry recognises the Government’s responsibility to see that there is a reliable, secure and competitively priced supply of electricity. Historically, Governments have met this responsibility through building and owning power stations, and to a lesser extent retail businesses.

Since the last significant investment in generation capacity in New South Wales, the NEM has been established. As reflected in submissions, market participants are confident that the electricity market now supports private investment.

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1 News release issued by the Premier of New South Wales, the Honorable Morris Iemma, 9 May 2007
2 NSW Treasury, New South Wales Government Five Yearly Infrastructure Report to the Council of Australian Governments, January 2007, p.92-93
3 Units 1 and 2 of the Mount Piper Power Station commissioned in 1993 and 1992 respectively
Consequently, the Inquiry has considered:

- whether Government ownership is necessary to ensure reliability of electricity supply;
- whether Government ownership is necessary to ensure the market achieves appropriate price, social and environmental outcomes;
- the effectiveness of the National Energy Market (NEM) in delivering a reliable and least cost electricity supply; and
- the capacity of Government to maintain a reliable supply of electricity to the State in a manner consistent with maintaining the State’s AAA credit rating.

6.2 Government Ownership

Public Trading Enterprises (PTEs) and State Owned Corporations (SOCs) allow the Government to be involved in a business-like manner in areas where:

- the private sector is unlikely or unable to deliver the required products or services
- the community considers it appropriate that Government should own a business, for example, one that operates as a natural monopoly.

Is Government ownership necessary for reliable supply?

For the electricity industry it is important to distinguish between PTE/SOCs that are regulated monopolies and those that operate in competitive markets. While the arguments above may point to electricity distribution and transmission infrastructure being areas with a rationale for Government ownership, the Inquiry does not believe this rationale applies to the electricity retail and generation businesses that operate in the competitive part of the electricity supply chain.

Historically, the NSW Government, similar to other Australian State governments, has ensured security of supply by building and owning power stations. Prior to the creation of the NEM, the east coast electricity industry was characterized by:

- vertically-integrated government-owned generation and transmission monopolies
- regionally-based distribution business, responsible for both distribution system operations and maintenance, and retail electricity supply
- centralised, coordinated planning of generation and transmission system development
- prices at all levels of the electricity supply chain set via regulation, there was no market to provide price signals for investment in new capacity.
The industry changes that enabled the NEM to be successfully established left the NSW Government owning businesses which:

- own the State’s high-voltage transmission and low-voltage electricity distribution networks
- own over 95 per cent of the State’s installed generation capacity
- supply the majority of the State’s retail sales of electricity.

The NSW Government also:

- is part of the Ministerial Council of Energy which oversees national energy policy by ensuring the National Electricity Market supports an efficient electricity industry
- has with other States and the Commonwealth supported the establishment of the Australian Energy Market Commission (AEMC) as the independent energy market rule maker
- sets State environmental policies and licence conditions
- sets the terms of reference for retail price tariff determinations
- establishes the land use planning and development approval process for new investments
- sets customer protection and reliability standards to be implemented by energy businesses.

**Generation supply and reliability are independently regulated**

Owning businesses is not the way the Government ensures there is enough generation capacity. The AEMC is responsible for the market rules which ensure an efficient and responsive National Electricity Market. As the industry evolves the rule change process administered by the AEMC is designed to ensure the market similarly evolves to suit industry and consumer needs.

The National Electricity Market Management Company (NEMMCO) has responsibility for ensuring reliability of supply. NEMMCO uses its Statement of Opportunities and the Annual National Transmission Statement to help the private sector identify new investment opportunities.
New South Wales will continue to be a member of the Ministerial Council on Energy which will continue to ensure that NEMMCO's reserve contracting role is effectively exercised. This function is the primary ‘safety net’ by which sufficient reserve capacity is maintained as a buffer against spikes in demand or unit outages.

As part of the national regulatory framework a Reliability Panel has been established by the AEMC to monitor, report and review the safety, security and reliability of the national electricity system. This Panel is unaffected by who owns generation and retail businesses.

**Is Government ownership necessary for the public’s best interest?**

The NSW Government owns energy assets (the shareholder function) and overseas policy and regulation of the energy industry (the policy function).

The two roles are kept separate so that private sector businesses are operating in a competitively neutral environment. That is, State Owned Corporations must comply with the same rules and requirements that the private sector must comply with.

The NSW Government’s ownership of electricity businesses is controlled by the *Energy Services Corporations Act (NSW) 1995*, the *State Owned Corporations Act (NSW) 1989* and the supporting Commercial Policy framework, under the auspices of the Treasurer.

The NSW Government’s electricity policy objectives are achieved through separate legislation such as the *Electricity Supply Act (NSW) 1995*, and the National Electricity Law. Much of this has been, or is in the process of being, harmonised with other jurisdictions to establish a nationally consistent approach to electricity policy. These policy instruments operate under the auspices of the Minister for Energy.

**Policy, not ownership achieves price, social and environmental outcomes**

The Government's core policy role is to ensure a robust policy and regulatory framework that will deliver an effective and efficient market and appropriate conditions for consumer and environmental protection. Regardless of whether the energy businesses are owned by the Government or the private sector, the regulations and policies imposed by the Government apply equally to both State Owned corporations and private sector organisations.
The NSW Government is currently a driving force behind the National Reform Agenda for energy. A key part of this is harmonising the policy and regulatory frameworks for electricity and gas. For instance the Council of Australian Governments (COAG) recently agreed to implement a national energy market operator - Australian Energy Market Operator. This will bring together the market operators for both electricity and gas and will mean that the two parts of the energy industry are increasingly on an equal footing from a policy and regulatory perspective.

