Electrical energy and customer number projections for Essential Energy in New South Wales to 2024-25

A report for
ESSENTIAL ENERGY

Prepared by the
National Institute of Economic and Industry Research (NIEIR)
ABN: 72 006 234 626
416 Queens Parade, Clifton Hill, Victoria, 3068
Telephone: (03) 9488 8444; Facsimile: (03) 9482 3262
Email: admin@nieir.com.au

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1. Introduction

Essential Energy invited the National Institute of Economic and Industry Research (NIEIR) to prepare electricity forecasts for the Essential Energy distribution region in New South Wales to 2024-25.

The scope of works as outlined in the study brief was to:

- prepare electrical energy forecasts by class and network tariff for Essential Energy for a base or most likely scenario, separating hot water load; and
- fully document the methodological approach, assumptions in a report incorporating graphics, text and tables.

This work for Essential Energy updates previous work undertaken by NIEIR for Essential Energy (previously known as Country Energy) since 2003.

Essential Energy requested NIEIR to prepare two alternative scenarios for electricity sales:

- a scenario based on the AEMO economic outlook for New South Wales (NSW); and
- a scenario based on NIEIR's assessment of the economic outlook for New South Wales.

The difference between the projections in terms of the aggregate indicators is given in Table 1.1. The AEMO projections imply that NSW growth, and in particular labour productivity growth, will return to long-run historical trends. The argument of this report is that this is unlikely, with the result that labour productivity in 2027 for NSW, from NIEIR's view, is 5 per cent below the AEMO projection. Secondly, the AEMO projections imply that the excess demand for dwellings built up over the 2000 to 2014 period will be steadily reduced over the next 15 years, allowing a high rate of growth of independent households relative to population growth. The NIEIR view is that the deficiency in dwelling supply will increase over the projection period.

Table 1.1 NSW indicators Base case – ratio of NIEIR to AEMO (per cent)

	Gross State Product	Employment	Households	Population
2015	101.3	99.9	99.2	100.0
2016	100.4	100.0	98.5	99.9
2017	99.3	100.0	97.4	99.8
2018	98.6	100.3	95.6	99.5
2019	98.4	101.0	93.6	99.4
2020	98.1	101.5	91.9	99.3
2021	98.2	101.7	90.6	99.2
2022	97.5	101.6	89.6	99.1
2023	96.7	101.3	88.5	99.0
2024	96.0	100.9	87.5	98.9
2025	95.4	100.6	86.6	98.8

Another key reason why the NIEIR projection was developed is because the dwelling formation projections mapped down from the AEMO projection were much too high, and inconsistent with history.

2. The economic outlook for Australia to 2020

2.1 Gross domestic product (GDP)

The current underlying growth of Australian GDP is 0.6 per cent per quarter, or 2.5 per cent per annum.

The expectation would be that with the production effects of the mining expansion being particularly strong over the next couple of years with the completion of major LNG projects along with coal and iron ore enhanced supplier coupled with the upswing in housing construction of Australian economic growth would be in the vicinity of 3.5 to 4.0 per cent over the next couple of years. It is true that mining investment is projected to fall by between $30 billion and $40 billion over the next couple of years. However a large part of this fall will represent expenditures, especially on LNG plants, with very high import component. Therefore the impact on domestic economic activity will be relatively subdued.

Note in the discussion below all years are fiscal years ending.

Dwelling investment is projected to add 0.7 percentage points to the national GDP growth rate in 2015. In 2016 the impact of the dwelling cycle peaks 0.1 percentage points added to the national GDP growth rate and for the rest of the projection period dwelling makes a negative contribution. In 2014 exports are estimated to have contributed over half GDP growth rate with the contribution being 1.6 percentage points compared to the estimated national growth rate of 3 per cent. In 2015 the contribution of exports is projected to fall to 0.8 percentage points largely because of the impact of mild El Niño which will reduce the impact of an otherwise continually strong mining contribution. One percentage point plus contribution to the national GDP growth resumes in 2016 with the average contribution over the four years to 2019 being 1.4 percentage points.

The contribution of private consumption expenditure, although increasing marginally in both 2015 and 2016 by 0.1 percentage point in both years, is well below the pre-2009 contribution of an excess of two percentage points per annum. Traditionally with strong growth in dwelling prices and real wealth the expectation would be that private consumption would add additional growth of up to 1 percentage point to GDP. So why is the growth projection over the next three years in the vicinity of 2.7 per cent and not 3.5 per cent.

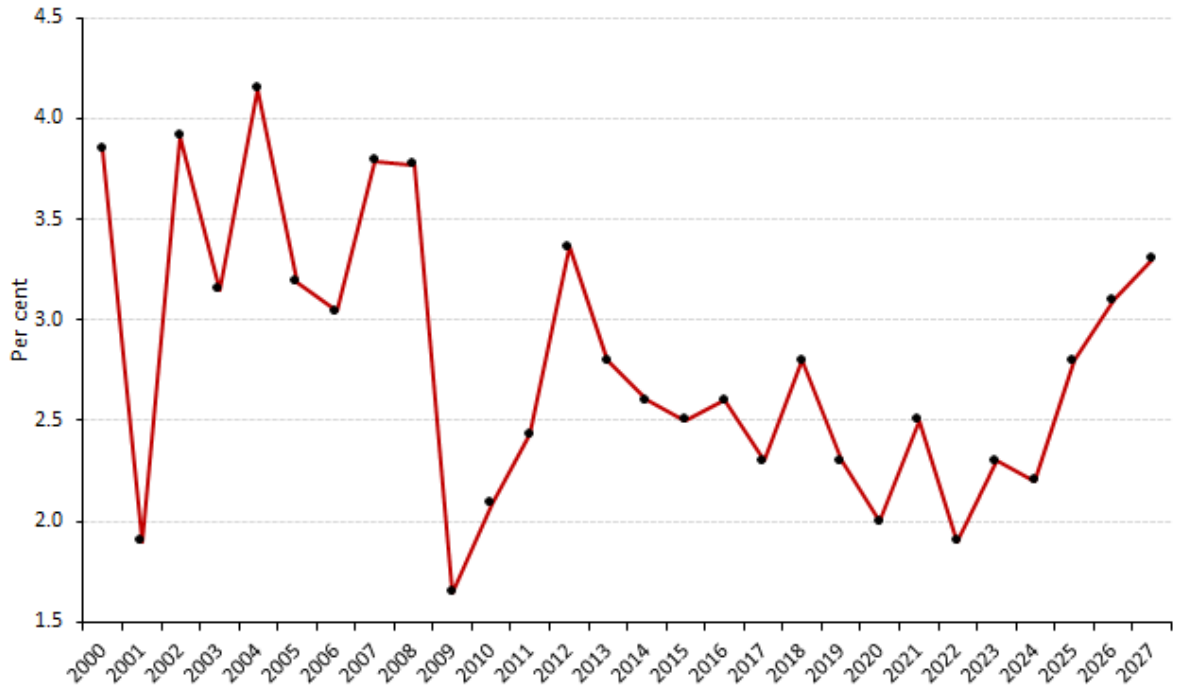
There are a number of elements contributing to this outcome. Firstly productivity growth is low due to short and long-term factors. Long-term factors include the underinvestment in infrastructure while short-term factors include the hollowing out of the Australian economy due to the so-called Dutch disease which appears to have destroyed more middle income and employment as compared to low income and employment. Secondly the steadily increasing underline unemployment rate is operating to hold down the growth in nominal wages resulting in relatively low growth in real wages. Thirdly household debt at around 190 per cent of real disposable income appears to be a saturation levels so that consumption expenditure is constrained to real income growth.

Given the decline in mining investment contribution of total business construction investment to economic growth over the next couple of years is negative but only marginally so.

Other than the sluggish growth in household consumer demand the other main reason for a subdued national GDP growth rate over the next 2 to 3 years is the growth in imports. This will be associated with the ending of motor vehicle production and the echo effects of the high exchange rate over the last three or four years which will result in the further closure of import competing capacity. Over the next two years, that is, over 2015 and 2016, the growth of import penetration is projected to reduce the national GDP growth rate by 1.2 percentage points per annum.

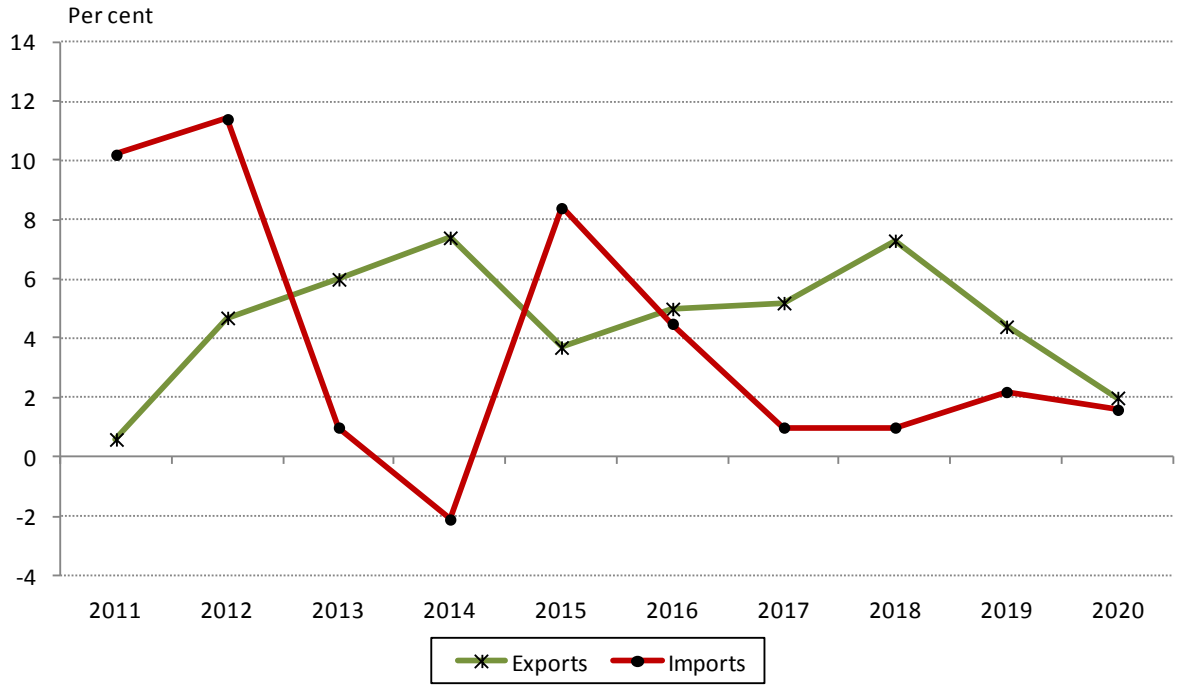
The post-2016 period is projected to a share in a period of particularly low GDP growth compared to the historical benchmarks. This will be the result of the mining sector returning to a more normal contribution to GDP growth, the continued upward increase in effective unemployment rates squeezing real income growth, higher effective interest rates rendering a negative contribution of housing and business investment to national GDP growth rate, the return of the exchange rate to more competitive levels increasing domestic prices and thereby reducing real incomes, and the lower productivity growth rates that are the direct by product of a relatively slowly growing economy. The scope for Australian policy authorities to do much about the less than satisfactory profile post 2016 will be limited by the upward trend in the current account deficit and gross debt to GDP ratio. Any attempt to increase national GDP growth rate by expansionary monetary and fiscal policies will increase the probability of meltdown to unacceptable levels given the high probabilities that currently exist

Figure 2.1: Australian GDP



Note: Financial years ending June.

Figure 2.2: Overseas exports and imports of goods and services



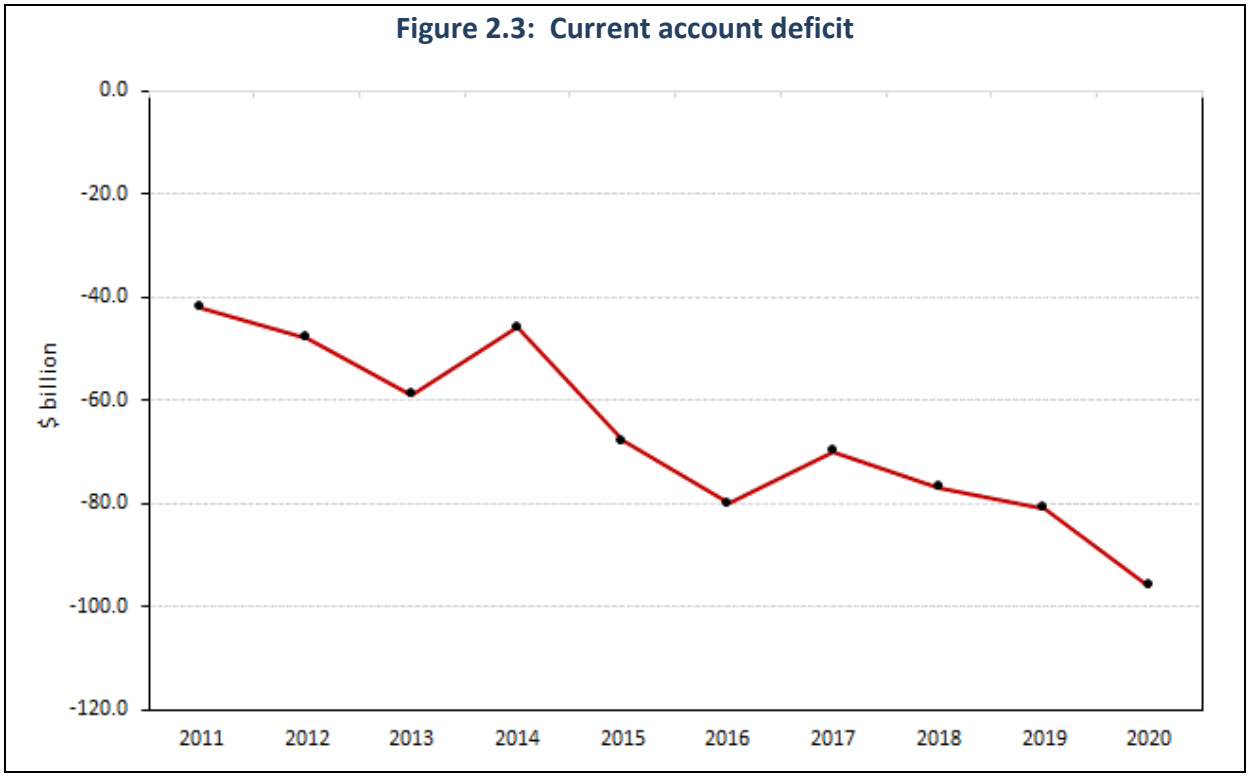
2.2 The balance of payments

The current account deficit, especially after 2016, is projected to deteriorate over the projection period. This deterioration will be driven by a number of factors. Firstly, there is the projected long-term fall in the terms of trade, a combination of lower world economic growth compared to expectations of 2 or 3 years ago, coupled with the supply response from recent peaks in commodity prices, which will combine to drive down real commodity prices. In part this will be because Australian producers, for iron ore in particular, are amongst the lowest cost producers in the world so there is an incentive, especially if they have a degree of domestic ownership, to increase production to drive down prices and increase market share knowing that the price effect will be compensated for likely falls in the Australian dollar. Nevertheless, the fall in the terms of trade from the 2012 peak is a relatively modest 30 per cent, given the pre-2004 terms of trade.

The rapid increase in income paid overseas over the next few years is driven by the recovery in world interest rates and the high mining income share that will be paid overseas because of the high foreign debt and foreign ownership of recent major mining projects.

Finally, there is the increased import penetration in the economy, due to the Dutch disease in general and the collapse of the motor vehicle industry in particular. The medium-term impact of a lower currency is likely to aggravate the current account deficit rather than reduce it. This is because of the impact of the exchange rate on Australia's foreign debt obligations and debt service ratios and the limited capacity that now exists in Australian manufacturing for import replacement.

