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## 8 *Economic information and government policies*

### 8.1 INTRODUCTION

This chapter summarises the economic outlook and key policy assumptions used by the jurisdictional planning bodies (JPBs) to prepare the energy and maximum demand (MD) projections.

KPMG was engaged by Australian Energy Market Operator (AEMO) to develop medium, high and low economic growth and energy policy scenarios, which are described in the KPMG reports <sup>[1-3]</sup>.

- Stage 1, key energy policies and economic drivers;
- Stage 2, economic scenarios and forecasts for the regions; and
- Stage 3, semi-scheduled, non-scheduled and exempted generation.

The reports:

- provide key economic data and modelling inputs and assumptions; and
- were provided to the JPBs for the preparation of their regional energy and MD projections.

In response to significant changes to the Carbon Pollution Reduction Scheme (CPRS) and the national Renewable Energy Target (RET) scheme announced by the Federal Government, an addendum to the Stage 1 report was commissioned in May 2009 <sup>[4]</sup>.

KPMG noted that there were a number of market and policy developments, implying significant uncertainty that made electricity consumption and demand forecasting more complex.

#### Application to the Supply-Demand Balance

The KPMG Stage 1, 2 and 3 reports provide a consistent basis for the development of the regional energy and MD projections in Chapter 3, which form inputs into the supply-demand outlook analysis in Chapter 2.

#### 8.1.1 Overview

##### Key Information

In this chapter:

- Section 8.2 'Economic outlook' presents a summary of the economic outlook provided to the JPBs for the preparation of their projections and a comparison with alternative economic forecasts.
- Section 8.3 'Energy policies and energy market developments' lists the principal energy policies and relevant market developments that were considered by KPMG in preparing its reports.

#### 8.1.2 Changes since the 2008 ESOO

Changes since the 2008 Electricity Statement of Opportunities (ESOO) include:

- variations in the economic outlook (generally resulting in lower energy and MD projections); and
- a new bottom-up approach to scenario development, resulting in lower variation between the medium, high and low economic scenarios.

### 8.2 ECONOMIC OUTLOOK

#### 8.2.1 The relationship between electricity demand and economic activity

Economic activity is strongly correlated with electricity usage because:

- increases in production usually require more energy; and
- increases in income result in higher consumption.

Electricity prices and consumption are negatively correlated. The impact, however, of a change in electricity prices:

- is relatively weak, due to the sunk (unrecoverable) costs of electrical equipment and the generally low proportion of electricity cost in a typical consumer's budget; and
- depends on the relative price of available substitute energy sources.

Over time, the number and mix of domestic, commercial and industrial electrical appliances may

change in response to sustained changes in economic activity, electricity prices, and technologies.

Population growth can also contribute directly to new electricity connections as well as indirectly to stronger economic activity.

The primary drivers of electricity consumption are distinct over the short and long term. In the very short term, the impacts of weather and habitual behaviour predominate over any underlying trend. Historical trends may also be altered by the introduction of energy-specific policies. As a result, the energy and MD projections are not entirely determined on the basis of the economic outlook, despite its substantial long-term impact.

### 8.2.2 Economic outlook for the NEM

This section summarises the economic outlook provided by KPMG <sup>[2]</sup> for each region in terms of forecast gross state product (GSP) growth.

The current economic downturn has resulted in lower economic growth forecasts compared to the 2008 ES00, particularly for 2008/09 and 2009/10. The KPMG forecasts were developed:

- for three scenarios, comprising a:
  - medium growth scenario, representing the most probable outcome, based on a nationally-consistent set of input assumptions;
  - high growth scenario, representing a more optimistic set of assumptions; and
  - low growth scenario, representing a more pessimistic set of assumptions; and
- using a bottom-up approach by altering the inputs to the forecasting model.

KPMG advises that while the resulting high and low growth rates are generally higher or lower (respectively) than the medium growth scenario, they are:

- not necessarily consistently high or low in every year; and
- less divergent than economic scenarios developed for previous ES00s.