In Australia, the gas industry is largely owned by the private sector. Consumer protection, environmental protection and reliability are still achieved in the gas industry through Government regulation even though the Government does not own these businesses. It is the policy and regulatory functions, which apply similar principles to those used in electricity, that are designed to meet these goals. The businesses operate within the framework established by Government. Increasingly the regulatory frameworks for the two segments (gas and electricity) of the energy industry are being harmonised. This recognises that businesses in the energy industry are becoming integrated energy businesses rather than standalone gas or electricity businesses.

**Policy supports price outcomes**

The electricity prices paid by customers comprise a number of different charges - a charge for the purchase of electricity from the wholesale market, transportation (transmission and distribution) charges and a retail charge. For households and most small businesses, around 40 per cent of this regulated electricity price is made up of wholesale charges, around 47 per cent is transmission and distribution charges, and around 13 per cent is retail charges. Whether the electricity supply businesses are Government or privately owned is not a factor in determining the level of these charges, or the size of the customer’s bill. This is illustrated below in Figure 6.1 and each component is discussed in further detail below.

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4 IPART’s target regulated electricity retail tariff for a typical small customer in 2010
The size of the generation component of the bill is determined by prices in the wholesale market of the NEM. Wholesale trading in the NEM is a real-time spot market where supply and demand are instantaneously matched through a centrally-coordinated market process. Generators bid to supply the market with specific amounts of electricity at offer prices. Offers are submitted for every five minutes of the day. NEMMCO dispatches the least cost generators into production so that dispatch occurs in a ‘rising stack’ of price from lowest to highest. The wholesale price is determined by the offer bids of the generators, not their ownership.

Generators' activities in the wholesale market are strongly regulated by national institutions irrespective of whether they are government or privately owned.

Generators operating in the NEM are subject to the economy-wide anti-competitive provisions of the Trade Practices Act administered by the Australian Competition and Consumer Commission (the ACCC). There are heavy fines under the Trade Practices Act if firms engage in anti-competitive behaviour.

In addition, the operation of the NEM is governed by industry-specific legislation comprising the National Electricity Law and the National Electricity Rules. The rules governing the bidding behaviour of generators are particularly strong. There is a $1 million penalty for breaches of the rebidding rules which apply to both companies and the individuals that work for those companies. By comparison, all other civil penalties under the National Electricity Law attract a $20,000 fine for an individual and $100,000 for a company.
The National Electricity Law and the National Electricity Rules are administered and enforced by the Australian Energy Regulator (AER). The AER has a team that monitors bidding and price outcomes on a daily basis. The AER routinely investigates incidents when market prices exceed $5,000 per megawatt hour and has power to investigate where an inadequate reason for generator rebidding is provided to NEMMCO.

NEMMCO which, administers the wholesale market into which generators bid their output, also has powers under the National Electricity Rules to require a generator to dispatch if supply has been withheld and there is a risk of an imbalance between supply and demand which would lead to power interruptions.

While dispatch of existing generators is centrally coordinated, investment in new generators is not. The NEM encourages market participants to decide on the location, type and timing of new investments on the basis of forward electricity prices, as well as any other relevant commercial or regulatory factors such as land use planning. To the extent that the NEM promotes efficient investment decisions it helps to ensure that wholesale prices remain efficient.

The transmission and distribution companies are natural monopolies and their tariffs are regulated by an independent pricing regulator. In the case of the transmission operator, TransGrid, the regulator is the AER. In the case of the distribution businesses, the regulator is currently the Independent Pricing and Regulatory Tribunal (IPART). The AER will assume responsibility for regulating the tariffs charged by the distribution businesses in the near future. Ownership does not affect the regulators' determination of the level of the charges.

There are currently 23 electricity retail businesses licensed to operate in New South Wales. Of these, the three Government owned businesses – EnergyAustralia, Integral Energy and Country Energy – supply approximately 25 per cent of NSW retail load. All licensed retailers, regardless of their ownership, are required to comply with the NSW regulatory framework as set out in NSW legislation.

The retail component of the end user's bill is relatively small. Since January 2002, all electricity customers in New South Wales have been free to compare offers from competing retailers and choose one that best suits their needs. For those customers who have entered the competitive market, the retail charge is determined by competition between retailers for customers and retailers effectiveness in purchasing in the wholesale market. IPART regulates the retail charge for those customers not in the competitive market. In 2005-06 there were over 2.2 million regulated customers in New South Wales who consumed almost 20,000GWh of electricity. There were also just over 920,000 contestable customers who consumed over 50,000GWh of electricity.
Policy achieves social outcomes

The NSW Government has one of the strongest consumer protection frameworks in Australia. This framework recognises that in order to encourage a competitive market, consumers need to have confidence in the market and have access to sound information on how the market works. It also recognises that electricity is an essential service and that there are some members of the community who have special requirements, such as low income groups and those using life support machines. The Government has specifically sought to address this small group of community.

The consumer protection framework is largely implemented via the Minister for Energy licensing all electricity retailers operating in New South Wales. There are a range of requirements on retailers under the Electricity Supply Act (NSW) 1995 and associated Regulations, including:

- A requirement to supply all customers who are connected to the grid with power
- Compliance with the Marketing Code of Conduct, that governs everything from what time a marketer can knock on a door to offer a new electricity contract, to the information that the retailer must provide in a contract, and ensuring that there is a cooling off period when a new contract is signed
- Membership of an approved Ombudsman scheme – the Energy and Water Ombudsman, NSW - and abiding by the Ombudsman’s rulings
- Allowing customers experiencing financial difficulties to pay by installments
- Very strong disconnection procedures, including preventing disconnection when a matter is before the Ombudsman or customers are on life support equipment.

These consumer protection requirements have been developed by the NSW Government in conjunction with the industry and consumer groups. The Government continues to look for ways to improve the consumer protection framework. For example, in response to an increase in disconnections, the Government implemented new regulations that resulted in the development of a Hardship Charter by all retailers.