Figure 2.3: Current account deficit



2.3 The household savings ratio

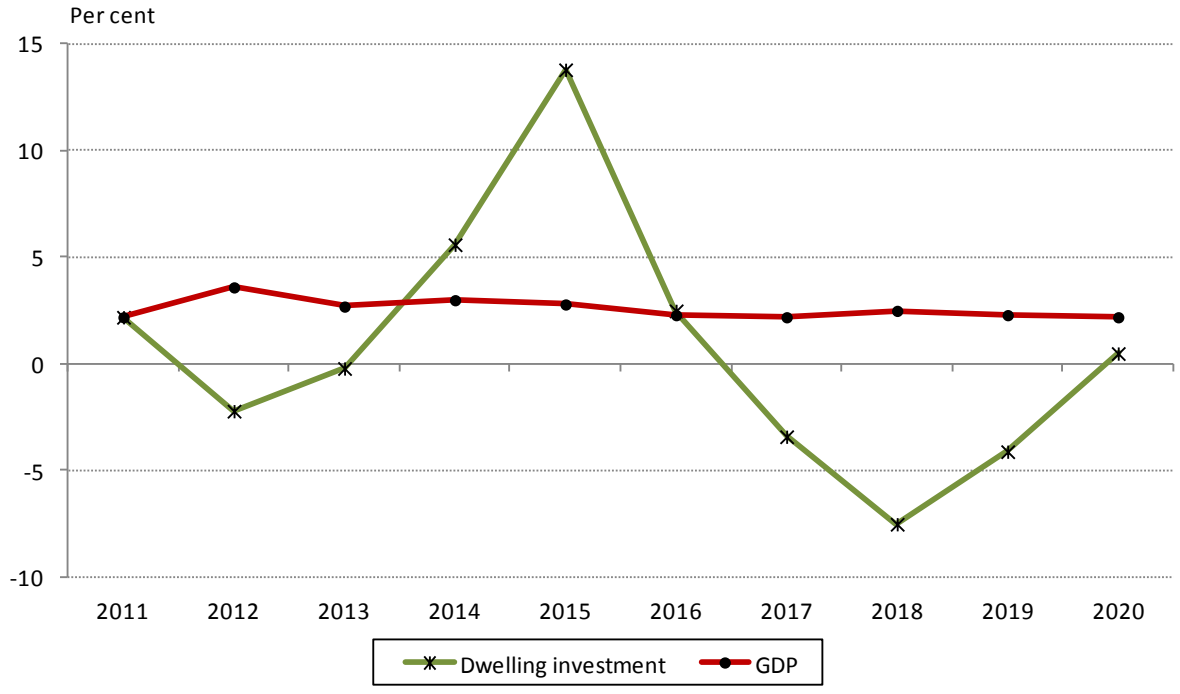
A core driver of the household savings ratio is the household debt to income ratio. With the rise in the household savings ratio at the end of 2009, the household debt to income ratio has stabilised. In the December quarter 2009 the household debt to income ratio was 180 per cent of net household income. In the March quarter 2014 it was 185 per cent, only slightly down from historical peaks in 2011. A ratio of around 185 per cent from the historical record appears to represent a ceiling, or debt saturation level, of debt given current debt service ratios.

A basic assumption of the previous projection was that the recovery of dwelling prices and the flow-on impact on wealth would encourage a downward trend in the household savings ratio and, therefore, an accelerated consumption growth that would drive national GDP growth to the 3.0 to 3.5 per cent range over 2015 and 2016. Given the stability of the household debt to income ratio at the current household savings ratio, this assumed that households would be willing to increase the debt to income ratio.

To 2016 the household savings ratio is projected to be reasonably stable at near its current levels. It should be remembered that the constructional savings ratio through superannuation commitments is also near the current net savings ratio, implying a zero discretionary savings ratio.

Post 2016 the downward pressure on real income growth and increases in the debt service ratio are projected to place downward pressure on the household savings ratio as households attempt to maintain living standards, as reflected in per capita consumption expenditure by reducing savings.

Figure 2.4: Housing sector



2.4 Employment and unemployment

The projection for employment growth is one of a little over 1.0 per cent average per annum for the next two years, although declining to 0.8 per cent by the middle of 2016. A modest recovery to 1.3 per cent per annum by the middle of 2018 is forecast, before declining to 0.6 per cent by the end of the end of this decade. As the growth rate in employment is, in general, less than the working age population growth rate, the unemployment rate steadily increases reaching 7.5 per cent by the end of the decade and over 8.0 per cent by the end of the projection period.

In absolute terms, the level of unemployed is projected to reach 850,000 by the middle of 2016, 900,000 by the middle of 2019 and the politically sensitive benchmark of 1 million by the end of the decade.

Figure 2.5: Labour market

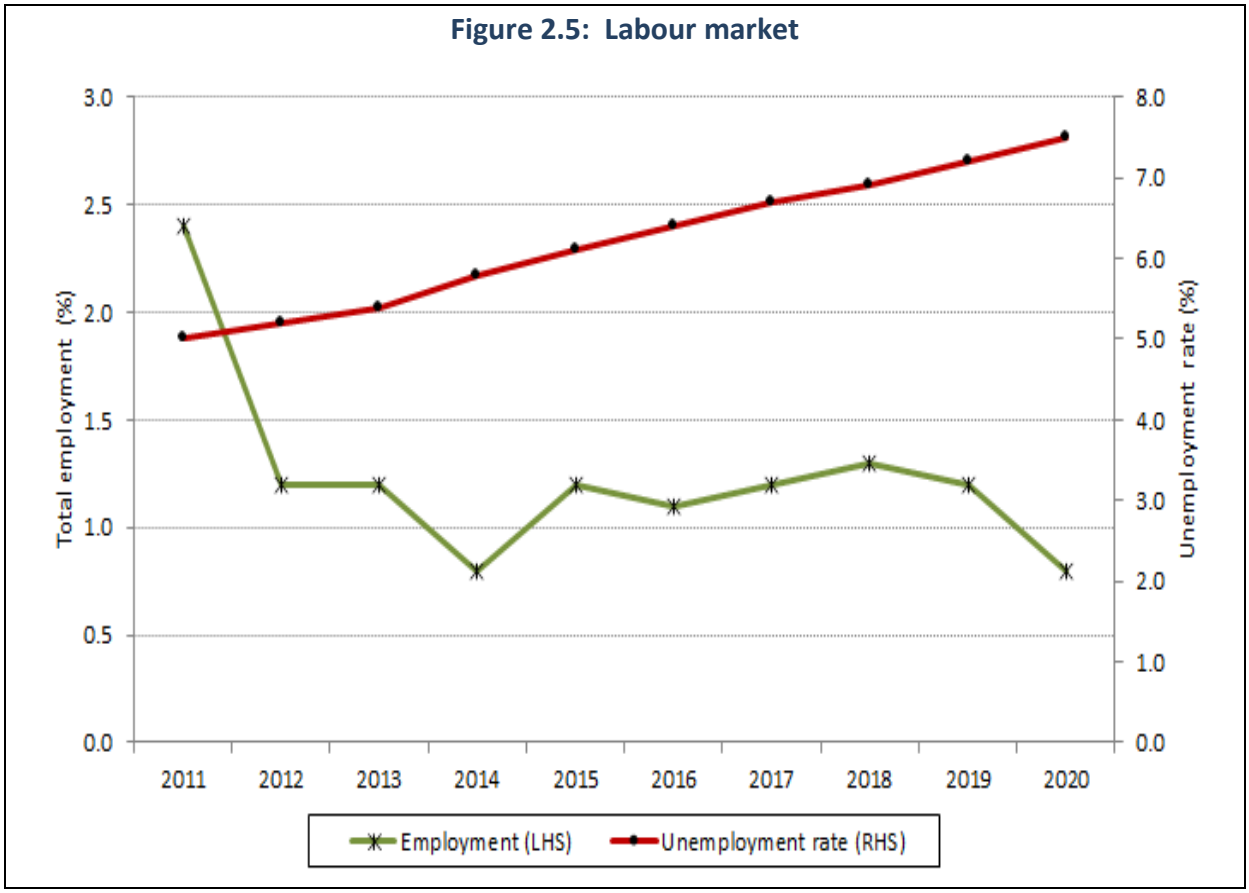
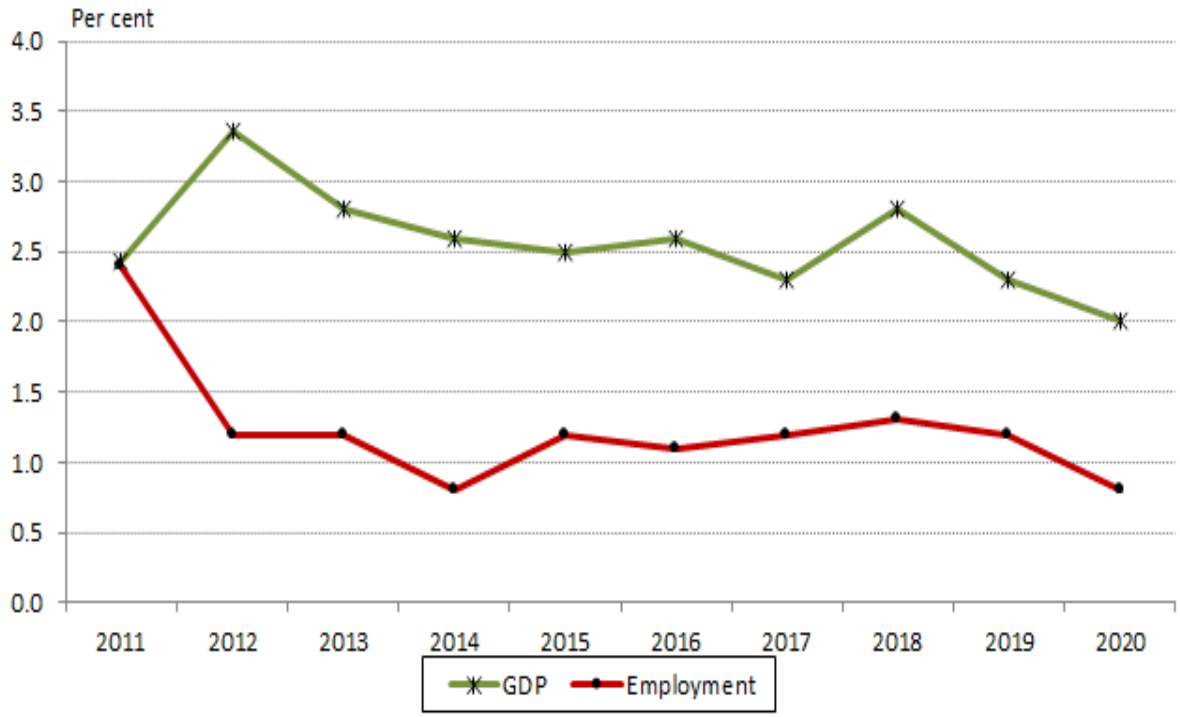


Figure 2.6: GDP and employment



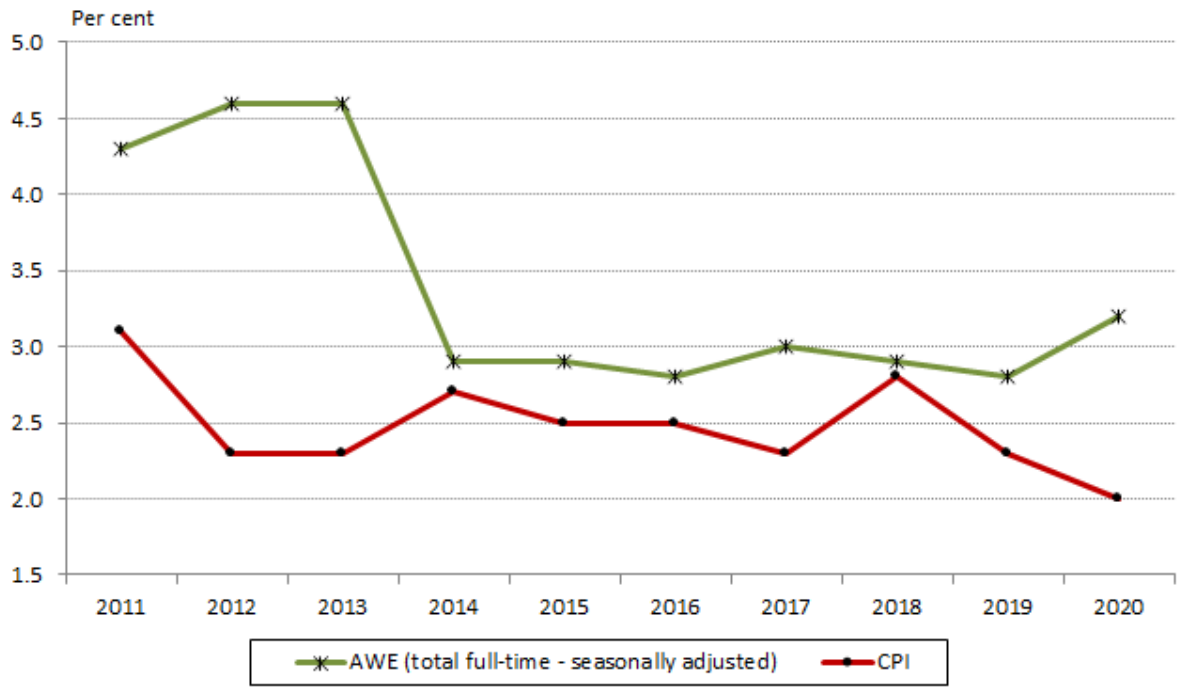
2.5 The inflation rate and wages

The steady increase in the unemployment rate and the projected increase in the unused capacity capital stock rate will combine to hold the inflation rate, measured by the CPI, at moderate trend levels of approximately 2.0 per cent per annum over the next two years. This outcome is assisted by only a modest reduction in the exchange rate to around 85 cents to the United States dollar. However, the fall in the currency begins to accelerate significantly after 2016, which will contribute directly to accelerating the inflation rate.

In addition, there is a limit to the extent that profit margins can be suppressed and the anti-inflation compression of profit margins will weaken even if capacity utilisation rates continue to fall. In addition, once the exchange rate begins to fall significantly, profit margins can be expected to increase significantly in trade exposed industries.

Thus, from 2016 onwards the inflation rate is projected to increase steadily, reaching 3.5 per cent by 2018 at which point real wages will be declining by 0.6 per cent per annum. The stabilisation of the currency at near the purchasing power parity terms after 2018, with the unemployment rate settling at around 7.0 per cent will combine to restore the inflation rate at the midpoint of the current RBA acceptable range for inflation.

Figure 2.7: Average weekly earnings and CPI



2.6 Interest rates

Currently there are two views in the market in relation to the short-term outlook for interest rates. One view is that the slow growth in the economy and the increasing unemployment rate will induce the RBA to reduce interest rates by the end of this year. The additional benefit of this is that it will lower the currency and thereby being an additional stimulus to growth. The other view is that the next move in interest rates will be upwards although this may be put off well into 2015. This view contends that interest rates would be lowered because it risked giving even further stimulus to housing markets with the risk of higher excessive debt growth and structural imbalances in house prices. The proponents of macro prudential regulation argue that if resort was made to these tools the housing market could be controlled and interest rates reduced.

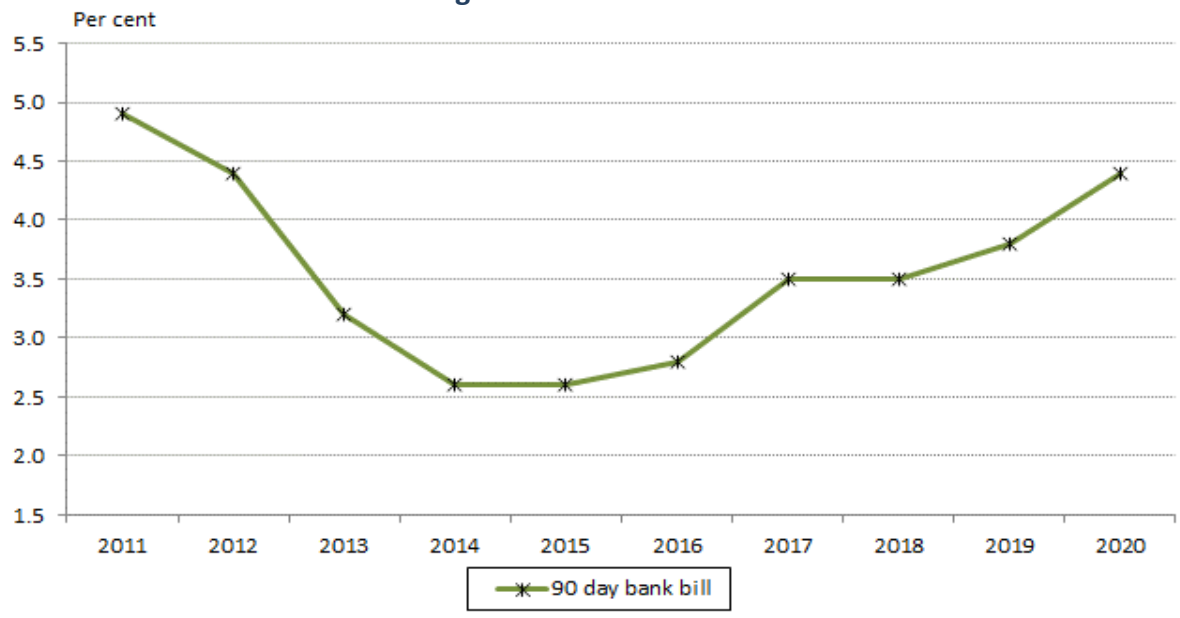
The projections in this report accept the view that the next move in interest rates will be upwards though postponed to the end of 2015.