The growth rates are consistent with KPMG's stated expectation that persistent high or low deviations in growth are unlikely to be sustained <sup>[2]</sup>.

KPMG advises that the sources of uncertainty in the forecasts focus on <sup>[2]</sup>:

- Australian demographic assumptions;
- the proposed CPRS (see Section 8.3.1 for more information); and
- the current global financial crisis and associated economic downturn.

Table 8.1 to Table 8.5 lists the GSP growth rates for each region. This information includes:

- actual values for the financial years 2004/05 to 2007/08;
- medium, high and low-growth scenario projections for 2008/09 based on partial data for the year;
- medium, high and low-growth scenario projections and a comparative projection for the next 10 years;
- comparative medium growth projections from the 2008 ES00; and
- average annual projected growth rates for the period 2009/10 to 2017/18.

### Comparison with alternative economic outlooks

For the purposes of comparison, each table shows an equivalent regional economic outlook published by Access Economics in April 2009 <sup>[5]</sup>. Access Economics bases its forecasts on what it considers to be most likely, and does not include high or low growth scenarios.

When comparing the Access Economics growth rates with the 2009 ES00 growth scenarios:

- the Access Economics annual average growth rates are either equal to or lower than the low-growth scenario for all regions; and
- South Australia and Tasmania show the greatest divergence between the different forecasts.

### Comparing average annual growth rates

Comparing average annual growth rates for the 2008 and 2009 ES00 medium-growth scenarios shows that growth is:

- 0.1% lower in Queensland;
- 0.2% lower in New South Wales;
- 0.3% lower in Victoria;
- 0.5% higher in South Australia; and

- 1.0% lower in Tasmania.

**Table 8.1 Queensland GSP Growth Rates (%)**

Financial Year	KPMG			Access Economics	2008 ESOO Medium
	Medium	High	Low		
2004/05 actual	4.9				
2005/06 actual	3.6				
2006/07 actual	4.6				
2007/08 actual	5.4				5.0 <sup>1</sup>
2008/09 estimate	0.9	1.3	0.6	1.4	4.3 <sup>2</sup>
2009/10	0.3	0.9	-0.8	1.1	3.5
2010/11	4.6	5.0	3.6	1.6	2.6
2011/12	4.8	5.3	4.5	4.4	4.9
2012/13	4.7	4.9	5.1	5.1	5.5
2013/14	5.1	5.8	6.2	5.2	3.8
2014/15	4.5	5.7	5.0	4.6	4.6
2015/16	4.6	5.1	4.3	3.5	3.1
2016/17	4.4	3.9	4.4	4.1	5.0
2017/18	3.1	2.3	3.4	4.9	4.5
2018/19	2.5	1.6	2.2	4.6	
Average 2009/10 to 2017/18	4.1	4.4	4.0	3.9	4.2

1. The 2008 ESOO estimate for 2007/08.

2. The 2008 ESOO projection for 2008/09.

**Table 8.2 New South Wales GSP Growth Rates (%)**

Financial Year	KPMG			Access Economics	2008 ESOO Medium
	Medium	High	Low		
2004/05 actual	1.7				
2005/06 actual	2.1				
2006/07 actual	2.1				
2007/08 actual	2.6				2.5 <sup>1</sup>
2008/09 estimate	-0.2	0.0	-0.4	-2.0	2.4 <sup>2</sup>
2009/10	-0.6	-0.6	-1.0	-2.0	1.7
2010/11	2.6	2.7	2.0	3.0	1.4
2011/12	2.0	2.3	1.5	3.1	2.8
2012/13	2.2	2.5	2.3	2.6	3.3
2013/14	3.1	3.8	3.7	3.4	2.6
2014/15	2.7	3.8	3.0	2.7	3.3
2015/16	3.0	3.6	2.4	1.6	1.8
2016/17	3.2	3.0	3.0	2.2	2.7
2017/18	2.4	1.8	2.7	3.0	2.5
2018/19	1.8	1.3	1.8	2.5	
Average 2009/10 to 2017/18	2.3	2.6	2.2	2.2	2.5