The Government also provides direct support for some consumers via rebates. There are three types of rebates – a $112 per year pensioner rebate, a life support rebate which varies depending on the type of life support machine that is required in the home and Energy Account Payment Assistance (EAPA) vouchers of $30. EAPA vouchers are distributed by community welfare organizations such as the Smith Family and Salvation Army and are for customers experiencing a financial crisis. The community welfare organizations may decide to provide several vouchers to a customer.
The total value of the budget funded rebates in New South Wales in 2006-07 were pensioner rebates of $80.37 million, life support rebates of $2.66 million, and EAPA rebates of $7.44 million.

Consumer protection also encompasses the network businesses, through the imposition of reliability standards. The distribution reliability standards are generally State-based, while there are both national and State-based transmission reliability standards.

**Policy achieves environmental outcomes**

Environmental protection covers a number of areas – climate change, water and air pollution, water consumption from NSW rivers, and planning. These are discussed in detail below.

Climate change should be regulated at the national level via a national emissions trading scheme. However, in the absence of action from the Commonwealth Government, New South Wales has implemented effective and world leading greenhouse regulation on the energy industry.

The *Energy Supply Act (NSW) 1995* establishes the NSW Greenhouse Gas Reduction Scheme (GGAS) which requires all electricity retailers to meet legislated targets for electricity consumed in New South Wales. GGAS is one of the first mandatory trading schemes applied to electricity retailers.

The *Renewable Energy (NSW) Bill 2007* has also been introduced in Parliament, which when passed will establish a renewable energy target of 10 per cent of power consumed in New South Wales must be supplied by renewable generators, increasing to 15 per cent by 2020.

There is also a range of other greenhouse /climate change policies that the Government has applied. Chapter 4 provide details on energy efficiency and demand management programs in New South Wales, including Energy Savings Action Plans, the Climate Change Fund, the Building Sustainability Index (BASIX), the Government Energy Management Program, the National Framework for Energy Efficiency, Minimum Energy Performance Standards and energy labelling. Government commitment to these programs does not depend on ownership of electricity generation or retail businesses.

Power stations and their operations are licensed by the NSW Government, with a particular focus on air and water pollutants. This licensing occurs under the *Protection of the Environment Operations Act (NSW) 1997*, and is administered by the Minister for the Environment and the Department of Environment and Climate Change. This regulates non-greenhouse emissions such as NOx, SOx and particulate matter, and water discharge after it has been used for cooling in the power station.
Like other large water users, a power station’s access to water from catchments is regulated. This is regulated under the Water Management Act (NSW) 2000, and is administered by the Minister for Water and the Department of Water and Energy.

As with the development of most large infrastructure, new developments require planning approval from the Minister and/or the Department of Planning. Power stations and significant network infrastructure must all receive the appropriate planning approvals.

**Government ownership is not necessary to deliver the outcomes government wants**

The Inquiry considers that the NSW Government has paid particular attention to the transparent separation of policy and ownership functions. As a consequence, the Government’s ownership of businesses operating in the electricity market neither increases nor decreases its ability to implement its energy policy objectives.

The Inquiry concludes that ownership in and of itself does not affect prices in the competitive market segments (generation and contestable retail) or other regulated market segments (transmission, distribution and regulated retail). But to the extent that transferring the State’s retail and generation interests to the private sector increases the potential dynamics in the generation and contestable retail sectors there would be a beneficial impact on the price of electricity.

The Inquiry considers that the NSW energy retail market without Government ownership will not:

- affect prices paid by customers as there will continue to be an independently set regulated retail tariffs that small customers can remain on

- restrict the ability of the NSW Government to achieve community and environmental objectives. Policies and regulations such as targeted support for customers facing financial difficulties and regulating the environmental impacts of generation will continue.

It is clear the distinction and separation of these two functions, and the recognition that Government ownership is not essential to achieving price, reliability environmental or social policy outcomes, which underlies the Inquiry’s key recommendation.
The affect of government decision making can be seen in the effects of generation investment decisions prior to the creation of the NEM in 1989-1990. The Industry Commission\(^5\) estimated that the excess generation that New South Wales had built had an opportunity cost of $443 million, or $77 per person in New South Wales at that time. In today’s dollars this would equate to each NSW citizen paying $130 per annum in either additional taxes or electricity charges to fund this excess capacity.

The Inquiry considers that outcomes similar to those prior to the commencement of the competitive energy market could arise where the State’s emerging generation needs were funded by the Government. Under this scenario the Government would be forced to again adopt a central planner approach to generation investment rather than a decision making process under a market-based approach. Any less commercial investment decisions that result from this process will increase the price of electricity charged to NSW customers.

In Victoria it has been argued that privatisation has provided significant benefits both to the Victorian community and economy in general. It is claimed that since privatisation, Victorian energy businesses have shown marked increases in productivity and customer service and that customers have enjoyed lower prices and improved reliability.

‘The bottom line is that privatisation has brought substantial benefits over the past decade to the energy sector, Victorian consumers, the State Budget and the wider economy.’\(^6\)

While the Inquiry recognises the difficulties in attributing these benefits purely to privatisation, given the wide range of other determining factors, the Inquiry notes that as set out in Table 6.1 there has been new investment in generation in jurisdictions that have privatised.

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6.3 Effectiveness of the National Electricity Market in Delivering a Reliable and Efficient Electricity Supply

This issue is considered in detail in the Morgan Stanley report to the Inquiry. The report is Expert Report 3 and its findings are considered in greater detail in later sections.

The National Energy Market is working well

In summary, the Inquiry concurs with the Morgan Stanley’s conclusion that the NEM has worked well since its inception in meeting the market objective to ‘promote efficient investment in, and efficient use of, electricity services for the long term interests of consumers of electricity with respect to price, quality, reliability and security of supply of electricity and the reliability, safety and security of the national electricity system’.