After 2015 the increase in nominal interest rates will be modest being targeted at maintaining the minimum margin over world interest rates to prevent the collapse in the currency. That is interest rates are not predicted to increase above 4.5 per cent despite a lengthy period over 2017 to 2019 where inflation is above 3 per cent. This is due to the low growth and high unemployment rates prevailing over this period where lower real interest rates will be used as a policy instrument to maintain minimal GDP growth at a level that will prevent a rapid acceleration in the growth and employment.

The post-2016 period will be a very difficult time for monetary policy was low natural drivers of growth (with the ending of both the production and investment strong stimulus from mining expansion), inflationary pressures from the decline in the currency, and high current account deficits. The meltdown risk will be an unstated but prominent consideration during this period. It is during this period that secular stagnation risks will become as referred to in the Australian context as it is currently being referred to in the US and European context.

The projection does adopt the assumption that resort is made by the RBA and its allied monetary institutions to introduce a degree of reregulation to keep the housing markets within the bounds projected in this report.

Figure 2.8: Interest rates



2.7 The exchange rate

As in previous reports, the two factors of;

(i) a long-term soft outlook for the world economy;

(ii) the increase in the import propensity of the Australian economy via the destruction of manufacturing capacity, in conjunction with the ending of the strong stimulus from mining expansion, and

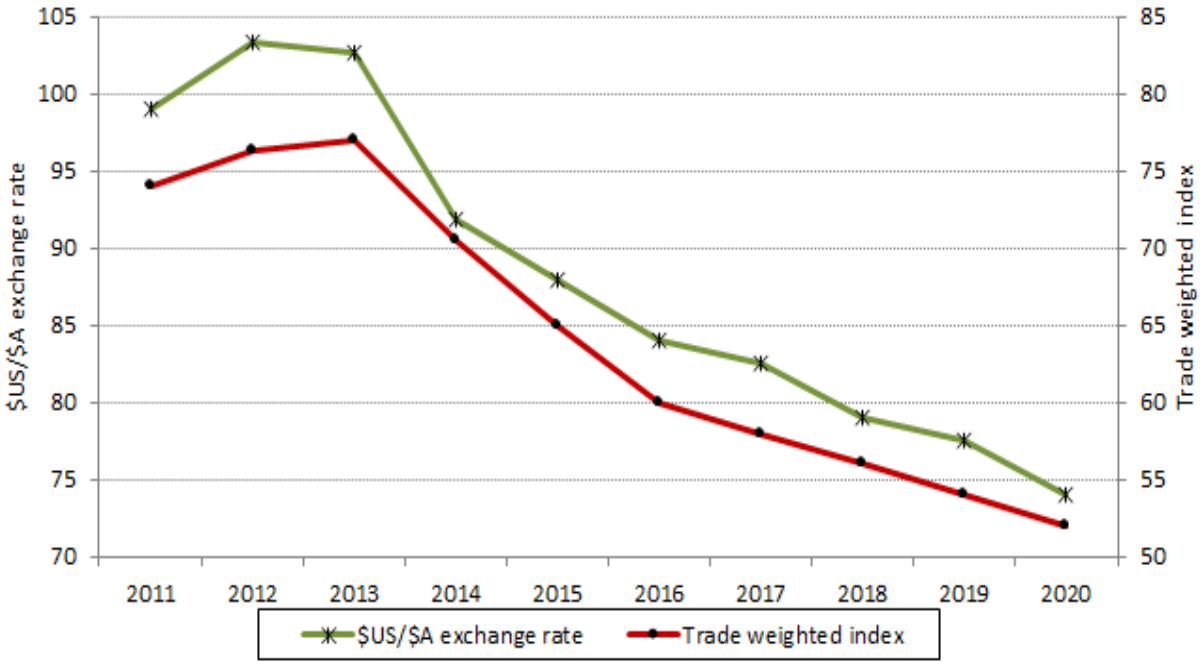
(iii) a decline in commodity prices because of medium term supply-demand imbalances;

will combine to ensure a sustained decline in the Australian dollar. However, the weaker economy and the decline in mining investment will offset the combined impact of the two factors listed above.

Eventually foreign investors will be forced to realise that beyond the strong mining expansion phase such factors as high wealth immigration cannot disguise the fact that the Australian economy does not have the strength of broad-based drivers of the sustainable growth at historical standards other than the restoration of competitiveness by a low dollar. It is hoped that this revaluation does not lead to a weakening of the expectation that foreign lenders will eventually be repaid.

However, given the vulnerability of the Australian economy, the downward adjustment could be very sharp and at any time which would involve a reduction to the 40 to 50 cent range to the United States dollar over a 6 to 12 month period. Such an adjustment may well trigger a crisis which would take the economy on a very different trajectory than what is being outlined here. In terms of the projection, if such a crisis was to occur it would seem logical to be around 2019 when a strong El Niño is projected to occur, as distinct from the weaker one predicted for 2014.

Figure 2.9: Exchange rate and trade weighted index



2.8 Population

There has been only marginal downward adjustment in the population growth rate. Currently, the net increase in the population is averaging a little below 100,000 per quarter. Due to the steadily deteriorating labour market, this quarterly increase is projected to decline by 84,000 by early 2016.

The high unemployment rates at the end of the projection period are expected to reduce the increase in the national population to less than 60,000 by the end of the projection period.

Table 2.1 Australian GDP growth rate by scenario (per cent)

	Base	High	Low
2000	3.8	3.8	3.8
2001	1.9	1.9	1.9
2002	3.9	3.9	3.9
2003	3.2	3.2	3.2
2004	4.1	4.1	4.1
2005	3.2	3.2	3.2
2006	3.0	3.0	3.0
2007	3.8	3.8	3.8
2008	3.8	3.8	3.8
2009	1.6	1.6	1.6
2010	2.1	2.1	2.1
2011	2.4	2.4	2.4
2012	3.4	3.4	3.4
2013	2.8	2.8	2.8
2014	2.6	2.6	2.6
2015	2.5	3.6	2.2
2016	2.6	3.1	1.7
2017	2.3	2.7	1.6
2018	2.8	2.8	2.1
2019	2.3	1.9	2.4
2020	2.0	2.1	1.8
2021	2.5	3.1	2.0
2022	1.9	2.4	1.3
2023	2.3	2.9	1.6
2024	2.2	2.7	2.1
2025	2.8	3.3	2.6
2026	3.1	3.5	2.5
2027	3.3	3.4	2.9
Average 2014-2027	2.5	2.8	2.1

2.9 Drivers of the increasing vulnerability of the Australian economy

The issue to be addressed here, at least in summary form, is why the Australian economy has continued to increase its vulnerability to balance of payments/banking crises over the 2006-2013 period when the economy experienced a "once in a century terms of trade boom". During this period one would have expected the international vulnerability of the economy to have declined.

2.9.1 Current factors weakening the Australian economy

The factors which have contributed to the increasing structural imbalances, or economic vulnerability, of the Australian economy are:

(i) equity withdrawal and household debt – its negative impact on real incomes;

(ii) the under-provision of infrastructure – its negative impact on productivity;

(iii) mining expansion and the Dutch Disease – its negative impact on non-resource competing industries;

(iv) narrowing export base – banana republic – its risk of sharp downturn in export receipts;

(vi) financial sector disintegration.

These issues have been explored in detail in previous reports. The Dutch Disease case however has been recently updated.

2.9.2 Dutch Disease

Table 2.2 summarises the annual impact to 2013 of the Dutch Disease. By the 'Dutch Disease' is meant the loss of no resource:

(i) installed capacity;

(ii) installed capacity that otherwise would not have been installed,

as a flow-on impact of a mining boom as a result of the:

(i) high exchange rates;

(ii) increase in wages because of competitive bidding for labour by new profitable mining sector; and

(iii) diversion of installed funds to the mining sector from other sectors of the economy.

The loss of installed capacity comes from the loss of export markets and increased import competition.

From Table 2.2, by 2013-14 more than half the gross benefit from the mining expansion has been offset by the Dutch Disease. The estimates in the table indicate that New South Wales, Victoria and South Australia would have been better off in the absence of the mining boom.

These estimates do not take into account the loss of the motor vehicle industry.

Table 2.2 Cumulative impact of the Dutch Disease (2012 $ billion) – 2013-14 state GSP				
	Gross impact	Crowding out	Net impact	Net impact % of GDP
New South Wales	17.1	24.3	-7.2	-1.5
Victoria	6.1	21.4	-15.3	-4.5
Queensland	25.5	19.0	6.5	2.2
South Australia	4.3	8.4	-4.1	-4.3
Western Australia	71.2	-10.3	81.6	31.6
Total	**124.1**	**62.7**	**61.4**	**4.1**

Note: Construction contribution to gross benefit is $67 billion in 2012-13.

Production benefits to come from LNG will be especially in the early years of limited domestic value with the majority of export receipts flowing back overseas in the form of interest payments, repayment of capital and dividends.

All costs of the Dutch Disease to 2013-14 have not been incurred – including the collapse of the motor vehicle industry.

The rise in Eastern Coast gas prices from $3 to $4 per gigajoule to $9 to $12 per gigajoule to supply the Gladstone LNG plants eroding what is left of import competing manufacturing.

It is impossible to see how by 2020 the 2005-2016 mining boom will be a net positive for the economy.

2.9.3 Housing affordability indicators by Australia and Endeavour Region

For sustainable housing expansion, defined as the number of houses actually built, to be sufficient to:

(i) accommodate the increase in the growth in adult population; and

(ii) steadily reduce any backlog in the demand for housing,

then the following conditions must be met:

(i) the new house construction cost should not be significantly below the established dwelling site price; and

(ii) as a long-term law, the income from work in the region's labour market catchment should be able to support the average mortgage on a newly constructed dwelling. Mortgage costs should be no more than 35 to 40 per cent of income.

If the average dwelling price for established dwellings is significantly below the new construction price, then there is limited incentive to construct because of the high risk of short-term capital loss.

The following tables summarise the position of sub-regions of the Endeavour Energy catchment regions. From the attached tables, the Sydney Outer West and Sydney Outer South West have poor housing affordable indicators, while Parramatta-Bankstown, NSW Central West and NSW Illawarra have better indicators, though not ideal.

Over the medium-term, new dwelling construction would be limited to the households that can achieve above average incomes from the labour market catchment or immigrants with sufficient wealth to afford housing. This means that irrespective of interest rate settings, the current upswing in housing construction is unlikely to be sustained with a steady increase in the stock of unsatisfied dwelling demand resulting.

Table 2.3 Housing – Sydney Outer South West								
Housing indicator	**1992.3**	**1998.3**	**2002.3**	**2007.3**	**2011.2**	**2013.2**	**2014.2**	**Annual growth 1998-14**
Average value of dwellings ($CVM '000s)	177.1	203.0	301.8	392.7	380.4	387.1	400.5	4.4%
Average dwelling prices to household disposable income (%)	2.9	2.6	3.5	4.6	3.9	3.9	4.1	2.8%
Mortgage burden on average dwelling purchase (%)	n/a	21.1	28.0	36.5	31.5	30.8	32.4	2.8%
Greenfield construction costs to average dwelling price (%)	199.5	192.3	163.0	150.3	168.1	165.9	162.7	-1.1%
Catchment dwelling purchase income support ($CVM)	57799	65365	67603	73579	78176	81253	79712	1.3%
Dwelling affordability – average mortgage on existing dwelling to catchment income support (%)	n/a	24.8	35.6	42.6	38.8	38.0	40.1	3.1%
Dwelling affordability – average mortgage on new dwelling to catchment income support (%)	n/a	47.7	58.1	64.0	65.3	63.1	65.2	2.0%
Community services available in catchment – hours/capita	108.5	127.6	132.9	129.7	141.3	145.9	148.8	1.0%
Adult population per dwelling	2.3	2.2	2.2	2.2	2.3	2.3	2.4	0.4%

Table 2.4 Housing – Sydney Outer West								
Housing indicator	**1992.3**	**1998.3**	**2002.3**	**2007.3**	**2011.2**	**2013.2**	**2014.2**	**Annual growth 1998-14**
Average value of dwellings ($CVM '000s)	183.4	194.8	296.3	385.0	378.7	382.1	398.3	4.6%
Average dwelling prices to household disposable income (%)	2.7	2.4	3.5	4.6	3.9	3.8	4.0	3.3%
Mortgage burden on average dwelling purchase (%)	n/a	19.4	27.8	36.4	31.4	30.6	32.1	3.3%
Greenfield construction costs to average dwelling price (%)	192.7	200.4	166.0	153.3	168.9	168.1	163.6	-1.3%
Catchment dwelling purchase income support ($CVM)	56348	62307	62711	66016	70925	73968	72468	1.0%
Dwelling affordability – average mortgage on existing dwelling to catchment income support (%)	n/a	25.0	37.7	46.6	42.6	41.2	43.9	3.6%
Dwelling affordability – average mortgage on new dwelling to catchment income support (%)	n/a	50.0	62.6	71.4	72.0	69.3	71.8	2.3%
Community services available in catchment – hours/capita	108.4	126.0	126.7	121.9	132.1	136.1	138.7	0.6%
Adult population per dwelling	2.2	2.2	2.2	2.2	2.3	2.3	2.3	0.3%

Table 2.5 Housing – Sydney Parramatta Bankstown								
Housing indicator	**1992.3**	**1998.3**	**2002.3**	**2007.3**	**2011.2**	**2013.2**	**2014.2**	**Annual growth 1998-14**
Average value of dwellings ($CVM '000s)	220.4	261.2	360.4	440.9	451.7	471.0	490.4	4.1%
Average dwelling prices to household disposable income (%)	3.5	3.3	4.4	5.6	5.1	4.9	5.2	2.9%
Mortgage burden on average dwelling purchase (%)	n/a	26.2	35.3	44.5	40.6	39.4	41.1	2.9%
Greenfield construction costs to average dwelling price (%)	152.6	142.3	129.9	127.4	134.8	129.8	126.5	-0.7%
Catchment dwelling purchase income support ($CVM)	70377	80921	86624	95890	100668	104334	102564	1.5%
Dwelling affordability – average mortgage on existing dwelling to catchment income support (%)	n/a	25.8	33.2	36.7	35.8	36.0	38.2	2.5%
Dwelling affordability – average mortgage on new dwelling to catchment income support (%)	n/a	36.7	43.1	46.8	48.3	46.8	48.3	1.8%
Community services available in catchment – hours/capita	127.1	148.3	152.0	150.0	161.9	166.5	169.1	0.8%
Adult population per dwelling	2.4	2.3	2.3	2.3	2.4	2.4	2.4	0.3%

Table 2.6 Housing – NSW Central West								
Housing indicator	**1992.3**	**1998.3**	**2002.3**	**2007.3**	**2011.2**	**2013.2**	**2014.2**	**Annual growth 1998-14**
Average value of dwellings ($CVM '000s)	115.8	129.6	135.8	228.3	225.2	231.8	247.4	4.2%
Average dwelling prices to household disposable income (%)	2.0	1.7	1.8	2.8	2.4	2.6	2.9	3.3%
Mortgage burden on average dwelling purchase (%)	n/a	13.6	14.3	22.2	19.3	20.5	22.8	3.3%
Greenfield construction costs to average dwelling price (%)	170.1	168.1	202.0	144.2	158.4	154.5	146.9	-0.9%
Catchment dwelling purchase income support ($CVM)	48818	58369	62208	62853	69437	72875	73013	1.4%
Dwelling affordability – average mortgage on existing dwelling to catchment income support (%)	n/a	17.7	17.4	29.0	25.9	25.4	27.0	2.7%
Dwelling affordability – average mortgage on new dwelling to catchment income support (%)	n/a	29.8	35.2	41.8	41.0	39.2	39.7	1.8%
Community services available in catchment – hours/capita	118.1	136.9	136.3	133.1	146.7	151.3	154.6	0.8%
Adult population per dwelling	2.1	2.0	2.0	2.0	2.0	2.0	2.0	0.0%

Table 2.7 Housing – NSW Illawarra								
Housing indicator	**1992.3**	**1998.3**	**2002.3**	**2007.3**	**2011.2**	**2013.2**	**2014.2**	**Annual growth 1998-14**
Average value of dwellings ($CVM '000s)	186.1	223.5	288.0	417.0	414.2	412.8	415.2	4.0%
Average dwelling prices to household disposable income (%)	3.5	3.1	3.6	5.0	4.6	4.3	4.4	2.3%
Mortgage burden on average dwelling purchase (%)	n/a	24.5	28.6	40.1	36.4	34.2	34.8	2.3%
Greenfield construction costs to average dwelling price (%)	132.0	121.5	118.8	98.4	107.4	108.2	109.1	-0.7%
Catchment dwelling purchase income support ($CVM)	56016	64363	67886	75794	80264	83575	82359	1.6%
Dwelling affordability – average mortgage on existing dwelling to catchment income support (%)	n/a	27.7	33.9	43.9	41.2	39.4	40.2	2.4%
Dwelling affordability – average mortgage on new dwelling to catchment income support (%)	n/a	33.7	40.2	43.2	44.2	42.6	43.9	1.7%
Community services available in catchment – hours/capita	107.0	127.7	135.6	132.4	145.7	151.8	155.5	1.3%
Adult population per dwelling	2.2	2.1	2.1	2.1	2.1	2.1	2.2	0.1%

3. The outlook for New South Wales to 2024-25

The New South Wales growth drivers by scenario are fully described in Tables 3.2 to 3.4. The core growth mechanism is straight forward. The higher the rate of world economic growth, the higher will be the national and New South Wales economic growth. The higher the rate of growth, the higher will be the rate of growth of employment and productivity with the latter allowing higher growth in real wages per hour. This in turn allows real household incomes in regions with low housing affordability to move closer to, or exceed income benchmarks for sustainable housing affordability and hence more sustainable population growth rates.