1. The 2008 ESOO estimate for 2007/08.

2. The 2008 ESOO projection for 2008/09.

**Table 8.3 Victorian GSP Growth Rates (%)**

Financial Year	KPMG			Access Economics	2008 ESOO Medium
	Medium	High	Low		
2004/05 actual	2.4				
2005/06 actual	2.6				
2006/07 actual	2.6				
2007/08 actual	2.8				3.5 <sup>1</sup>
2008/09 estimate	-0.9	-0.6	-1.1	-1.2	2.6 <sup>2</sup>
2009/10	-0.8	-0.4	-1.7	-0.4	2.1
2010/11	2.7	3.2	1.6	2.9	1.6
2011/12	2.3	2.7	1.9	2.9	3.5
2012/13	2.5	2.6	2.9	2.2	3.2
2013/14	3.2	3.7	4.1	3.1	2.9
2014/15	2.8	3.8	3.2	2.7	3.3
2015/16	3.3	3.8	2.9	2.1	1.9
2016/17	3.4	3.2	3.4	2.7	3.1
2017/18	2.5	1.9	2.8	3.3	3.1
2018/19	2.0	1.4	1.9	2.8	
Average 2009/10 to 2017/18	2.4	2.8	2.4	2.4	2.7

1. The 2008 ESOO estimate for 2007/08.
2. The 2008 ESOO projection for 2008/09.

**Table 8.4 South Australian GSP Growth Rates (%)**

Financial Year	KPMG			Access Economics	2008 ESOO Medium
	Medium	High	Low		
2004/05 actual	1.0				
2005/06 actual	2.3				
2006/07 actual	0.6				
2007/08 actual	3.7				2.8 <sup>1</sup>
2008/09 estimate	2.6	2.9	2.3	1.1	2.7 <sup>2</sup>
2009/10	1.2	1.9	0.3	0.2	1.6
2010/11	3.9	4.5	2.9	2.8	1.2
2011/12	2.8	3.1	2.6	3.0	2.4
2012/13	2.4	2.7	2.7	2.3	2.4
2013/14	2.8	3.5	3.2	2.8	2.5
2014/15	2.7	3.7	2.5	2.1	2.8
2015/16	3.1	3.3	2.7	2.3	1.8
2016/17	2.9	2.6	3.0	1.3	2.7
2017/18	2.0	1.5	2.2	1.8	2.4
2018/19	1.8	1.4	1.5	1.8	
Average 2009/10 to 2017/18	2.7	3.0	2.5	2.1	2.2

1. The 2008 ESOO estimate for 2007/08.
2. The 2008 ESOO projection for 2008/09.

**Table 8.5 Tasmanian GSP Growth Rates (%)**

Financial Year	KPMG			Access	2008 ESOO
	Medium	High	Low	Economics	Medium
2004/05 actual	3.4				
2005/06 actual	2.1				
2006/07 actual	2.1				
2007/08 actual	1.7				1.9 <sup>1</sup>
2008/09 estimate	-0.7	-0.4	-0.9	1.2	3.0 <sup>2</sup>
2009/10	-2.6	-2.0	-3.5	0.6	3.1
2010/11	2.4	2.9	1.4	2.9	4.7
2011/12	2.8	3.2	2.4	3.2	4.6
2012/13	3.1	3.1	3.6	2.2	1.9
2013/14	3.2	3.6	4.7	1.8	1.6
2014/15	2.4	3.4	3.2	2.4	2.5
2015/16	2.8	3.2	2.5	2.7	3.0
2016/17	2.9	2.5	2.8	1.3	3.3
2017/18	1.8	0.9	2.2	1.2	3.1
2018/19	1.2	0.3	1.1	1.5	
Average 2009/10 to 2017/18	2.1	2.3	2.2	2.1	3.1