In terms of investment:

- the market has delivered new investment as set out in Table 6.1, with a substantial amount of this coming from the private sector, particularly in wholly privatised jurisdictions; and

- private sector investment to date has been made largely in peak and intermediate plant, and has been driven by volatility of electricity prices. This investment shows that generation supply does respond efficiently to prices set in the wholesale market.

### Table 6.1: Significant Power Station Developments in the NEM since 2000

<table>
<thead>
<tr>
<th>Power Station</th>
<th>Year of Actual/Initial Operation</th>
<th>State</th>
<th>Capacity</th>
<th>Technology</th>
<th>Developer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pelican Point</td>
<td>2000</td>
<td>SA</td>
<td>485 MW</td>
<td>Gas (CCGT)</td>
<td>International Power</td>
</tr>
<tr>
<td>Ladbroke Grove</td>
<td>2000</td>
<td>SA</td>
<td>80 MW</td>
<td>Gas (OCGT)</td>
<td>Origin Energy</td>
</tr>
<tr>
<td>Oakey</td>
<td>2000</td>
<td>Qld</td>
<td>286 MW</td>
<td>Gas (OCGT)</td>
<td>Babcock &amp; Brown/ERM</td>
</tr>
<tr>
<td>Callide C</td>
<td>2001</td>
<td>Qld</td>
<td>920 MW</td>
<td>Coal</td>
<td>CS Energy/InterGen</td>
</tr>
<tr>
<td>Redbank</td>
<td>2001</td>
<td>NSW</td>
<td>150 MW</td>
<td>Coal</td>
<td>National Power</td>
</tr>
<tr>
<td>Bairnsdale</td>
<td>2001</td>
<td>Vic</td>
<td>94 MW</td>
<td>Gas (OCGT)</td>
<td>Duke Energy</td>
</tr>
<tr>
<td>Tarong North</td>
<td>2002</td>
<td>Qld</td>
<td>443 MW</td>
<td>Coal</td>
<td>Tarong Energy/TEPCO</td>
</tr>
<tr>
<td>Swanbank E</td>
<td>2002</td>
<td>Qld</td>
<td>385 MW</td>
<td>Gas (CCGT)</td>
<td>CS Energy</td>
</tr>
<tr>
<td>Millmerran</td>
<td>2002</td>
<td>Qld</td>
<td>850 MW</td>
<td>Coal</td>
<td>InterGen</td>
</tr>
<tr>
<td>Hallett</td>
<td>2002</td>
<td>SA</td>
<td>180 MW</td>
<td>Gas (OCGT)</td>
<td>AGL</td>
</tr>
</tbody>
</table>

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7 Section 7 of the National Electricity Law  
8 Expert Report 3, p.49
<table>
<thead>
<tr>
<th>Power Station</th>
<th>Year of Actual/Initial Operation</th>
<th>State</th>
<th>Capacity</th>
<th>Technology</th>
<th>Developer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quarantine</td>
<td>2002</td>
<td>SA</td>
<td>96 MW</td>
<td>Gas (OCGT)</td>
<td>Origin Energy</td>
</tr>
<tr>
<td>Valley Power</td>
<td>2002</td>
<td>Vic</td>
<td>300 MW</td>
<td>Gas (OCGT)</td>
<td>Edison Mission Energy</td>
</tr>
<tr>
<td>Somerton</td>
<td>2002</td>
<td>Vic</td>
<td>150 MW</td>
<td>Gas (OCGT)</td>
<td>AGL</td>
</tr>
<tr>
<td>Angaston</td>
<td>2005</td>
<td>SA</td>
<td>40 MW</td>
<td>Oil</td>
<td>Infratil</td>
</tr>
<tr>
<td>Yabulu</td>
<td>2005</td>
<td>Qld</td>
<td>220 MW</td>
<td>Gas (CCGT)</td>
<td>Transfield</td>
</tr>
<tr>
<td>Braemar</td>
<td>2006</td>
<td>Qld</td>
<td>455 MW</td>
<td>Gas (OCGT)</td>
<td>Babcock &amp; Brown Power</td>
</tr>
<tr>
<td>Laverton North</td>
<td>2006</td>
<td>Vic</td>
<td>320 MW</td>
<td>Gas (OCGT)</td>
<td>Snowy Hydro</td>
</tr>
<tr>
<td>Kogan Creek</td>
<td>2007</td>
<td>Qld</td>
<td>750 MW</td>
<td>Coal</td>
<td>CS Energy</td>
</tr>
<tr>
<td>Quarantine Expansion</td>
<td>2008</td>
<td>SA</td>
<td>120 MW</td>
<td>Gas (CCGT)</td>
<td>Origin Energy</td>
</tr>
<tr>
<td>Tallawarra</td>
<td>2008 (1)</td>
<td>NSW</td>
<td>400 MW</td>
<td>Gas (CCGT)</td>
<td>TRUenergy</td>
</tr>
<tr>
<td>Colongra</td>
<td>2009</td>
<td>NSW</td>
<td>667 MW</td>
<td>Gas (OCGT)</td>
<td>Delta Electricity</td>
</tr>
<tr>
<td>Uranquinty</td>
<td>2009</td>
<td>NSW</td>
<td>640 MW</td>
<td>Gas (OCGT)</td>
<td>Babcock &amp; Brown Power</td>
</tr>
<tr>
<td>Braemar</td>
<td>2010</td>
<td>Qld</td>
<td>630 MW</td>
<td>Gas (CCGT)</td>
<td>Origin Energy</td>
</tr>
</tbody>
</table>

Parties likely to invest in generation in New South Wales generally expressed a high degree of confidence that the NEM can provide appropriate signals for required new investment, and is superior to a more centrally planned approach to delivering generation investment:

‘it’s our belief that a properly functioning, efficient and informed environment it is the market that will respond most efficiently to the energy needs and timing of supply’.9

‘retailers are generally confident that the National Electricity Market (NEM) can deliver investment of the right type to the right locations in a timely fashion. In this regard, the Association does not consider there to be a need for the government to intervene in the market or directly underwrite new investment in any way ... We note that to date wherever price signals have been strong enough in the NEM investment has been delivered; particularly in Victoria, SA and Qld’.