The current drivers of growth In terms of the base scenario, are straight forward for the New South Wales economy. The current low interest rate regime is reducing New South Wales debt to household income ratios with double-digit savings rates prevailing. Also, the low interest rates are leading to significant declines in New South Wales household debt service ratios. This lead to an acceleration in household dwelling expenditure in 2014 and the maintenance of relatively high growth rate in New South Wales consumption expenditure in 2015. The growth momentum was sustained into 2016 and 2017. This dynamic will also be driven by wealth effects with a leading component being the recovery in dwelling prices.

The NSW government has embarked upon major infrastructure projects. This led to the growth in public investment contributing to three quarters of NSW GSP growth over 2013-14. Until 2019 the sustained build up in public investment will explain on average 0.4 percentage points or nearly one fifth of the NSW GSP growth rate. The upswing in dwelling construction will explain 40 per cent of NSW SP growth in 2015 and 20 per cent in 2016. However rising debt to income ratios, rising interest rates post 2016 and the natural dynamics of the building cycle will result in dwelling invest having a negative influence on NSW GSP over the 2018-2023 period.

The current underlying improvement in NSW capacity utilisation will also sustain a significant increase in the growth of private business investment over the next three years. In 2016 the growth in private business investment will explain over 80 per cent of the NSW GSP growth rate.

Current government expenditure growth is projected to explain one fifth of the NSW GSP growth to 2019. However balance of payments constraints to growth are projected to constrain expenditure growth over the 2021-2023 period.

Over the next three to four years with the above strong growth drivers the expectation would be that NSW GSP growth would be in the 3.0 to 3.5 per cent range not in the vicinity of an average growth rate of 2.6 per cent. Unfortunately the weakness in the national economy, the downturn in the mining investment and the lagged adjustment effects of the Dutch Disease will result in;

(i) a further increase in international import propensity; and

(ii) a decline in net New South Wales exports interstate, which is to be expected by significantly less growth in Victoria and South Australia and the contraction in the manufacturing sector generally.

This will result in net trade exerting a strong negative influence on NSW GSP growth. Over the three years 2015-2017 the average subtraction from NSW GSP growth from net trade will be 1.4 percentage points or approximately one half the projected realised growth rate. Nevertheless the NSW economy will maintain its share in the National economy over this period which will stand in sharp contrast to the sustained fall over the last decade. The global economic pressure post 2019 will exert strong downward press on the NSW economic growth rate over the first part of the next decade.

Figure 3.1: New South Wales GSP growth rate by scenario (per cent)

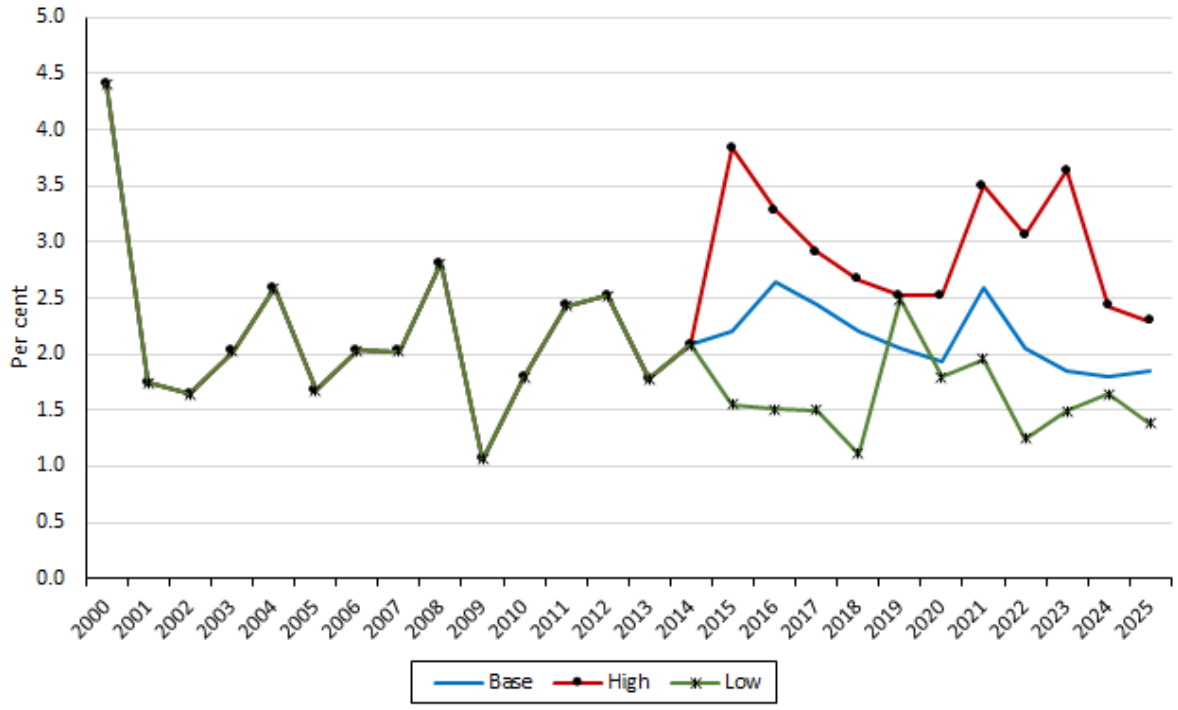


Table 3.1 New South Wales GDP growth rate by scenario (per cent)			
	Base	High	Low
2000	4.4	4.4	4.4
2001	1.7	1.7	1.7
2002	1.6	1.6	1.6
2003	2.0	2.0	2.0
2004	2.6	2.6	2.6
2005	1.7	1.7	1.7
2006	2.0	2.0	2.0
2007	2.0	2.0	2.0
2008	2.8	2.8	2.8
2009	1.1	1.1	1.1
2010	1.8	1.8	1.8
2011	2.4	2.4	2.4
2012	2.5	2.5	2.5
2013	1.8	1.8	1.8
2014	2.1	2.1	2.1
2015	2.2	3.8	1.6
2016	2.6	3.3	1.5
2017	2.4	2.9	1.5
2018	2.2	2.7	1.1
2019	2.0	2.5	2.5
2020	1.9	2.5	1.8
2021	2.6	3.5	2.0
2022	2.1	3.1	1.2
2023	1.9	3.6	1.5
2024	1.8	2.4	1.6
2025	1.8	2.3	1.4

Table 3.2 NSW GSP demand drivers – Base case														
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Per cent growth rate (% per annum)														
Private consumption expenditure	4.2	2.6	2.8	3.7	3.1	3.5	2.3	4.3	4.2	-0.7	2.8	3.1	2.0	2.1
Government consumption expenditure	1.1	1.7	1.9	2.3	3.8	2.1	3.0	0.7	1.4	5.0	0.6	3.5	2.3	0.3
Dwelling investment	5.7	-29.9	18.1	16.3	4.5	-4.8	-10.7	-9.0	-1.0	-2.5	0.3	9.5	-6.8	2.6
Private business investment	10.4	-12.7	-0.3	14.0	11.0	10.2	1.8	-2.9	12.0	-3.3	2.1	7.2	1.0	6.3
Public investment	9.6	-3.4	4.0	7.8	3.9	7.6	5.6	2.2	3.4	9.0	20.1	-5.4	-4.2	-19.6
State demand	5.3	-1.1	2.8	5.2	4.3	3.7	2.4	2.3	5.0	0.0	3.3	3.0	1.5	1.5
Imports and net trade (percentage point contribution to GSP growth – %)	-0.2	2.6	-0.8	-2.5	-1.2	-1.7	-0.2	-0.1	-1.9	1.0	-1.3	-0.4	1.1	0.4
Total GDP	**4.4**	**1.7**	**1.6**	**2.0**	**2.6**	**1.7**	**2.0**	**2.0**	**2.8**	**1.1**	**1.8**	**2.4**	**2.5**	**1.8**
Percentage point contribution to GDP growth (%)														
Private consumption expenditure	2.2	1.4	1.5	2.0	1.7	2.0	1.3	2.5	2.5	-0.4	1.6	1.8	1.2	1.2
Government consumption expenditure	0.2	0.2	0.3	0.3	0.6	0.3	0.5	0.1	0.2	0.8	0.1	0.5	0.4	0.0
Dwelling investment	0.4	-1.3	0.9	0.9	0.3	-0.3	-0.5	-0.4	0.0	-0.1	0.0	0.4	-0.3	0.1
Private business investment	1.4	-1.4	0.0	1.7	1.5	1.5	0.3	-0.4	1.8	-0.5	0.3	1.1	0.2	1.0
Public investment	0.3	-0.1	0.1	0.3	0.1	0.3	0.2	0.1	0.1	0.4	1.0	-0.3	-0.2	-0.7
State demand	4.6	-0.9	2.4	4.6	3.8	3.4	2.2	2.1	4.7	0.0	3.1	2.9	1.5	1.4
Imports and net trade (percentage point contribution to GSP growth – %)	-0.2	2.6	-0.8	-2.5	-1.2	-1.7	-0.2	-0.1	-1.9	1.0	-1.3	-0.4	1.1	0.4
Total GDP	**4.4**	**1.7**	**1.6**	**2.0**	**2.6**	**1.7**	**2.0**	**2.0**	**2.8**	**1.1**	**1.8**	**2.4**	**2.5**	**1.8**
Other indicators (% per annum)														
Population	1.1	1.3	0.8	0.6	0.5	0.6	0.7	1.4	1.6	1.6	1.3	1.0	1.1	1.5
Employment	2.9	2.1	0.9	1.9	0.8	1.1	1.9	1.9	2.9	0.6	0.7	2.5	0.7	1.7

Table 3.2 NSW GSP demand drivers – Base case (continued)												
	2014	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Per cent growth rate (% per annum)												
Private consumption expenditure	2.8	2.8	3.0	1.8	1.8	1.6	2.1	2.3	3.2	3.9	0.5	0.7
Government consumption expenditure	2.6	2.6	2.1	2.7	3.4	3.2	3.3	1.3	0.3	0.3	3.4	6.1
Dwelling investment	5.6	18.5	9.7	-2.6	0.1	-2.0	-2.8	-4.2	-2.4	-5.5	-6.3	4.5
Private business investment	-4.8	6.7	12.9	6.3	2.0	1.6	1.3	1.2	4.9	-15.1	3.8	2.2
Public investment	34.1	3.7	8.1	7.4	7.0	9.9	0.3	1.0	-6.2	-0.5	0.0	1.2
State demand	2.9	4.0	4.9	2.7	2.3	2.1	1.8	1.6	2.3	-0.5	1.1	1.9
Imports and net trade (percentage point contribution to GSP growth – %)	-0.7	-1.7	-2.2	-0.2	0.0	-0.1	0.1	1.0	-0.2	2.3	0.7	0.0
Total GDP	**2.1**	**2.2**	**2.6**	**2.4**	**2.2**	**2.0**	**1.9**	**2.6**	**2.1**	**1.9**	**1.8**	**1.8**
Percentage point contribution to GDP growth (%)												
Private consumption expenditure	1.6	1.6	1.8	1.0	1.1	0.9	1.2	1.3	1.9	2.4	0.3	0.4
Government consumption expenditure	0.4	0.4	0.3	0.4	0.5	0.5	0.5	0.2	0.0	0.0	0.5	1.0
Dwelling investment	0.2	0.9	0.5	-0.1	0.0	-0.1	-0.1	-0.2	-0.1	-0.2	-0.2	0.1
Private business investment	-0.7	1.0	2.2	1.1	0.3	0.3	0.2	0.2	0.9	-2.2	0.6	0.3
Public investment	1.6	0.2	0.4	0.4	0.4	0.6	0.0	0.1	-0.3	0.0	0.0	0.1
State demand	2.8	3.9	4.9	2.7	2.3	2.1	1.8	1.6	2.2	-0.5	1.1	1.8
Imports and net trade (percentage point contribution to GSP growth – %)	-0.7	-1.7	-2.2	-0.2	0.0	-0.1	0.1	1.0	-0.2	2.3	0.7	0.0
Total GDP	**2.1**	**2.2**	**2.6**	**2.4**	**2.2**	**2.0**	**1.9**	**2.6**	**2.1**	**1.9**	**1.8**	**1.8**
Other indicators (% per annum)												
Population	1.4	1.3	1.2	1.2	1.0	1.1	1.1	1.1	1.0	1.0	0.9	0.9
Employment	0.1	1.1	1.3	1.2	1.3	1.4	0.8	0.6	0.6	0.6	0.6	0.7

Table 3.3 NSW GSP demand drivers – High case														
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Per cent growth rate (% per annum)														
Private consumption expenditure	4.2	2.6	2.8	3.7	3.1	3.5	2.3	4.3	4.2	-0.7	2.8	3.1	2.0	2.1
Government consumption expenditure	1.1	1.7	1.9	2.3	3.8	2.1	3.0	0.7	1.4	5.0	0.6	3.5	2.3	0.3
Dwelling investment	5.7	-29.9	18.1	16.3	4.5	-4.8	-10.7	-9.0	-1.0	-2.5	0.3	9.5	-6.8	2.6
Private business investment	10.4	-12.7	-0.3	14.0	11.0	10.2	1.8	-2.9	12.0	-3.3	2.1	7.2	1.0	6.3
Public investment	9.6	-3.4	4.0	7.8	3.9	7.6	5.6	2.2	3.4	9.0	20.1	-5.4	-4.2	-19.6
State demand	5.3	-1.1	2.8	5.2	4.3	3.7	2.4	2.3	5.0	0.0	3.3	3.0	1.5	1.5
Imports and net trade (percentage point contribution to GSP growth – %)	-0.2	2.6	-0.8	-2.5	-1.2	-1.7	-0.2	-0.1	-1.9	1.0	-1.3	-0.4	1.1	0.4
Total GDP	**4.4**	**1.7**	**1.6**	**2.0**	**2.6**	**1.7**	**2.0**	**2.0**	**2.8**	**1.1**	**1.8**	**2.4**	**2.5**	**1.8**
Percentage point contribution to GDP growth (%)														
Private consumption expenditure	2.2	1.4	1.5	2.0	1.7	2.0	1.3	2.5	2.5	-0.4	1.6	1.8	1.2	1.2
Government consumption expenditure	0.2	0.2	0.3	0.3	0.6	0.3	0.5	0.1	0.2	0.8	0.1	0.5	0.4	0.0
Dwelling investment	0.4	-1.3	0.9	0.9	0.3	-0.3	-0.5	-0.4	0.0	-0.1	0.0	0.4	-0.3	0.1
Private business investment	1.4	-1.4	0.0	1.7	1.5	1.5	0.3	-0.4	1.8	-0.5	0.3	1.1	0.2	1.0
Public investment	0.3	-0.1	0.1	0.3	0.1	0.3	0.2	0.1	0.1	0.4	1.0	-0.3	-0.2	-0.7
State demand	4.6	-0.9	2.4	4.6	3.8	3.4	2.2	2.1	4.7	0.0	3.1	2.9	1.5	1.4
Imports and net trade (percentage point contribution to GSP growth – %)	-0.2	2.6	-0.8	-2.5	-1.2	-1.7	-0.2	-0.1	-1.9	1.0	-1.3	-0.4	1.1	0.4
Total GDP	**4.4**	**1.7**	**1.6**	**2.0**	**2.6**	**1.7**	**2.0**	**2.0**	**2.8**	**1.1**	**1.8**	**2.4**	**2.5**	**1.8**
Other indicators (% per annum)														
Population	1.1	1.3	0.8	0.6	0.5	0.6	0.7	1.4	1.6	1.6	1.3	1.0	1.1	1.5
Employment	2.9	2.1	0.9	1.9	0.8	1.1	1.9	1.9	2.9	0.6	0.7	2.5	0.7	1.7