1. The 2008 ESOO estimate for 2007/08.
2. The 2008 ESOO projection for 2008/09.

**Table 8.6 2009/10 Federal Budget and KPMG GDP Growth Rates (%)**

Financial Year	Federal	KPMG		
	Budget	Medium	High	Low
2008/09	0	0.1	0.4	-0.1
2009/10	-0.5	-0.2	0.1	-1.0
2010/11	2.25	3.6	3.9	2.9
2011/12	4.25	3.3	3.7	3.0
2012/13	4.25	3.2	3.5	3.6
Average	2.1	2.0	2.3	1.7

### 8.2.3 Other economic outlooks

Other economic outlooks particularly recent Commonwealth Government GDP projections and New South Wales Government GSP projections<sup>[6;7]</sup> may show higher rates of recovery than the outlooks presented by KPMG (which form the basis for the energy and MD projections) or Access Economics.

The different economic scenarios and resulting energy projections demonstrate that higher economic growth causes higher energy consumption (see Appendix B for more information about the energy and MD projections for the various economic scenarios).

Table 8.6 compares the Australian GDP growth rates used in preparing the 2009/10 Federal budget<sup>[6]</sup> with the KPMG GDP projections<sup>[2]</sup> underpinning the various GSP growth projections.

## 8.3 ENERGY POLICIES AND ENERGY MARKET DEVELOPMENTS

KPMG was engaged to report on possible energy policy inputs for the development of the energy and MD projections. These reports<sup>[1;4]</sup> discuss a number of government policy initiatives that might significantly impact energy markets within the timeframe of the ESOO. The reports also identify

economic drivers as well as key international and domestic energy sector developments.

The government policy initiatives identified by KPMG (Stage 1 Report) <sup>[1]</sup> are:

- used by KPMG to develop their economic scenarios (Stage 2 Report) <sup>[2]</sup> and non-scheduled generation projections (Stage 3 Report) <sup>[3]</sup>; and
- considered by the JPBs when developing their energy and MD projections (along with the other reports provided by KPMG) (see Chapter 3 for more information).

KPMG advises that key policy elements, including the proposed CPRS and national RET scheme, are uncertain and expected to vary by the time they are implemented.

### 8.3.1 National and Federal Government policies

The National <sup>1</sup> and Federal Government policies listed in the KPMG Stage 1 report and addendum include the following <sup>[1,4]</sup>:

- The CPRS, which aims to reduce greenhouse gas emissions by setting a limit (or 'cap') on the level of emissions allowed from certain types and sources of emissions, and allowing a permit trading market to set a price on the emissions that occur (cap and trade design). Proposed to start in mid-2011 the scheme aims to reduce emission by up to 25% by 2020. See the KPMG Stage 1 report addendum <sup>[4]</sup> for an up-to-date assessment.
- The national RET scheme, which aims to increase the uptake of renewable energy sources. Renewable energy sources earn Renewable Energy Certificates (RECs) purchased by energy retailers and surrendered to meet relevant renewable energy targets. See the KPMG Stage 1 report addendum <sup>[4]</sup> for an up-to-date assessment.
- The solar hot water rebate, which promotes the replacement of electric hot water systems installed on, or after 18 July 2007 (until March 2012) with solar or heat pump hot water systems.

- The National Framework for Energy Efficiency (NFEE), which is a package of energy efficiency measures, including:
  - Minimum Energy Performance Standards (MEPS) for appliances and equipment (recently expanded);
  - an incandescent light bulb phase-out;
  - a heating, ventilating, and air conditioning (HVAC) high efficiency system strategy; and
  - a national water heater strategy.
- The Green Loans Program, which provides household sustainability assessments and green renovations packs to households, as well as access to low interest Green Loans of up to \$10,000, to make existing homes more energy and water efficient
- The Generator Efficiency Standards (GES), which require all fossil-fuelled generation to meet efficiency standards and to reduce greenhouse gas intensity (GHGI).
- The Nation Building and Jobs Plan, which includes an insulation package to insulate up to 2.2 million homes over three years.
- Other measures providing support for new low emissions technologies, which include:
  - the \$500 million Renewable Energy Fund;
  - approximately \$150 million for solar and clean energy research; and
  - more than \$500 million for the Solar Cities, National Solar Schools, and Green Precincts initiatives.