‘...IGA recognises that the electricity market, functioning free of externally imposed distortions, sends effective signals to potential investors about the required timing, type and size of new generating capacity’.

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9 Infrastructure Partnerships Australia submission, p2
10 Energy Retailers Association of Australia submission, p1
11 Intergen Australia submission, p2
Uncertainty in policy setting may reduce reliability

In general there has been a high reliability of generation in the NEM and sufficient capacity from the energy market to meet consumer demand.

The Reliability Panel’s\textsuperscript{12} observations on system reliability which echo those of the parties likely to invest in generation, are that the fundamentals of the market design are sound and, with the current settings, the reliability standard is likely to be met in the near term, provided the fundamentals remain in place.

The Panel does observe however that there is increasing risk, in the medium to long term, that reliability may be compromised if reduced investor confidence as a result of uncertainty about other policy settings created potential delays with new generation investment\textsuperscript{13}.

The recommendations of the Inquiry in effect will address the policy settings of concern to investors as set out in Chapter 7.

6.4 Maintaining the State’s AAA credit rating

New South Wales has maintained the highest credit rating from Moody’s (Aaa) and Standard and Poor’s (AAA) since ratings commenced for the State in 1987.

Maintaining a AAA credit rating is a priority for Government.\textsuperscript{14} The State Plan recognises that ‘the AAA credit rating is the single most important signal that the NSW Government finances are being well managed’.\textsuperscript{15} Appendix 6.2 sets out in more detail why maintaining the State’s AAA credit rating is important.

What will affect the State’s credit rating?

Standard and Poor’s have given a clear message that to maintain the AAA credit rating the State Budget must be kept in surplus – ‘the biggest risk to New South Wales’ rating is its operating performance’.\textsuperscript{16} In 2006, their report indicated that, although the State’s strong balance sheet provides a buffer for now, large and sustained Budget deficits are not consistent with a AAA credit rating.

\textsuperscript{12}Reliability Panel, The Comprehensive Reliability Review, Interim Report, March 2007, p.43
\textsuperscript{14} NSW Government, State Plan - A New Direction for NSW, Priority P5: AAA credit rating maintained, 2006, p.6
\textsuperscript{15} Ibid, p.101
\textsuperscript{16} Standard and Poor’s Press Release: AAA credit rating on New South Wales Affirmed: Outlook Remains Stable Despite Forecast Operating Deficits, 2006
PTE debt is increasing

The State’s balance sheet has been significantly strengthened over the last decade, with Total State sector net debt halving as a percentage of gross state product (GSP).\(^{17}\) However, this trend has recently changed, with debt levels now forecast to increase over the next four years, principally to fund a large PTE capital spending program.

Overall, the risk of a credit rating downgrade in the short term appears very low. However, the ratings agency reports over the past two years have cautioned about the PTE sector’s increasingly negative impact on the State’s overall credit rating:

‘Adherence to these revised [fiscal] principles and targets should help limit deterioration of the State’s balance sheet and maintain its AAA credit rating, provided spending from PTEs remains under control’.\(^{18}\)

‘Standard and Poor’s believes that adherence to the [fiscal strategy] principles is likely to be consistent with the maintenance of the State’s AAA credit rating. This is provided the public non-financial corporations continue to be managed prudently’.\(^{19}\)

What are the costs of public sector funding?

The necessary investment in new baseload would be funded by the private sector if the conditions in Chapter 7 are satisfied. Alternatively, new generation investment could be funded by the public sector. The fiscal impacts of these scenarios are considered in this chapter. Should the private sector perceive that the Government was intending to fund the next baseload investment in New South Wales, it is unlikely that the private sector would be willing to fund subsequent tranches of baseload, or even peak, generation for the foreseeable future. The concerns identified in Chapter 7 would be exacerbated by publicly funded baseload investment. Private sector caution already reflects the extent and concentration of Government ownership of generation in New South Wales, and further investment would deepen that sense of caution.

This Chapter assesses the alternative potential development pathways where the conditions are not satisfied and the incumbent State-owned retailers and generators fund generation needs over the next decade or so. This pathway is indicative and is used by the Inquiry to demonstrate how the fiscal position could evolve. In practice more detailed assessment on a case by case basis would be required before any investment was approved.

\(^{17}\) NSW Budget Statement 2007-08, Budget Paper No. 2, 2007, p.xi

\(^{18}\) Standard and Poor’s, Issuer Credit Rating: New South Wales (State of), 2005 p.4

\(^{19}\) Standard and Poor’s, Issuer Credit Rating: New South Wales (State of), 2006, p.5
The State could need to invest up to $15 billion

Chapter 2 of this report indicates that New South Wales will require new baseload generation. The exact cost and timing of NSW’s emerging generation needs will depend on market participant’s evaluation of energy growth trends, energy efficiency achievements, the cost of carbon, growth in renewable generation and potential supplies from the interconnection with other States.

Appendix 6.1 describes a potential development pathway used by the Inquiry to analyse the cost to the State of having to fund future generation needs. This pathway brings together potential generation sites in the State, forecasts of required generation capacity needs and the cost of new generation. The Appendix estimates the cost of new generation in the range of $7 billion to $8 billion.