Table 3.3 NSW GSP demand drivers – High case (continued)												
	2014	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Per cent growth rate (% per annum)												
Private consumption expenditure	2.8	1.2	7.6	3.7	4.1	0.3	1.6	5.4	4.3	4.0	1.1	2.4
Government consumption expenditure	2.6	0.4	7.5	1.9	2.6	3.6	3.9	1.1	0.6	1.2	4.2	6.5
Dwelling investment	5.6	16.0	15.6	-3.3	-0.7	-1.7	-2.2	-4.4	-2.1	-4.6	-5.5	4.9
Private business investment	-4.8	-6.4	52.2	-2.5	-8.1	2.8	5.0	-2.6	5.7	-7.8	10.4	0.0
Public investment	34.1	-0.8	16.8	7.8	9.0	12.5	2.1	0.3	-5.3	1.2	2.0	2.5
State demand	2.9	0.4	14.6	2.1	1.8	1.8	2.4	2.7	3.2	1.2	2.7	2.7
Imports and net trade (percentage point contribution to GSP growth – %)	-0.7	3.4	-11.6	0.8	0.9	0.7	0.2	0.9	-0.1	2.4	-0.2	-0.3
Total GDP	**2.1**	**3.8**	**3.3**	**2.9**	**2.7**	**2.5**	**2.5**	**3.5**	**3.1**	**3.6**	**2.4**	**2.3**
Percentage point contribution to GDP growth (%)												
Private consumption expenditure	1.6	0.7	4.5	2.2	2.5	0.2	0.9	3.2	2.6	2.5	0.6	1.4
Government consumption expenditure	0.4	0.1	1.2	0.3	0.4	0.6	0.6	0.2	0.1	0.2	0.6	1.0
Dwelling investment	0.2	0.7	0.8	-0.2	0.0	-0.1	-0.1	-0.2	-0.1	-0.2	-0.2	0.2
Private business investment	-0.7	-0.8	10.1	-0.5	-1.3	0.5	0.8	-0.4	0.9	-1.1	1.6	0.0
Public investment	1.6	0.0	0.8	0.4	0.5	0.8	0.1	0.0	-0.3	0.1	0.1	0.1
State demand	2.8	0.4	14.9	2.1	1.8	1.8	2.3	2.6	3.1	1.2	2.6	2.6
Imports and net trade (percentage point contribution to GSP growth – %)	-0.7	3.4	-11.6	0.8	0.9	0.7	0.2	0.9	-0.1	2.4	-0.2	-0.3
Total GDP	**2.1**	**3.8**	**3.3**	**2.9**	**2.7**	**2.5**	**2.5**	**3.5**	**3.1**	**3.6**	**2.4**	**2.3**
Other indicators (% per annum)												
Population	1.4	1.6	1.4	1.6	1.5	1.3	1.2	1.2	1.2	1.1	1.1	1.1
Employment	0.1	3.7	2.0	2.7	1.4	0.1	0.5	2.2	1.7	1.2	1.3	1.8

Table 3.4 NSW GSP demand drivers – Low case														
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Per cent growth rate (% per annum)														
Private consumption expenditure	4.2	2.6	2.8	3.7	3.1	3.5	2.3	4.3	4.2	-0.7	2.8	3.1	2.0	2.1
Government consumption expenditure	1.1	1.7	1.9	2.3	3.8	2.1	3.0	0.7	1.4	5.0	0.6	3.5	2.3	0.3
Dwelling investment	5.7	-29.9	18.1	16.3	4.5	-4.8	-10.7	-9.0	-1.0	-2.5	0.3	9.5	-6.8	2.6
Private business investment	10.4	-12.7	-0.3	14.0	11.0	10.2	1.8	-2.9	12.0	-3.3	2.1	7.2	1.0	6.3
Public investment	9.6	-3.4	4.0	7.8	3.9	7.6	5.6	2.2	3.4	9.0	20.1	-5.4	-4.2	-19.6
State demand	5.3	-1.1	2.8	5.2	4.3	3.7	2.4	2.3	5.0	0.0	3.3	3.0	1.5	1.5
Imports and net trade (percentage point contribution to GSP growth – %)	-0.2	2.6	-0.8	-2.5	-1.2	-1.7	-0.2	-0.1	-1.9	1.0	-1.3	-0.4	1.1	0.4
Total GDP	**4.4**	**1.7**	**1.6**	**2.0**	**2.6**	**1.7**	**2.0**	**2.0**	**2.8**	**1.1**	**1.8**	**2.4**	**2.5**	**1.8**
Percentage point contribution to GDP growth (%)														
Private consumption expenditure	2.2	1.4	1.5	2.0	1.7	2.0	1.3	2.5	2.5	-0.4	1.6	1.8	1.2	1.2
Government consumption expenditure	0.2	0.2	0.3	0.3	0.6	0.3	0.5	0.1	0.2	0.8	0.1	0.5	0.4	0.0
Dwelling investment	0.4	-1.3	0.9	0.9	0.3	-0.3	-0.5	-0.4	0.0	-0.1	0.0	0.4	-0.3	0.1
Private business investment	1.4	-1.4	0.0	1.7	1.5	1.5	0.3	-0.4	1.8	-0.5	0.3	1.1	0.2	1.0
Public investment	0.3	-0.1	0.1	0.3	0.1	0.3	0.2	0.1	0.1	0.4	1.0	-0.3	-0.2	-0.7
State demand	4.6	-0.9	2.4	4.6	3.8	3.4	2.2	2.1	4.7	0.0	3.1	2.9	1.5	1.4
Imports and net trade (percentage point contribution to GSP growth – %)	-0.2	2.6	-0.8	-2.5	-1.2	-1.7	-0.2	-0.1	-1.9	1.0	-1.3	-0.4	1.1	0.4
Total GDP	**4.4**	**1.7**	**1.6**	**2.0**	**2.6**	**1.7**	**2.0**	**2.0**	**2.8**	**1.1**	**1.8**	**2.4**	**2.5**	**1.8**
Other indicators (% per annum)														
Population	1.1	1.3	0.8	0.6	0.5	0.6	0.7	1.4	1.6	1.6	1.3	1.0	1.1	1.5
Employment	2.9	2.1	0.9	1.9	0.8	1.1	1.9	1.9	2.9	0.6	0.7	2.5	0.7	1.7

Table 3.4 NSW GSP demand drivers – Low case (continued)												
	2014	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Per cent growth rate (% per annum)												
Private consumption expenditure	2.8	1.2	1.3	-0.8	-1.1	2.8	1.5	2.9	3.0	0.4	0.6	1.0
Government consumption expenditure	2.6	0.4	1.3	2.5	3.4	2.6	2.7	0.0	-0.7	0.4	2.8	5.2
Dwelling investment	5.6	16.0	8.9	-2.8	0.1	-2.6	-3.3	-5.4	-3.4	-5.4	-6.9	3.6
Private business investment	-4.8	-6.4	9.9	9.1	5.9	-2.0	-1.2	-8.4	-6.6	-10.2	-8.5	-4.3
Public investment	34.1	-0.8	2.5	4.8	7.6	8.1	-2.2	-3.8	-9.0	-1.1	-1.9	-0.6
State demand	2.9	0.4	2.9	1.4	1.2	2.0	0.8	-0.1	0.1	-1.4	-0.6	1.1
Imports and net trade (percentage point contribution to GSP growth – %)	-0.7	1.1	-1.3	0.2	0.0	0.6	1.0	2.0	1.1	2.7	2.1	0.4
Total GDP	**2.1**	**1.6**	**1.5**	**1.5**	**1.1**	**2.5**	**1.8**	**2.0**	**1.2**	**1.5**	**1.6**	**1.4**
Percentage point contribution to GDP growth (%)												
Private consumption expenditure	1.6	0.7	0.8	-0.4	-0.6	1.5	0.8	1.6	1.7	0.2	0.3	0.6
Government consumption expenditure	0.4	0.1	0.2	0.4	0.5	0.4	0.4	0.0	-0.1	0.1	0.4	0.8
Dwelling investment	0.2	0.7	0.4	-0.1	0.0	-0.1	-0.1	-0.2	-0.1	-0.2	-0.2	0.1
Private business investment	-0.7	-0.9	1.4	1.4	1.0	-0.3	-0.2	-1.1	-0.8	-1.1	-0.9	-0.4
Public investment	1.6	0.0	0.1	0.2	0.4	0.4	-0.1	-0.2	-0.4	0.0	-0.1	0.0
State demand	2.8	0.4	2.8	1.3	1.1	1.8	0.8	-0.1	0.1	-1.2	-0.5	1.0
Imports and net trade (percentage point contribution to GSP growth – %)	-0.7	1.1	-1.3	0.2	0.0	0.6	1.0	2.0	1.1	2.7	2.1	0.4
Total GDP	**2.1**	**1.6**	**1.5**	**1.5**	**1.1**	**2.5**	**1.8**	**2.0**	**1.2**	**1.5**	**1.6**	**1.4**
Other indicators (% per annum)												
Population	1.4	1.0	1.1	0.9	0.6	0.7	0.8	0.8	0.7	0.6	0.6	0.6
Employment	0.1	0.6	-0.4	0.4	0.0	2.7	1.0	0.1	0.5	-0.9	0.8	1.3

4. Electricity forecasting methodologies and modelling assumptions

This section summarises the methodologies employed and the key modelling assumptions used in developing Essential Energy's electricity sales forecasts by class.

The centrepiece of the modelling methodology was the application of NIEIR's state and energy industry based economic energy projection models.

NIEIR's projections of energy consumption are derived from growth equations. This is a common approach to modelling non-stationary variables. By taking the first difference (percentage change) of the variable, a non-stationary series can be converted to a stationary one. Standard modelling techniques and hypothesis testing (t-distribution test) can be applied to these.

One disadvantage of this approach is that potentially useful information about the long-run relationship between the non-stationary variables is discarded. However, this potential shortcoming, in our opinion, is likely to be small in this modelling exercise, particularly given the difficulties in establishing a long-run relationship between energy and it determinants. The power (reliability) of existing tests for establishing a long run or 'co-integrating' relationship is poor. Further, non-stationary models have poor small sample properties (i.e. samples less than 40 observations). This is particularly important given the limited consistent historical data on the key determinants of energy consumption (notably prices).

4.1 Methodology – electricity sales forecasts

Historical electricity sales data for the Essential Energy distribution region was supplied by Essential Energy:

- network tariff energy from 2007-08 to 2013-14;
- network tariff customer numbers from 2007-08 to 2013-14;
- energy was provided for total, peak, anytime, off-peak, shoulder;
- demand was provided for anytime, peak, off-peak, shoulder and capacity; and
- exports by small scale PV customers and other embedded generators.

NIEIR aggregated the Essential Energy network tariff categories into a more manageable group(s) of network tariffs for the purposes of forecasting. Table 4.1 shows these network categories or groups for Essential Energy used by NIEIR in its modelling.

Table 4.1 Network tariff categories		
Tariff type	**Tariff**	**Primary network price description**
Residential	BLNN2AU	LV Residential Continuous
	BLNT3AU	LV TOU RES
	BLNE2AU	NSW Solar Bonus Scheme
	BLNE4AU	NSW Solar Bonus Scheme Gross
	BLNE14AU	NSW Solar Bonus Reduced Gross
	BLNE12AU	NSW Solar Bonus Reduced Net
	BLNE21AU	Res Export - Gross @ $0
	BLNE23AU	Res Export - Net @ $0
Controlled Load	BLNC1AU	Controlled Load 1
	BLNC2AU	Controlled Load 2
Business	BLND1CO & BLND1SR & BLND1SU & BLNN1AU	LV 1 Rate
	BLNT1SU & BLNT1AO	LV TOU over 100MWh
	BLNS1AO	LV TOU average daily demand
	BLNT2AU	LV TOU <100MWh
	BLND3TO & BLND3AO & BLND4NO & TLD	LV TOU 3 Rate
	BHND1CO & BHND1SO	HV 1 Rate
	BHND3AO & TLD	HV TOU
	BHNS1AO	HV TOU average daily demand
	BLNE1AU	NSW Solar Bonus Scheme
	BLNE3AU	NSW Solar Bonus Scheme Gross
	BLNE11AU	NSW Solar Bonus Reduced Net
	BLNE13AU	NSW Solar Bonus Reduced Gross
	BLNE22AU	Bus Export - Net @ $0
Customer specific	Various	

Small scale photovoltaic schemes

The New South Wales Solar Bonus Scheme provides feed-in-tariffs for eligible customers with small solar or wind generators that are connected to the distribution network. The Scheme commenced on 1 January 2010 and operates until 31 December 2016. The New South Wales Government closed the Scheme in May 2011, effectively closing the Scheme to new applicants from 28 April 2011.

Initially, the New South Wales Solar Bonus Scheme offered a 60 cent FIT, however, this was reduced to 20 cents in October 2010 and a Scheme capacity limit of 300 MW was introduced.

The New South Wales Solar Bonus Scheme offered both a "gross" and "net" tariff:

- a "gross" tariff means that customers are paid for all electricity produced and exported to the grid by their eligible generator; and
- a "net" tariff means that customers may choose to export only excess electricity produced to the grid.

Most customers covered by the Solar Bonus Scheme have gross metering, so all generation is exported and customers are metered separately and pay the applicable retail price for all their consumption.

Under net metering, it is only excess generation that is exported to the grid (net exports). Where a net customer cannot meet their demand from their own generation, the extra electricity is supplied by the grid at the applicable retail price. Most customers in New South Wales that are not eligible for the Solar Bonus Scheme have net metering.

All new PV customers in New South Wales will adopt net metering, reflecting the higher ongoing financial benefits. Customers under net metering are only billed for their net electricity consumption.

Energy retailers in New South Wales have been able to set their own feed-in-tariffs (for customers not eligible for the Solar Bonus Scheme). IPART, in June 2012, released its view on a fair and reasonable FIT for New South Wales for 2012-13 is in the range of 7.7 to 12.9 cents per kilowatt hour.

The small scale PV data for Essential Energy was provided for residential and business customers.

Table 4.2 shows the categories forecast for small scale PV for Essential Energy.

Table 4.2 Solar PV tariffs

Tariff	Network tariff	Sectoral class	Gross/Net	60 cents/ 20 cents
BLNE1AU	BLNE1AU – General export net	Business	Net	60
BLNE2AU	BLNE2AU – General export net	Residential	Net	60
BLNE3AU	BLNE3AU – General export gross	Business	Gross	60
BLNE4AU	BLNE4AU – General export gross	Residential	Gross	60
BLNE11AU	BLNE11AU – General export net	Business	Net	20
BLNE12AU	BLNE12AU – General export net	Residential	Net	20
BLNE13AU	BLNE13AU – General export gross	Business	Gross	20
BLNE14AU	BLNE14AU – General export gross	Residential	Gross	20
BLNE21AU	Residential export – Gross @ $0	Residential	Gross	0
BLNE22AU	Business export – Net @ $0	Business	Net	0
BLNE23AU	Residential export – Net @ $0	Residential	Net	0

Essential energy also supplied individual PV customer billings data.

Monthly data for PV customers was estimated by customer type covering:

- actual connections;
- new connections; and
- tariff switching and disconnections.

This allowed us to assess the net change (or churn) between the different PV network tariffs in the Essential Energy distribution region.

Energy and capacity data were also available by network tariff on a customer by customer basis. NIEIR used these data (after filtering out blank/inconsistent reads) to calculate capacity factors for Essential Energy PV customers by network tariff for 2011 and 2014.

Business sales

NIEIR's existing New South Wales electricity forecasting model was used to drive the electrical energy projections. This model is an industry based model which uses the ABARE energy demand data and NIEIR's projections of gross state product and output by industry along with other variables.

Table 4.3 shows the Australian Standard Industrial Classification (ASIC) categories included in NIEIR's New South Wales electricity forecasting model. Table 4.3 also shows the concordance between customer class categories and ASIC industry categories. Electricity consumption forecasts are based on econometric models which link New South Wales electricity sales by industry to real output growth by industry, electricity prices and weather conditions.

Essential Energy provided NIEIR with business sales data on a customer by customer basis for the 2010-11 financial year. Using the business name and cross checking against business registrars and other listings, NIEIR industry coded all large business customers in Essential Energy. There were some 5,000 business customers in the Essential Energy distribution area. This represented nearly 65 per cent of total business energy sales in the Essential Energy distribution region.

The key reason for adopting this approach for business sales is that it is a much more rigorous and accurate forecasting model. It effectively captures the implications for electricity sales in industries that are declining, such as motor vehicle production and textiles, clothing and footwear, and industries that are growing, such as commerce and recreation and entertainment.

In effect the NIEIR modelling approach for business sales takes into account, not only economic growth in the Essential Energy region, but also the structure of economic growth in the Essential Energy region on an industry basis. This approach is much more meaningful than relying simply on aggregate GDP measures to project business electricity sales growth.