### 8.3.2 State Government policies

The State Government policies listed in the KPMG Stage 1 report include the following <sup>[1]</sup>:

- The Queensland, Victorian, and South Australian State Governments have adopted feed-in tariffs that aim to provide a premium for small generating unit operators supplying power to the grid.
- The Victorian Energy Efficiency Target (VEET) aims to reduce greenhouse gas emissions attributable to the Victorian residential sector.

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<sup>1</sup> Refers to policies jointly developed by the Federal and State Governments.

- The New South Wales Energy Saving Scheme<sup>2</sup> aims to establish a trading scheme to enhance market-based incentives for energy efficiency, and provide incentives for private sector innovation. Certificates for approved energy efficiency activities are generated or traded to meet energy efficiency targets.
- The South Australian Residential Energy Efficiency Scheme (REES) sets an energy efficiency target obliging energy retailers to implement energy efficiency improvements in households (such as ceiling insulation, draught proofing, and appliances that are more efficient).
- The Queensland Gas Scheme aims to diversify Queensland's energy mix with greater gas usage, encourage the development of new gas sources and infrastructure, and reduce greenhouse gas emissions. Gas Electricity Certificates (GECs) are created for every MWh of eligible gas-fired electricity produced.
- The New South Wales Greenhouse Gas Reduction Scheme (GGAS) aims to reduce greenhouse gas emissions associated with the production and use of electricity. The scheme is based on New South Wales Greenhouse Abatement Certificates (NGACs), which are worth the equivalent of one tonne of CO<sub>2</sub>.

Chapter 6 also lists the:

- New South Wales Renewable Energy Target (NRET) scheme;
- Victorian Renewable Energy Target (VRET) scheme; and
- South Australian Climate Change and Greenhouse Emissions Reduction Act.

These schemes are not treated individually by KPMG because it is expected that they will be rolled up into the national RET scheme.

### 8.3.3 Other developments

The KPMG Stage 1 report identifies other developments with the potential to affect electricity usage and demand, which include:

- the roll-out of smart metering, which aims to improve price signals for energy consumers, allowing them to better manage demand at times of MD;
- widespread adoption of hybrid electric vehicles;
- carbon capture and storage, which is supported by the Federal Government through the Global Institute; and
- alternative electrical energy technologies incorporating:
  - nuclear energy, which is not supported by the Federal Government as a solution to climate change; and
  - wave energy developments, mostly located in South Australia, and still in the initial development stages.

## 8.4 REFERENCES

- [1] KPMG, 3/09. "Key Energy Policies and Economic Drivers (Stage 1 Report)." (Available on the ESOO CD)
- [2] KPMG, 3/09. "Economic Scenarios and Forecasts for the NEM Regions 2008-09 to 2028-29 (Stage 2 Report)." (Available on the ESOO CD)
- [3] KPMG, 3/09. "Semi-scheduled, Non-scheduled and Exempted Generation, by Fuel Source in NEM Regions 2008-09 to 2028-29 (Stage 3 Report)." (Available on the ESOO CD)
- [4] KPMG, 5/09. "Key energy policy and economic drivers Addendum (Supplementary Report)." (Available on the ESOO CD)
- [5] Access Economics, 4/09. "Business Outlook March 2009.", Access Economics Pty Ltd, Canberra
- [6] Australian Government Department of the Treasury, 7/09. "2009-10 Budget Overview.", <http://www.budget.gov.au/2009-10/content/overview/html/index.htm>
- [7] New South Wales Government Department of Treasury, 7/09. "Budget Statement 2009-10 Budget Paper No. 2.", [http://www.budget.nsw.gov.au/bp09-10/bp2/2009-10\\_budget\\_paper\\_2](http://www.budget.nsw.gov.au/bp09-10/bp2/2009-10_budget_paper_2)

<sup>2</sup> Prior to 27 February 2009 this scheme was known as the New South Wales Energy Efficiency Trading Scheme (NEET). See the New South Wales Government website for more information.