Based on the Morgan Stanley findings, the Inquiry also factored in the cost of investment in the retail businesses that would be necessary for them to become successful businesses in the NEM where they remain Government owned. Essentially, Government participation in the competitive segments of the electricity industry – retail and generation requires them to adopt business strategies similar to their private sector competitors

Appendix 6.1 details how the retail businesses must change and evolve under Government ownership or their value will erode over-time. The findings of Morgan Stanley indicate that a capital investment, potentially in the order of $2 billion to $3 billion, would be required to move the State-owned retailers onto a more equal footing with their private sector competitors.

Therefore together with the cost of new generation, the Inquiry considers the required capital investment by the State is in the order of $9 billion to $11 billion.

In assessing the fiscal impacts of the Government funding the State’s generation needs, the Inquiry also found it necessary to consider the potential for further investments in existing power plants. In particular, the Government may be exposed to having to retrofit coal-fired power stations with emerging carbon reduction technologies. For the purpose of modelling the fiscal impact on the State, the Inquiry considered this cost in the range of $3 billion to $4 billion.

Hence, for the purpose of modelling the fiscal impact from publicly funding the State’s emerging generation needs the Inquiry used a total funding requirement of $12 billion to $15 billion over the next ten to fifteen years.

20 Expert Report 3, pp150-156
The timing of the total investment pathway will depend on market circumstances. However, it is likely that new investment for peaking plant and further investment in retail activities of between $4 billion and $5 billion would be over the first half of the period till 2020. New investment for base load generation and the retrofit of existing plant of between $8 billion and $10 billion would be over the second half of the period till 2020.

The State’s capital program is described in the State Infrastructure Plan and (for the next four years) set out in detail in the 2007-08 State Budget Paper No. 4. The capital program includes significant investment in electricity networks to enhance reliability. The program does not however include any major generation investment beyond Delta Electricity’s approved Colongra project.

**The State-owned energy corporations capacity to fund**

For the purpose of explaining potential impacts on the State’s credit rating the Inquiry has modelled the cost of fully funding the investment pathway through debt. That is, it does not incorporate re-prioritisation of existing or future expenditure or tax increases.

The impact on the State’s fiscal position can be considered on an aggregated energy portfolio approach – rather than an energy business specific level - because:

- each energy SOC (generation and distribution/retail) has a different capacity to internally fund new investment, however the difference is not great
- the funding requirement for the investment pathway would influence the State’s credit rating primarily through increases in Total State Sector debt. Total State Sector debt captures both aggregate PTE\(^{21}\) debt and General Government Sector (GGS) debt. In terms of the State’s credit rating, the financial impacts on individual SOCs from funding new generation are secondary considerations compared to the financial impacts on the SOC energy portfolio and State as a whole.

NSW energy SOCs have capital structures similar to comparable private sector energy businesses. On average, debt gearing levels\(^{22}\) for both the generation and distribution/retail sectors are close to the upper end of an appropriate commercial capital structure range. For the generation SOCs debt funding of more than 50 per cent of new investment, would increase debt levels to commercially unsustainable levels, thereby negatively impacting on their stand-alone credit ratings and resultant cost of debt.

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\(^{21}\) For the purpose of the NSW State Budget, SOCs are a subset of the Public Trading Enterprise Sector.

\(^{22}\) Measured by debt / (debt plus equity)
Consequently, the cost of the investment pathway would require 50 per cent debt funding from the energy SOCs and 50 per cent ‘equity’ funding from general government sector. In the absence of offsetting reductions in the GGS’s own capital programme, which is dominated by roads and social infrastructure, the general government sector would need to increase its own borrowings to provide equity injections to the energy SOCs.

The additional investment should generate earnings sufficient to cover the increased SOC interest costs and provide a return (through tax and dividends) on the Government’s equity investment. Historically, investments undertaken in electricity have not always been commercially successful. Actual returns have varied and will depend on market conditions. Investment in the competitive generation segment has risk, and returns in excess of the incremental borrowing costs are not guaranteed.

6.5 Impact on the State’s Finances

Funding the development pathway through a combination of the SOC borrowings and Government equity injections will impact on both the General Government Operating Statement and Total State Sector Balance Sheet:

**How would the General Government Operating Statement be affected?**

The General Government operating statement may be improved as a result of any higher dividend and tax equivalent payments resulting from the general government sectors increased equity in the PTE sector. However, the operating statement will be lower by the increased interest costs on the additional GGS debt required to fund required equity injections.

Increased dividend and tax equivalent payments should at least offset increased finance costs as the Government should receive a return on its equity investment at least equal to the Government’s cost of debt. While on average this may be case over the life of the investment, dividends will vary from year to year and hence a degree of increased volatility will be introduced to the General Government Budget Result.

Overall, any operating statement impacts increase gradually over the medium term and are of the order of an extra $10 million to $20 million a year. This is minor when compared to impacts on the State’s Balance Sheet. Potential positive impacts on the Budget result should also be considered in conjunction with the high-risk nature of generation / retail investment and resultant impacts on the State’s overall risk profile.
**How would the balance sheet be affected?**

Medium-term financial projections carried out by NSW Treasury indicate that significant increases in infrastructure spending as set out in the State’s Infrastructure Plan will put pressure on the State’s balance sheet, even before the impacts of the electricity sectors investment pathway are factored in. Funding the investment pathway will further increase debt levels in both the GG and PTE sectors.

Overall, the investment pathway will be funded entirely by additions to Total State Sector net debt. Increased borrowing will be required by the GG sector to fund PTE equity injections. The PTE sector will require further borrowings to fund the remaining 50 per cent of the investment pathway.