Table 4.3 Reconciliation of customer class categories with ASIC industries

Customer class category	ASIC
Residential	
Commercial	Water and sewerage Construction Wholesale and retail trade Transport and storage Communication Finance, property, business services Public administration and defence Community services Recreation, personal and other services
Industrial	Agriculture, forestry, fishing, hunting Mining Food, beverages, tobacco manufacturing Textiles, clothing and footwear manufacturing Wood, wood products manufacturing Chemicals, petroleum, coal manufacturing Paper, paper products manufacturing Non-metallic minerals manufacturing Basic metal products manufacturing Fabricated metal products manufacturing Transport equipment manufacturing Other machinery and equipment manufacturing Miscellaneous manufacturing

Notes: ASIC refers to Australian Standard Industrial Classification.
1. The farm class which excludes residential farm is included in the industrial sector.

Residential sales

Residential sales were split between general sales and hot water sales.

Hot water electricity sales

Two controlled load tariffs were modelled for Essential Energy. Customers and energy are expected to continue to decline for these network tariffs.

A full hot water model was not developed for the Essential Energy region, partly because of the diversity across the region. Piped natural gas is available in some areas of the Essential Energy region, although in many areas bottled gas would be prevalent. It would be difficult to accurately model hot water loads without these types of detailed data.

General residential electricity sales

NIEIR's econometric models of residential sales link sales growth with real income per capita, real and relative prices and weather conditions. Whilst these general econometric regression models are useful, they do not allow the practitioner to take account of Federal and State Government policies that will directly affect energy use by New South Wales households. In addition, statistical problems associated with these models and data inconsistencies can also generate implausible coefficients.

A sensible approach to assessing the impact of energy policies is to separate residential customers into existing customers and new customers, since this is generally the way energy policies are structured. This was not completed for this projection.

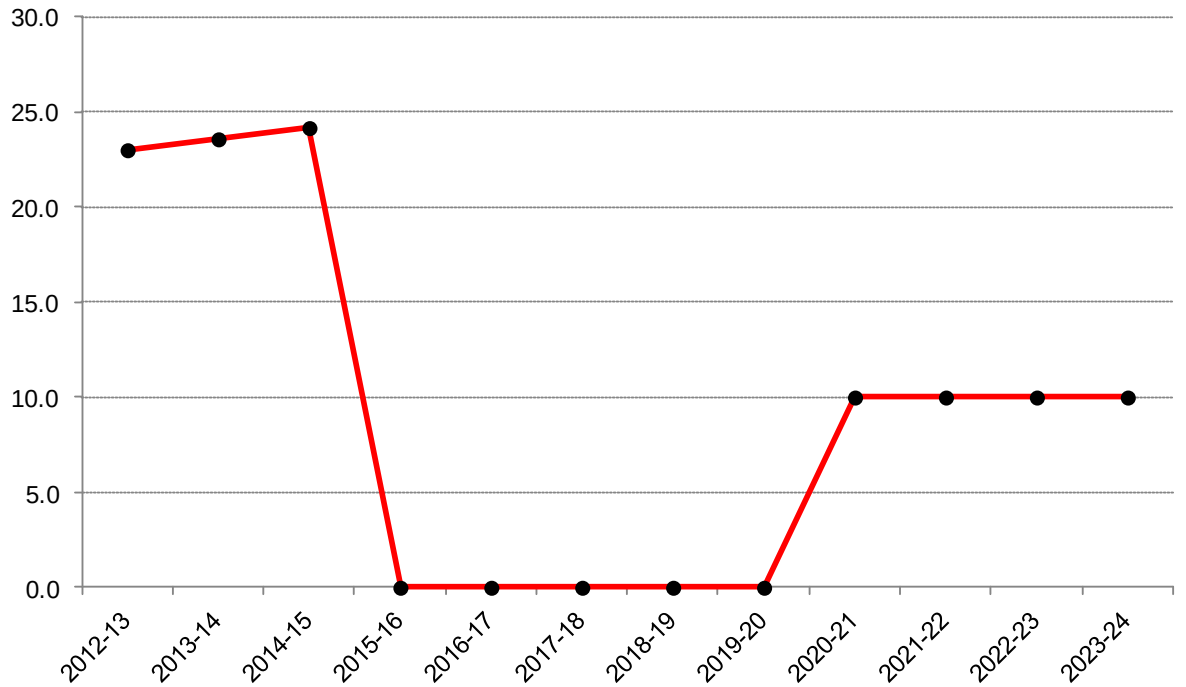
However, the impact of existing photovoltaic schemes on residential electricity sales was explicitly modelled, including:

- the in-house electricity use from customers on net FIT schemes; and
- the impact of gross PV schemes finishing in 2016, and energy previously exported to the grid being used in-house by residential customers on gross PV schemes.

4.2 Carbon (CO_2e) pricing impacts

Carbon pricing will increase the prices of electricity and gas according to the CO_2e price and the CO_2e content of fuels used to produce electricity. The carbon content of gas used to provide end-use energy services results in increased end-use gas prices. In end-use markets energy users will respond to increased energy prices by reducing energy demand, particularly in the longer term when energy using equipment can be changed. Carbon pricing also changes the generation mix required to balance demand and supply towards gas and renewables.

Figure 4.1: Real carbon price ($2012)



The CO_2e price is $23/t from 2012-13 to 2014-15.

The demand response, that is, the price elasticity of demand for electricity, is estimated to be about -0.3 in the long-run. High real price increases such as the ones that have occurred in Australia over recent years could engender a short-run response close to the long-run elasticity, or even greater.

From an electricity demand viewpoint, the focus of electricity retailers on CO_2e pricing impacts will be on the following.

(i) CO_2e pricing will increase electricity prices and reduce demands compared with no carbon pricing.

(ii) Gas prices will also rise and accordingly gas versus electricity competition may not be significantly affected.

If the current Federal Government removes the carbon tax, electricity and gas prices could still rise as a result of Opposition climate change policies. The impact, however, is indeterminate at this time. In this projection carbon pricing is re-introduced in 2020-21.

Table 4.4 Real electricity prices – New South Wales (2009-10 prices)			
	Residential	Business	Total
2011-12	23.6	14.8	17.4
2012-13	27.2	17.8	20.6
2013-14	27.7	18.7	21.4
2014-15	26.7	17.6	20.3
2015-16	28.6	19.4	22.2
2016-17	29.1	19.8	22.6
2017-18	29.4	20.0	22.9
2018-19	29.1	19.6	22.4
2019-20	29.0	19.5	22.3
2020-21	29.6	20.2	23.0
2021-22	29.6	20.2	23.0
2022-23	29.5	20.2	23.0
2023-24	29.2	19.9	22.7
2024-25	29.1	19.9	22.7

5. Government policies, initiatives and programs, and trends in energy use

5.1 Introduction

Electricity demands are influenced by a very diverse range of factors including:

- **economic factors:** economic activity, income;
- **demographic factors:** population, household formation growth;
- **energy market factors:** price of electricity and other fuel sources;
- **technological and lifestyle factors:** dwelling and appliance energy efficiency and use;
- **weather factors:** temperature; and
- **government policies factors:** energy and environmental initiatives and programs.

Capturing all of these factors in econometric modelling is not easy. In most part, the models used in this study do capture the main drivers of underlying electricity demand. However, it should be acknowledge that a few factors such as some government initiatives and certain technological developments may not be fully reflected in the models. This is because these factors, for a variety of reasons, don't easily fit in an econometric equation.[1] Accordingly, results from the econometric modelling may need to be adjusted to ensure that the impacts of these factors are adequately reflected.[2]

This section examines a range of government policies, initiatives and programs, and tecnological developments that may have an impact on electricity demand. In some instances, the government measure or tecnological development is already explicity captured in the model and therefore no adjustment to the forecasts is required. Furthermore, some government measures are on-going initiviatives that have been place over many years and therefore, their impacts on electricity demand are already (implicitly) reflected historical trends; these historical trends are in most part are captured in the model. However, there are some factors that are new or likely to change going forward, which will need to be accounted in forecasts; it is these factors which are the primary focus of this section.

Table 5.1 outlines selected national, commonwealth and state government energy and environmental measures as well as a few new technological changes in energy use that may potentially impact electricity demand. Proposed or possible alternative future measures have not been reviewed for this study.

[1] For instance, there may be limited statistical information or historical profiles do not provide a representative guide to future movements.

[2] These types of modelling issues are common to most modelling exercises and certainly common to most electricity demand modelling and forecasting; these are not issues particular to the models and forecasts in this study. All econometric models are a simplified representation of a far more complex relationship between a variable of interest and its underlying factors.

Table 5.1 Selected policies and technological developments	
Policies	**Description**
COMMONWEALTH/NATIONAL	
Direct Action Plan (2014)	Emissions Reduction Fund of $2.55 billion to support projects that reduce carbon emissions.
Clean Energy Legislative Package (2011)	Carbon pricing for energy use and associated household and business assistance measures and funding clean technology development. Discontinued from 2014.
Renewable Energy Target (RET)	Targeted renewable energy production through certificate scheme – small scale Renewable Energy Scheme. Switch to gas boosted solar hot water and take up of small PV systems.
Energy Efficiency Opportunities Act (2006)	Targeted at large (>0.5 PJ/a) energy users. Discontinued from 2014.
National Energy Efficiency Scheme	White certificate program proposed but no decision made at this stage.
Minimum Energy Performance Standards (MEPS) – national program through Standing Committee on Energy (SCE)	Minimum efficiency standard mandated for a range of appliances and equipment.
Energy Labelling - national program through Standing Committee on Energy (SCE)	Labelling of energy rating for electrical appliances and equipment.
Mandatory Disclosure (*Energy Efficiency Act 2010*) under SCE	Commercial energy performance disclosure on sale or lease.
Phase-out of electric resistance hot water – national program through Standing Committee on Energy (SCE)	Moratorium on installation of electric resistance water heaters.
NEW SOUTH WALES	
BASIX	Building Standards by Climate Zone.
Solar Bonus Scheme	Feed-in-tariff. 4.9 – 9.3 c/kWh from 1 July 2014.
Energy Efficiency for Small Business	Energy audits for small business.
TECHNOLOGICAL DEVELOPMENTS	
Time-of-use metering	Moves towards more smart metering and cost-reflective pricing of electricity
Reverse-cycle air-conditioners	Increased investment in reverse-cycle air-conditioners (RACs). RACs used more frequently for space heating, as well as cooling.
Plug-in Electric Vehicles	Possibility to significantly influence future electricity loads.
Lighting	Replacement of low efficiency lighting with high efficiency halogens (HEH) and light emitting diodes (LEDs).
Standby power	National target to reduce standby power to 1W for all appliances by 2014.

5.2 National schemes

5.2.1 Direct Action Plan (2014)

The Direct Action Plan is the Coalitions carbon emissions reduction policy that replaces the previous governments Clean Energy Legislative Package. The program aims to reduce Australia's carbon emissions by 5 per cent below 2000 levels by 2020.

The policy operates through the $2.55 billion Emissions Reduction Fund (EMF), which is a reworking and expansion of the Carbon Farming Initiative. The EMF provides funding to businesses for projects to reduce carbon emissions that could include improvements to energy efficiency, upgrading commercial buildings, and reducing emissions from electricity generation.

Businesses submit proposals to sell emissions reductions in price per tonne of carbon dioxide equivalent. The government accepts proposals through an auction that will grant funding to projects that reduce emissions at the lowest cost.

Unlike the carbon tax, the EMF relies on businesses opting into the fund rather than creating incentives to reduce emissions through a market-based mechanism, such as a direct price. The actual impact of the policy is uncertain at this stage. The current funding is to be spread across 4 years, so the program is relatively small for a National initiative. The programs impact on energy consumption will depend upon the composition of projects. Most draft methods released for the fund are to do with various land management activities that will have minimal impact on electricity consumption.

Draft methods to consider include the following.

- **Aggregated small energy users** is aimed at small residential and commercial end users. This method would operate similarly to the South Australian white certificate program, which could provide funding for energy retailers to provide incentives for energy efficiency for a small population.
- **Commercial building energy efficiency** supports projects to upgrade existing commercial buildings for energy efficiency.
- **Industrial fuel and energy efficiency** applies to the upgrade of industrial technology such as improvements to lighting and space conditioning.

To negotiate the legislation through the Senate a penalty on the safeguarding mechanism has been amended to the policy. Big polluters that increase their carbon emissions above a baseline level would have to purchase excess carbon credits from other companies. This mechanism has the potential to be similar to a market based system.

5.2.2 Clean Energy Legislative Package (2011-2014)

On 8 November 2011, the Australian parliament passed laws called the *Clean Energy Act (2011).* The centrepiece of this legislation was a price on carbon pollution. The Coalition government repealed the *Clean Energy Act (2011)* from July 1 2014*,* which removed many of the programs, including the carbon price that was introduced in the package.

Carbon pricing commenced on 1 July 2012. Initially the price of a permit for one tonne of carbon equivalent was fixed at $23 for the 2012–13 financial year. On 1 July 2013, the fixed price rose to $24.15 for the 2013–14 financial year. The Coalition government removed the carbon price from 1 July 2014.

This legislation and associated legislation (referred to Clean Energy Legislative Package) also incorporates a number of other measures to assist some households and businesses with the introduction of carbon pricing, and to promote energy efficiency and renewable technology. These include, among other measures, the following.

- **The Jobs and Competitiveness Program** provides assistance to emissions-intensive trade-exposed industries. The assistance covers 94.5 per cent of industry average carbon costs in the first year of the carbon price. Less emissions-intensive trade-exposed activities receive assistance to cover 66 per cent of industry average carbon costs. Assistance is legislated to be reduced by 1.3 per cent each year to encourage industry to cut pollution
- **An Energy Security Fund** maintains secure energy supplies and ensures a smooth energy market transition away from emissions intensive coal-fired generation to gas and renewable generation.
- **Household Assistance** assists Australian households, through tax cuts and increased welfare payments, to help households with increased living costs as a result of the introduction of a carbon price.
- **Clean Technology Program** provides directly help to businesses to improve energy efficiency and reduce carbon pollution in manufacturing industries and support research and development in low pollution technologies.
- **Steel Transformation Plan** supports and assists industry transition to a clean energy future, and recognises the pressures currently facing this industry.
- **Clean Energy Finance Corporation** invests in renewable energy, low-emission technology and energy efficiency in Australia. Under its enabling legislation, its investment activities will be funded through a special appropriation of $2 billion to a special account every year for five years, commencing from 1 July 2013.
- **Australian Renewable Energy Agency** improves the competitiveness of renewable energy and related technologies through supporting renewable energy technology innovation. ARENA is an independent statutory authority tasked with the objectives of improving the competitiveness of renewable energy technologies and increasing the supply of renewable energy in Australia.

The majority of these programs have been abolished along with the carbon tax in preparation for the operation of the Coalition's Direction Action Plan package. The government still intends to remove the Clean Energy Finance Corporation and the Australian Energy Agency, however they are having difficulty passing legalisation through the senate to affect the changes (as of December 2014). Currently both agencies remain operational.

5.2.3 Renewable Energy Target

The Renewable Energy Target (RET) scheme is designed to ensure that the equivalent of at least 20 per cent of Australia's electricity comes from renewable sources by 2020. The RET expands on the previous Mandatory Renewable Energy Target (MRET), which began in 2001. From 1 January 2011 the RET has operated as two parts:

- large-scale Renewable Energy Target (LRET); and
- small-scale Renewable Energy Scheme (SRES).

SRES covers small-scale renewable technology including photovoltaic system (PVs) and other small (up to 100 kW) generators and displacement technologies (solar hot water and heat pump units). LRET covers large-scale renewable technologies such as wind farms. SRES does not have a maximum target. LRET has a target of 41,000 GWh by 2020 which increases gradually from 12,500 GWh in 2011. In recent years (2009 to 2012) SRES has been dominated by photovoltaics.

Combined, the LRET and SRES are expected to deliver more renewable energy than the previous 41,000 GWh target in 2020.

The SRES is delivered through Small-scale Technology Certificates (STCs) created through SRES regulations. In the regulations the number of certificates is specified for each equipment type installed. When eligible equipment such as a heat pump is installed, certificates can be created and sold to retailers. At a price of $30 to $40 per certificate the price of heat pumps is reduced by about $900 to $1,200 per unit. Each electricity retailer must purchase and deliver to the SRES regulator (Clean Energy Regulator) certificate in proportion to their share of the end-use electricity market. The subsidy has been reducing since 2010, but the reductions have been significantly offset by decreasing PV system costs.

The RET is currently under review with the continuation of the program in its current form subject to political uncertainty. Earlier in 2014, RET was reviewed by an expert panel with the final report released in August. The panel's recommendations included reducing the scope of the LRET by either closing the scheme to new entrants, or by allocating renewable energy investment based on growth in electricity demand.

The panel recommended removing the small scale scheme, which subsidises solar panels and solar hot water heaters, or alternatively introducing an accelerated phase out of the scheme by 2020 instead of 2030.

The Climate Change Authority (CCA) released its review of the RET on 22 December, 2014. The CCA do not recommend scaling back the scheme, but deferring the target in the short term. Instead of reaching an LRET target of 41,000 GWhs in 2020, the target should be set a few years later. They recommend no change to the costly SRES component of RET as it is due to commence phasing out shortly anyway.

As yet, the Government has not implemented any of the panels recommended changes to the scheme. The Government considered reducing the target to 26,000 GWhs, but were unable to negotiate an outcome with opposing political parties. The continuation of RET is still subject to review and political negotiations.

5.2.4 National Energy Efficiency Scheme

The Commonwealth Government is investigating the merits of a national white certificate scheme (called Energy Saving Initiative). A white certificate scheme is a market-based tool for driving improvements in energy efficiency. It would place a requirement on obligated parties (typically energy retailers) to find and implement energy savings in households and businesses. A scheme would help energy consumers to save money by encouraging the identification and take-up of energy efficient technologies.

White certificate schemes currently operate in New South Wales, Victoria, South Australia and the Australian Capital Territory. If developed, it would likely subsume the current white certificate programs in these states and be applied in other states and territories where one does not currently existing.

5.2.5 MEPS and energy labelling

The Minimum Energy Performance Standards (MEPS) initiative is an early and major element of national energy efficiency improvement and climate change policies. The scheme was originally developed under the National Appliance and Equipment Energy Efficiency Program (NAEEP).

This scheme now forms part of the national Equipment Energy Efficiency (E3) Program. The implementation of minimum energy performance standards and energy labelling is coordinated through a joint commonwealth, state and territory government E3 committee.[3] Energy labelling (part of E3) was introduced into both Victoria and NSW in the late 1980's, and the first standards were introduced in Australia in 1999. They now cover a range of residential, commercial and industrial appliances and equipment. Once introduced, standards are regularly updated and new energy using appliances and equipment continues to be added. In addition to this, the energy rating algorithms used for appliances are updated from time-to-time and made more stringent, so the labelling scheme continues to encourage the marketing of high efficiency appliances.

The imitative set a regulated minimum energy performance standard for appliances and equipment covered by the program; that is, it prevents (subject to compliance) appliances with performance standards which do not meet minimum energy requirements from entering the Australian market directly saving consumer operating costs and reducing generation requirements. It is illegal to sell products which do not meet the required energy performance levels. Mandatory energy rating labels give an indication of energy performance (higher stars equates to higher efficiency). Some appliances (refrigerators/freezers, air conditioners and televisions) are subjected to both minimum energy performance standards and mandatory energy labelling. In general, where both the standards and energy labelling apply to an appliance, the sales weighted star rating of products sold exceeds the minimum energy performance levels by a significant margin.

In 2007 a total of 5 appliance categories were subjected to mandatory labelling, and 9 appliance categories were subjected to minimum energy performance standards. By the end of 2010, 7 appliance categories were subjected to mandatory labelling (plus 2 voluntary levels) and 16 appliance categories were subjected to minimum energy performance standards. In 2009, minimum energy performance standards were introduced for chiller towers, close controlled (computer room) air conditioners, external power supplies, set top boxes, self-ballasted compact fluorescent lamps and incandescent lamps. Both minimum energy performance standards and energy labelling have been introduced for televisions.

Given the long history of energy performance standards and the regular updates and additions, the determination of the net benefits of minimum energy performance standards on energy use over and above energy performance improvements initiative by appliance manufacturers independently is complex. Specifically, it is very difficult to estimate how energy performance for each group of appliances would have changed in the absence of these standards, and this becomes more difficult as the time elapsed since standards increases with autonomous improvement in appliance. In addition, due to minimum energy performance standards in countries which export appliances to Australia, there may be improvements in performance not related Australian standard changes.

[3] The E3 program (covers MEPS), mandatory and voluntary energy rating labels (ERLs) and training and support to promote use of the most energy efficiency products. Estimated E3 savings impacts are dominated (80 per cent) by MEPS.

5.2.6 Mandatory disclosure

The Commercial Building Disclosure Program requires most sellers and lessors of large office spaces to provide energy efficiency information to prospective buyers and tenants. The disclosure rules, introduced in all states as a joint Commonwealth-State initiative, applies to energy performance certification for all office building space greater than or equal to 2,000 m^2 when it is leased or sold.

The program requires most sellers and lessors to obtain a Building Energy Efficiency Certificate (BEEC) before the building goes on the market for sale, lease or sublease. Certificates are valid for up to 12 months and include:

- the building's National Australian Built Environment Rating System (NABERS) Energy star rating; and
- a tenancy lighting assessment of the relevant area of the building general energy efficiency guidance.

Only accredited assessors can apply for certificates on behalf of building owners or lessors.

The aim of the program is to provide buyers and tenants with consistent and meaningful information about a building's energy performance, creates a strong market-based incentive for owners to improve their properties with cost-effective energy efficient upgrades. It is expected that in an informed market, buildings with better energy performance will be rewarded, increasing returns on energy efficient investments for owners.

The commercial building sector is responsible for around 10 per cent of Australia's total greenhouse gas emissions. Improving building energy efficiency is seen as one of the quickest and most cost-effective ways to reduce greenhouse gas emissions. To date over 7 million m^2 have been rated using the NABERS tool. Ratings (star system) have been improving as initiative is implemented. The anecdotal evidence is that this program is having some impact on energy performance in the commercial office sector.

The program is currently under review by the Federal government with a final report and findings expected by March 2015.

5.2.7 Energy Efficiency Opportunity Act (2006)

The Energy Efficiency Opportunities (EEO) Program was an Australian Government initiative encouraging large energy-using businesses to increase their energy efficiency that has since ceased operating from 29 June 2014. The EEO worked by improving the identification, evaluation and implementation of cost-effective energy saving opportunities. The program was mandatory for organisations that use over 0.5 petajoules (PJ) of energy annually, but may also be undertaken voluntarily by medium energy-users. It required entities to conduct energy audits on their operation and report on energy efficiency opportunities with up to a 3 year payback. Implementation of these opportunities was not, however, mandated.

Monitoring of the program indicated that it may have accelerated energy efficiency opportunities identification and implementation, but the beyond business-as-usual impact of the program is uncertain. Moreover, there are issues of additionality with this program as energy efficiency opportunities reported may have been undertaken anyway or in response to other government initiatives independent of this program.

5.3 State-based schemes

5.3.1 Solar Bonus Scheme

In New South Wales, the Solar Bonus Scheme (SBS) was introduced on 1 January 2010. The Scheme provides a feed-in-tariff (FIT) for small solar and wind generators that are connected to the grid. The Scheme will operate until 31 December 2016 but has been closed to new applications since 28 April 2011.

The Solar Bonus Scheme offered both 'gross' and 'net' tariffs for electricity exported to the grid. Customers under a gross tariff are paid for all the electricity produced and exported to the grid. These customers are separately metered for their own 'in-house' usage. Customers under a net tariff are paid for only the net electricity exported to the grid; generation exceeds in-house usage.

Customers eligible to participate in the Solar Bonus Scheme are known as small retail customers (sometimes referred to as mass market). These are customers with an annual electricity consumption of less than 160 megawatt hours per year. Photovoltaic (PV) systems or wind turbines (up to 10 kW in capacity) that connect through an inverter were eligible for the Scheme.

In October 2010, the former New South Wales Government announced changes to the Solar Bonus Scheme. The Government reduced the feed-in-tariff from 60 cents to 20 cents and introduced a scheme capacity limit of 300 MW.

The New South Wales Solar Bonus Scheme was closed to new applicants in 2011. Customers who applied to join the Scheme by 28 April 2011 would still be eligible to join provided their renewable generator was connected by 30 June 2012. This only applied to customers who lodged an application to connect by 28 April 2011.

With the conclusion of the Solar Bonus Scheme payments on 31 December 2016, customers will migrate from gross to net tariffs. This could result in an increase in the 'in-house' usage by customers who participated in the SBS as they shift from gross to net metering for their solar power system. This would impact the revenue of distribution.

From July 1 2012, new system installations are not eligible for the premium rates covered under the Solar Bonus Scheme. Customers are now instead offered a feed-in tariff from electricity retailers. The NSW Independent Pricing and Regulatory Tribunal (IPART) issues a determination for the retailer contribution and benchmark range for solar feed-in tariffs for each financial year. The benchmark range for 2014-15 is 4.9 to 9.3 cents per kilowatt hour.

5.3.2 BASIX

Building standards for new homes have been significantly tightened since 2004, resulting in lower energy demands per m^2. In terms of actual energy use per residential unit, the enhanced thermal performance stemming from improved shell/envelope designs has been offset to some extent by increases in conditioned floor area, increased space comfort levels, higher lighting intensities and as-built non-compliance with pre-build design on building permits. Currently the nationally accepted standard is a 6-star shell.

The BASIX (Building Sustainability Index) criteria for new residences in New South Wales, introduced in 2004, are more comprehensive than new building codes in other jurisdictions (under the National Construction Code, previously the Building Code of Australia).

BASIX uses a minimum points rating to attain a target, not a star rating system for new residences, and has separate levels for heating and cooling loads and covers water use, thermal comfort and energy use. Its 12 February 2012 draft upgrade is probably equivalent to a 5.5 to 6.5 star, compared with a minimum 6 star rating in other jurisdictions. That is, the BASIX requirements are likely to have a similar impact on the energy performance of new residences to requirements in other jurisdictions (note that requirements are lower in Tasmania).

A report from the CSIRO *The Evaluation of the 5-Star Energy Efficiency Standard for Residential Buildings,* December 2013, assessed star rated detached dwellings in Melbourne, Brisbane and Adelaide. While the study contained only a limited sample of households and did not assess any New South Wales homes, analysis indicated that many households were re-rated below their original rating. This shows that Building Codes should be discounted from their theoretical energy reduction.

5.3.3 Phase-out of electric resistance hot water

The Commonwealth Government has been working with the state and territory governments to phase out greenhouse intensive hot water systems. In December 2010, all states and territories except Tasmania agreed to phase out greenhouse intensive (electric) hot water systems. The phase out is intended as national policy overseen by the Standing Committee on Energy (SCE) under the E3 Program. However, the impact of policy depends on jurisdictional approaches to phase-out in existing residences. Some restrictions are already in place regarding the installation of greenhouse intensive water heaters in new detached, terrace, row and town houses (Class 1 buildings under the Building Code of Australia 2010).

On 28 November 2012, the NSW Government (after initially agreeing to the phase out) announced that it will not implement the mandatory phase out of electric hot water systems in existing homes. Standards for hot water installations in new detached, terrace or town houses will continue under the NSW Building Sustainability Index BASIX system.

5.3.4 Energy efficiency for small businesses

This program[4] is aimed at assisting small businesses in New South Wales to both reduced their power bills and their carbon emissions. Eligible businesses are able to register for the program.

The first stage in the program is the undertaking of an energy assessment and the development of an 'action plan' which outlines ways in which the business can reduce its energy consumption.

After implementing the suggested changes, the business is then able to apply for a rebate to partially offset the costs associated with implementation of energy efficiency measures. The rebate will offset up to 50 percent of the associated costs, to a maximum of $5,000.

[4] http://www.environment.nsw.gov.au/resources/sustainbus/09542EnergyEfficiency.pdf.

5.4 Technological developments

5.4.1 Time-of-use metering and pricing

The standard meters that most households and small businesses have are known as "accumulation" or "Type 6" meters. These meters simply keep a record of how much electricity a customer uses in total over a period of time. Type 6 meters cannot record at what time of day a customer uses electricity. A smaller number of households and small businesses have "Interval" or "Type 5" meters that can record not only how much electricity a customer uses, but also when they use it. Both the Type 5 and Type 6 meters need to be read manually.

Some households and small businesses have a "Smart" or "Type 4" meter. Smart meters record how much electricity a customer uses, when they used it, and have a communications capability that allows electricity distribution network service providers (DNSPs) to have real-time or near real-time access to read them remotely. Types 1 to 3 meters are also smart meters but these are used by large business customers (Type 1 meters are used by the largest energy users). Unlike with the household and small businesses sectors where smart metering is relatively new, large users have been using smart metering for many years now.[5]

Customers with a Type 6 meter are typically billed a flat rate for each unit of electricity consumed (irrespective of the time of day the electricity was consumed) plus a fixed supply charge per billing period. In contrast, customers with an interval or smart meter could face a range of different time-based charges (addition to a fixed supply charge). Possible charging arrangements may include:

- **time-of-use pricing**: electricity prices for each unit of energy supplied are set for a specific time of day (such as peak, off-peak and shoulder); prices paid for energy consumed during these periods are pre-established and known to consumers in advance;
- **critical peak pricing**: electricity prices for each unit of energy supplied over certain peak periods are set at a much higher rate than other periods. Prices paid for energy consumed during these periods are pre-established and known to consumers in advance but the periods that they cover may only be known with short notice.
- **real-time pricing or dynamic pricing**: electricity prices for each unit of energy supplied are set on an hourly basis; prices paid are based on the underlying cost of generating and/or purchasing electricity at the wholesale level; and
- **peak load reduction credits** for consumers with large loads who enter into pre-established peak load reduction agreements that reduce a utility's planned capacity obligations;

Interval and smart metering also enables other types of pricing to be more easily applied such as a peak capacity charge whereby a charge is paid for each unit of maximum demand (not energy) supplied; these are typically calculated from each customer's recorded highest half-hourly demand reading.

Time-based pricing for electricity is not a new concept. Some flexible electricity retail pricing options are currently already available for many households and businesses.[6]

[5] A Type 7 metering installation is an unmetered connection point. This means that a device is connected to the network and uses electricity but does not have any meter. Streetlights and other public lights like traffic lights are examples of Type 7 metering installations.

[6] AEMC (2012) "Fact sheet: efficient and flexible pricing options", Australian Energy Market Commission.

NSW Taskforce

Electricity customers in NSW can choose to have a smart meter (Type 4), but there is a considerable cost. In 2012, the NSW Government established a Smart Meter Task Force to provide advice to the Government on a range of options for the potential introduction of smart meters in NSW.[7] The Taskforce saw a number of benefits from the increased use of smart meters including:

- the potential to assist households manage their energy needs, by providing customers with much better information about their energy consumption and costs;
- allowing new services and pricing plans to be offered; and
- helping the energy businesses better plan and manage the way they supply energy to customers, reducing the costs of operating the businesses

The Taskforce also notes that the benefits of smart meters may not be equally spread.

The Taskforce examined a number of ways to increase the use of smart meters including a large scale mandated roll-out of smart meters as has been undertaken in Victoria. The Taskforce's preferred option was a market-led rollout whereby energy companies have an incentive to offer innovative pricing products with new metering equipment. The Taskforce acknowledged that there is no guarantee that a large-scale take up would be achieved under this option. Moreover, the take up of smart meters might be limited to customers, whom have greater financial incentive to take responsibility for their electricity consumption, make energy efficiency investments and change behaviour. On this basis, the take up of smart meter would likely be small.

5.4.2 Electric vehicles (EVs)

Electric vehicles could have a significant future impact on electricity loads, although currently there is virtually no electric vehicle on roads in NSW. Total Australian sales to date are approximately 1,500 vehicles. Electric vehicles often referred to as plug-in electric vehicles can be divided into battery electric vehicles (no other energy source) and plug-in hybrid electric vehicles. The take up of electric will depend on a range of factors including (among other things) the

- cost of electric vehicles ;
- price of oil;
- price of electricity;
- availability of public and home charging infrastructure; and
- Government incentives.

Also, fuel excise charges act as a proxy for road user charge. Currently, electric vehicles do not incur a fuel excise charge. A large increase in the penetration of electric vehicles into the Australian car market could see government revenue from fuel excise charges fall. Change to fuel excise charges to include electricity (for vehicle use) would also impact the take up of electric vehicles.

Our analysis[8] indicates low penetration until post-2020.[9]: The penetration ranges of plug-in electric vehicles for 2020-2040 (percentage of annual vehicle sales: autos and light commercial vehicles) are estimated as follows.

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7 NSW Government (2012) "NSW Smart Meter Taskforce Discussion Paper", November 2012.

8 Study for DECCW (NSW) by NIEIR/SCR/Futura in 2010-11.

9 Reported in an SCR submission to AEMO in April 2012.

Table 5.2 Estimated penetration of PEVs in Australia				
	2015	2020	2030	2040
Battery electric vehicles	0.01 – 0.10	0.6 – 1.5	2.2 – 5.9	5.9 – 16.0
Plug-in hybrid electric vehicles	0.02 – 0.15	1.9 – 2.2	25.2 – 32.2	49.2 – 62.9

Impacts on the electricity demand of these penetrations will depend on their actual on-road energy performance and use characteristics (kilometres travelled, charging time: levels and timing). The impacts on maximum demand could be managed by time-of-use tariffs (with or without direct controls) and the use of smart grid techniques.