**Debt would increase by over $12 billion**

The investment pathway will increase Total State debt by almost $12.8 billion by 2020, reflecting the total mid-point investment path of $13.5 billion, partially offset by projected cumulative operating surplus impacts of around $0.7 billion. The impacts on both GGS and PTE debt (and aggregate Total State debt), are shown in Figure 6.2:

![Impact on Total State Debt ($ billion)](image)

The State’s total Net Worth will remain unchanged, as increased borrowings will be offset by a corresponding increase in assets.
How could the State’s credit rating be affected?

The objective of the Government’s medium-term fiscal strategy is to maintain service delivery, notwithstanding economic and fiscal shocks. This is achieved by maintaining low levels of net debt and net financial liabilities so that the State can absorb the effects of cyclical revenue fluctuations by allowing a temporary increase in borrowings rather than having to reduce services or raise taxes. The State’s balance sheet has improved substantially over the last decade with both net debt and net financial liabilities declining substantially as a share of the economy in both the general government and total State sectors.

Net debt is already increasing

However, in recent years a combination of cyclical and structural events has led to lower State Budget surpluses. In combination with recent increases in the capital spending program, including in the non-commercial PTE sector, net debt in the general government sector is projected to increase over the forward years. At the same time, however, the PTE sector has a large capital spending program, which will lead to a substantial rise in its net debt and that of the total State sector over the next decade. Appendix 6.4 provides more detail on the State’s capital investment program.

PTE sector net debt increased from around $8 billion in 1995 to $13.8 billion in 2006, but has remained relatively flat as a percentage of GSP at just over 4 per cent. However, PTE net debt is projected to increase rapidly over the next 5 years, reflecting increased capital investment, reaching $33 billion in 2011 (7.8 per cent of GSP).

To assist the Inquiry, NSW Treasury was asked to develop a medium-term fiscal model to analyse the impacts of funding the State’s electricity generation needs. The starting point for this modelling is the Budget and forward estimates as contained in the 2007-08 State Budget. This provides information through to 2010-11. Beyond this period, projections of the operating statement and balance sheet for the general government, PTE, and total State sectors were developed out to 2019-20, including the impacts from the required electricity funding considered above.

The first part of the modelling projected the General Government operating balance beyond the forward estimates. While general government revenue growth can be volatile it has averaged around 5 per cent growth per year over the last decade. Expenses growth has been above that trend growth in recent years, but global savings measures and the government’s wages policy are designed to slow expenses growth to trend revenue growth. With revenue growth equal to expenditure growth the currently projected operating surpluses of around $500 million per annum over the forward estimates are maintained beyond the forward estimates period.
Capital spending beyond the forward estimates period utilises the Government’s announced ten year capital expenditure program, the State Infrastructure Strategy. Forecasts for the general government and PTE sectors are then aggregated to provide a total State forecast. Utilising these assumptions, projections beyond the forward estimates period suggest that the State's balance sheet and operating statement will be under pressure, even before the impacts of new generation investment are factored in.

The capital expenditure program contributes to average annual net lending deficits of over $1.7 billion in the general government sector in the years beyond the forward estimates. The scenario would see general government net debt increase from $7.4 billion (1.8 per cent of GSP) in 2011 to $22.7 billion (3.6 per cent of GSP) in 2020 and be on a continual rising trend. Total State net debt also rises in the years beyond the forward estimates, with total state debt rising from $39.3 billion (9.3 per cent of GSP) in 2011 to $77.4 billion (12.1 per cent of GSP) in 2020.

**Government investment in generation could threaten the credit rating**

Figure 6.3 shows the possible changes in net debt in the general government sector and total State sector over the coming decade with and without electricity retail and generation investment. It shows that, under these assumptions, total State net debt would approach levels (as a share of GSP) similar to when New South Wales was placed on CreditWatch for a possible rating downgrade in 1991. Indeed with public sector provision of generation investment, total State net debt would exceed the levels that were reached in 1991.

Apart from the level of debt, ratings agencies also focus on the speed of accumulation of debt. Under the public sector provision of generation scenario, total State debt continues to rise at roughly the same pace, with no signs of levelling out or the pace dampening. Such a trend would cause concern for the rating agencies.

Ratings agencies also pay attention to the composition of the total State revenue required to meet debt obligations, viewing revenue from public trading enterprises operating in competitive markets as inherently more risky than general government revenue.
The balance of risks around the projections is weighted toward higher rather than lower levels of debt. First, the projected alignment between rates of growth of expenditure and revenues may not be maintained, which has been the experience over the past four years, where expenditure has tended to exceed revenue growth by around one percentage point a year. Secondly, the 2007-08 State Budget forward estimates assume that the growth in wage costs will be constrained to no more than 2½ per cent a year, whereas in recent years wage costs have grown by in excess of 4 per cent a year.

Further, as reported in the NSW 2006-07 State Budget Paper No. 6 NSW Long-Term Fiscal Pressures Report, the State’s primary fiscal position is likely to deteriorate over the decade, in the absence of any policy change, as a result of increased expenditure pressures, both demographic and non-demographic in origin.

Ageing of the population will be a significant driver of expenditure pressures in health and social security and welfare. However, the report found that two thirds of overall expenditure pressures will come from non-demographic sources, reflecting the underlying growth in demand for government services, driven by rising living standards and community expectations, and the rising cost of new medical technologies and medicines.

If these higher expenditure pressures come to pass, total State net debt would increase at a faster pace beyond the forward estimates than projected, and would heighten the risk surrounding the maintenance of the State’s AAA credit rating.
The State’s current and committed capital program and the benefits accruing from this program are set out in further detail in Appendix 6.4.

**Would government funding generation cause a credit rating downgrade?**

Any additional debt funding will intensify the pressure on the State’s credit rating. Under the electricity retail and generation investment scenario, total State sector net debt will rise to $90.2 billion or 14.1 per cent of GSP in 2020, compared to $77.4 billion or 12.1 per cent without publicly funding new generation expenditure.

Perhaps more importantly, the new generation investment increases the weighting of competitive assets within the State’s total PTE portfolio. This increases the reliance on revenue from competitive markets in order to meet debt obligations which places further downward pressure on the State’s credit rating.

**Electricity generation is commercially risky**

Credit rating agencies consider electricity generation as ‘the riskiest segment of the electricity utility industry because of the complex operating risks and the increasingly competitive nature of the business’. Given that Standard and Poor’s has previously highlighted the importance of keeping PTE spending under control, further significant investment in the riskiest segment of the electricity sector would raise questions as to the State’s commitment to managing PTE expenditure.

One of the key measures that ratings agencies use to assess financial performance is the ratio of net debt to operating revenues. This provides an assessment of the State’s debt servicing capacity or ability to repay its debt. The lower the ratio, the higher the State is rated.

However, the composition of State revenues is important to ratings agencies in this context. The more revenues that are sourced from competitive public trading enterprises, where the revenue stream is riskier and hence less predictable than for regulated public trading enterprises or the general government sector, the lower the ratio of debt to operating revenues would be for a particular credit rating. Thus a State which relied on relatively more of its revenues from competitive public trading enterprises, such as electricity generation, would need to have less net debt than a comparably rated State which relied less on such revenues. To the extent this is the case, further public investment in the electricity generation sector in New South Wales will tend to crowd out other capital spending programs that could be wholly or partially debt funded by the Government.

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It is difficult for the Inquiry to state categorically that continued Government ownership and investment in the State’s electricity industry would provide a tipping point for the State’s AAA credit rating. Although it is relatively straightforward to model the financial impacts, rating agencies include qualitative as well as quantitative factors in their assessments. Moody’s has identified six key factors:

- the operating environment, i.e., national circumstances that affect the risk of an economic, financial market or political crisis
- the institutional framework that determines local government powers and responsibilities
- financial condition and performance
- the debt profile
- governance and management practices
- economic fundamentals.\(^{24}\)

**Public funding will have negative impact compared to private funding**

Although forecasting government credit rating outcomes is necessarily inexact, it seems clear that public funding of electricity generation will be a negative influence on the State’s credit rating.

The Inquiry was conscious that the ability of the Government to fund the State’s emerging generation needs while maintaining the AAA credit rating was dependent on the estimated cost to do so. The Inquiry was also conscious with regard to the wide range of variability and outcomes in estimating such a cost.

Therefore, the Inquiry considers it important to highlight three key points relating to publicly funding new generation:

- First, it is not solely the size of required funding but its characteristics in terms of increasing the risk of the Total State Debt, and the signals it sends to credit ratings agencies with regard to the Governments’ forward capital program and its impacts on key financial metrics

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\(^{24}\) Moody’s Investors Service, Rating Methodology - Local and Regional Governments Outside the US, October 2006
• Second, and perhaps more importantly, public investment in funding is not essential, so any associated funding requirement be it $1 billion or $10 billion will be at an opportunity cost to the public as these funds could have been allocated to the provision of other Government services. If the energy market is operating efficiently and the regulatory system is working properly then having a secure energy supply, competitive prices for consumers and protections for environment can be secured without government investment. While ultimately a decision for Government, the Inquiry considers that public investment in electricity generation (which can be funded by the private sector) should not come at the expense of investments in health, education and transport which are not likely to be made by the private sector.

• Third, as discussed in Chapter 7, the alternative to publicly funding the State’s emerging generation needs is to privately funding them. To ensure the private sector invests the Inquiry recommends that the Government divest its electricity generation and retail interests. Comparing the fiscal impact of these two scenarios further highlights, in the Inquiry’s view, that it is not just the order of magnitude of the funds required to publicly fund new generation but also the fiscal benefits from meeting the conditions for private investment. From the State’s fiscal position, when comparing public sector and private sector funding of new generation, private sector funding will:

  • mitigate the need for an approximate $12 billion- $15 billion increase in total State sector net debt associated with continued ownership of generation and retail
  • release funds – otherwise unavailable to Government – to improve the State’s fiscal position. These funds will arise from the sale of the State-owned electricity activities and economic interest of the generators necessary to create an environment where the private sector is willing and able to invest in significant generation in New South Wales. The Inquiry is not in a position to speculate on potential proceeds realised from a sale, but others in the public domain have speculated that $10 billion net of the debt in generation businesses\(^{25}\) may be possible. Without endorsing this number the Inquiry puts it forward to inform the public of the order of magnitude of the potential changes in the NSW fiscal position.

\(^{25}\) Sales proceeds reflect a normalised estimate from all the valuations made through public speculation during the course of this Inquiry.
Assuming that the PTE sector and the general government sector jointly fund new base load generation capacity, there will be a significant impact on the State’s fiscal position. Under this scenario total State sector net debt will rise to approximately 14.1 per cent of Gross State Product (GSP) in 2020 (based on the $13.5 billion total investment path mid-point).

If the generation and retail interests are sold the State Budget Result is impacted by reduced interest costs on general government Debt offset by foregone dividend and tax equivalent payments from generators and retailers. To give an indication of the degree of flexibility that divestment of the retail and generation sectors could provide to the State’s balance sheet, if net proceeds of $10 billion was used to reduce GGS net debt then Total State Debt increases are limited to 10.0 per cent of GSP in 2020 under this scenario, compared to 14.1 per cent under the public funding scenario.

The impacts are set out in Figure 6.4.

**Figure 6.4: Total State Net Debt as a Percentage of Gross State Product**

![Figure 6.4: Total State Net Debt as a Percentage of Gross State Product](image)

**Note:** the ‘base case’ is the State’s current and committed capital program as set out in Appendix 6.4.