5.4.3 Lighting

Lighting efficiency in all sectors, particularly since 2005, has increased significantly as incandescent lighting has been replaced by compact fluorescent lighting, higher efficiency halogens and light emitting diodes. This trend was accelerated by banning of incandescent imports in 2010 and programs in New South Wales and other states to subsidise the acceleration of incandescent replacement.

Lighting efficiency has not only been improved by the replacement of incandescents, but also by increasing efficiencies of fluorescent tube luminaries used in the commercial and industrial sectors. This trend has been offset to some extent by the increased penetration of relatively inefficient low voltage halogens and increases in lighting intensity demands (lumens per square metre).

The Australian government has scheduled further sales restrictions from October 2016 which will cover mains voltage reflector lamps, including halogens. This date is subject to change dependant on substitute lighting within the market.

5.4.4 Standby power

Standby power, the non-primary electricity use in a range of appliances, currently accounts for an average of about 10 per cent of total electricity use per residence. Australia proposes to adopt a less than 1W standby target for new appliances with a standby function by 2014.

Appliances and equipment with a standby mode may include any product that consumes power while not performing its primary function. A simple definition of standby is when an appliance is at its lowest power consumption when connected to mains power, even if the appliance is turned off (lowest power mode that can be influenced by the user). However, standby is better defined under various modes and for the purpose of the E3 store survey of standby power the following definitions were used.

Power – In use (on): The power used by the product when performing its primary function.

Power – Active (or idle) standby: Active standby is when the appliance is on, but not performing its main function. For example, the DVD may be on, but is not playing or recording. This mode is usually only present in devices:

(a) where there is a mechanical function which is not active (e.g. DVD drive or motor) but where power circuits are on; or

(b) where a device has a battery and the device is charging.

Over 2001 and 2011 active standby reduced on average from 11.6W to 9.6W.

Power – Passive standby: when a product or appliance is not performing its main function (sleeping) but it is ready to be switched on (in most cases with a remote control) or is performing some secondary function (e.g. has a display or clock which is active in this mode). This mode also applies to power supplies for battery operated equipment (portable appliances which are intended to be used when disconnected from the base station) when the appliance is not being charge (disconnected). Over 2001 and 2011, this standby reduced, on average, from 5.8W to 1.1W.

Power – Off: The product must have a power switch located on the product. Off mode is when a product or appliance is connected to a power source, but does not produce any sound or picture, transmit or receive information or is waiting to be switched on by the consumer. If the product has a remote control, it cannot be woken by the remote control form off mode – it can only be activated via the power switch on the product. No display should be active in off mode. While the product may be doing some internal functions in off more (e.g. memory functions, EMC filters) these are not obvious to the user. An LED may be present to indicate off mode. Over 2001 and 2011 this standby reduced, on average, from 1.2W to 0.8W.

Delay start: Delay start is becoming common place on many major appliances. Essentially the appliance can be programmed to begin functioning at a later time; in some cases up to 24 hours later. Appliances left in this mode are in neither active nor passive standby and therefore this mode is measured as a separate category. (Note this is different to sleep mode where the timer is used to stop in use operation after a set period.) No trends evaluated.

Overall there appears to be a reduction in standby/appliance over 2001 and 2011 but overall standby electricity consumption could be increasing as:

(i) more products now have an active/idle mode; and

(ii) appliance sales have increased substantially.

Many appliances do not meet the 1W standby target so regulation in 2013-14 is likely to be necessary for target attainment.

5.5 Post modelling adjustments

Table 5.3 contains a summary of the modelling adjustments required for each policy or trend.

Table 5.3 Modelling adjustments

Policies	Modelling adjustments
COMMONWEALTH/NATIIONAL	
Climate change energy pricing	Included in econometric modelling procedure – See section 4.2.
Renewable Energy Target (RET)	No modelling adjustments required
Energy Efficiency Opportunities Act (2006)	No modelling adjustments required
National Energy Efficiency Scheme	No modelling adjustments required
Minimum Energy Performance Standards (MEPS) – national program through Standing Committee on Energy (SCE) and energy labelling	Adjustments made – see below.
Mandatory Disclosure (*Energy Efficiency Act 2010*) under SCE	No modelling adjustments required
Phase-out of electric resistance hot water	No modelling adjustments required
NEW SOUTH WALES	
BASIX	No modelling adjustments required
Solar Bonus Scheme	See sections 4.1 and 6.2.
Energy Efficiency for Small Business	No modelling adjustments required
TECHNOLOGICAL DEVELOPMENTS	
Time-of-use metering	No modelling adjustments required
Reverse-cycle air-conditioners	Included in econometric modelling procedure
Plug-in Electric Vehicles	Adjustments made – see below.
Lighting	Adjustments made – see below.
Standby power	Adjustments included in calculations.

Table 5.4 Policy adjustments for annual energy (GWh)										
	2014	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Plug-in electric vehicles	0.00	0.01	0.03	0.05	0.09	0.13	0.18	0.24	0.30	0.37
MEPS air conditioning	5.71	8.62	11.58	14.58	17.63	20.71	23.84	27.01	30.22	33.47
Lighting	1.35	2.56	3.61	4.52	5.27	5.87	6.32	6.62	6.77	6.92
6-Star Building Standards	2.35	4.73	7.15	9.44	11.69	13.96	16.33	18.85	20.99	22.50
Total energy savings	**9.41**	**15.92**	**22.37**	**28.59**	**34.68**	**40.67**	**46.67**	**52.72**	**58.28**	**63.26**

6. Essential Energy electrical energy forecasts to 2024-25

This section presents customer terminal electrical energy forecasts by class for Essential Energy to 2024-25. Energy forecasts by class for Essential Energy region are presented in Table 6.1. These projections are based on NIEIR's assessment of the economic outlook for New South Wales to 2024-25. Alternative projections for Essential Energy are presented in Appendix C. The Appendix C projections use the AEMO economic drivers for New South Wales.

6.1 Electricity sales by customer class

The key drivers of the medium term outlook for electricity sales in the Essential Energy region

The electricity sales forecasts for Essential Energy in New South Wales to 2024-25 are shaped by a number of factors. These include:

- the economic outlook for the New South Wales economy;
- the impact of small scale photovoltaic systems being installed in the Essential Energy region over the last three years in particular when generous FIT schemes were offered to residential customers;
- the introduction of a carbon price as part of the Federal Government's Carbon Pollution Reduction Scheme in July 2012 and its subsequent removal in July 2013;
- the impact of sharp increases in electricity prices in New South Wales between 2008 and 2014. Residential prices rose by around 75 per cent in real terms; and
- other Commonwealth Government policies such as changes to MRET relating to solar hot water, new Minimum Energy Performance Standards (MEPS) for air conditioning equipment and other electrical appliances and the phasing out of incandescent light bulbs by 2010.

Sales projections

Total sales by class for Essential Energy are shown in Table 6.1. Tables 6.2 to 6.5 show projections of customers, anytime energy, peak energy, off-peak energy and shoulder energy. Appendix A provides further detail by network tariff, including demand tariffs for Essential Energy (consistent with the NIEIR economic outlook).

Total electricity sales in the Essential Energy distribution region fell by 1.9 per cent in 2013-14, following an increase of 2.4 per cent in 2012-13. Strong growth in 2012-13 mainly reflected a large increase in customer specific load. Over the following two years, 2014-15 and 2015-16, total sales falls by 0.4 per cent in both years.

Residential sales fell by 3.2 per cent in 2013-14, following a fall of 0.9 per cent in 2012-13. Residential sales have been falling in the Essential Energy region due to the very large increases in electricity price and the rapid take-up of small scale PV. Total residential sales have fallen by 11.8 per cent since 2009-10.

Forecasts of PV systems in terms of customer numbers, total capacity, energy produced and "in-house" and export to grid are presented in Tables 6.7 to 6.16. Overall residential sales fell by 0.9 per cent per annum over the 2014-15 to 2024-25 period for Essential Energy.

As indicated in Table 6.11, PV installations are expected to fall to around 14,000 per year, however, this remains highly uncertain. By 2024-25, small scale PV will have displaced nearly 395 GWh of residential sales.

Controlled load sales are projected to fall by an average rate of 0.9 per cent per annum between 2014-15 and 2024-25. This reflects the modelling assumptions outlined in the previous section.

Business sales fell by 2.0 per cent in 2013-14 following two years of growth of around 3.0 per cent. Overall, business electricity sales growth averages 0.2 per cent growth per annum over the 2014-15 to 2024-25 period.

Customer specific sales growth in the Essential Energy region rose by 11.4 per cent in 2012-13. There remains the risk that existing manufacturing customers will close their operations in New South Wales in response to import competition. Overall, customer specific sales decline by -0.3 per cent per annum over the 2014-15 to 2024-25 period.

Figure 6.1: Essential Energy electricity sales by class
Base scenario – 2015 to 2025

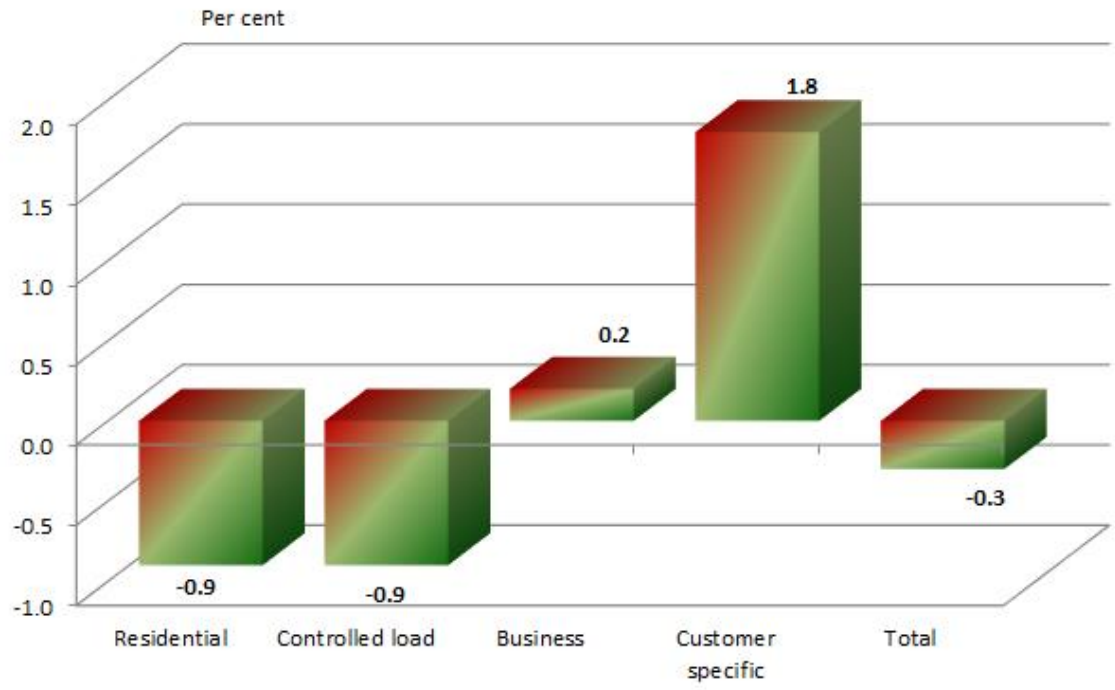

Figure 6.2: Essential Energy customer growth by class
Base scenario – 2015 to 2025

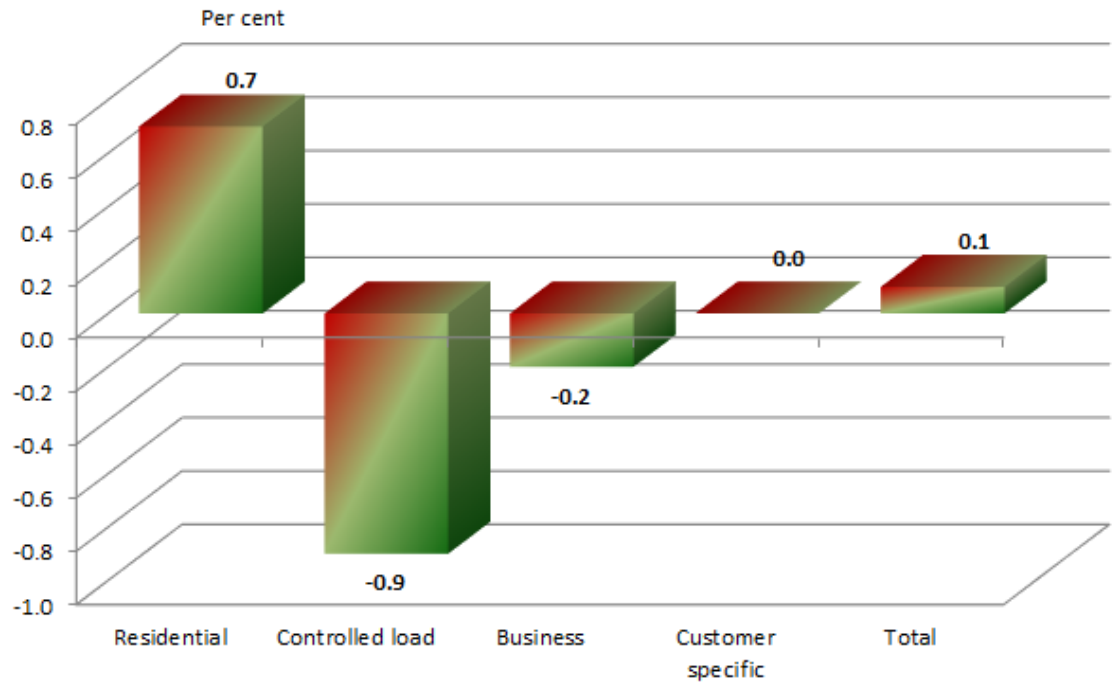

Figure 6.3: Electricity sales – Essential Energy
Base scenario – GWh

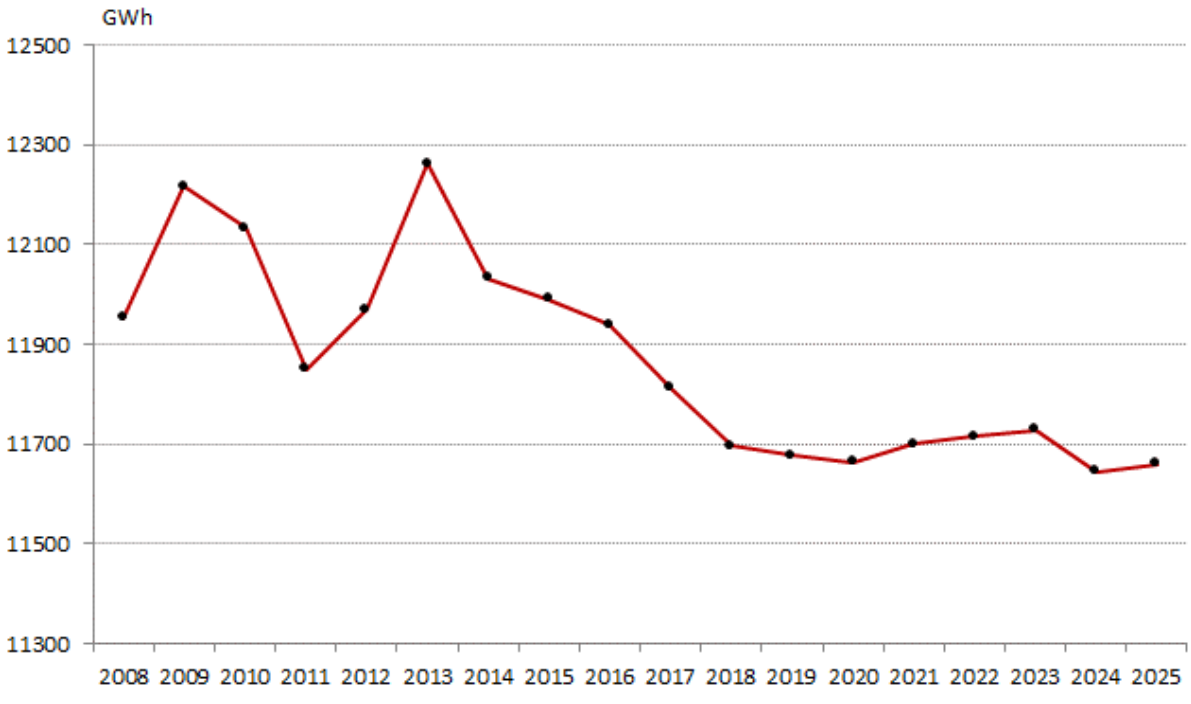

Figure 6.4: Residential sales – Essential Energy
Base scenario – GWh

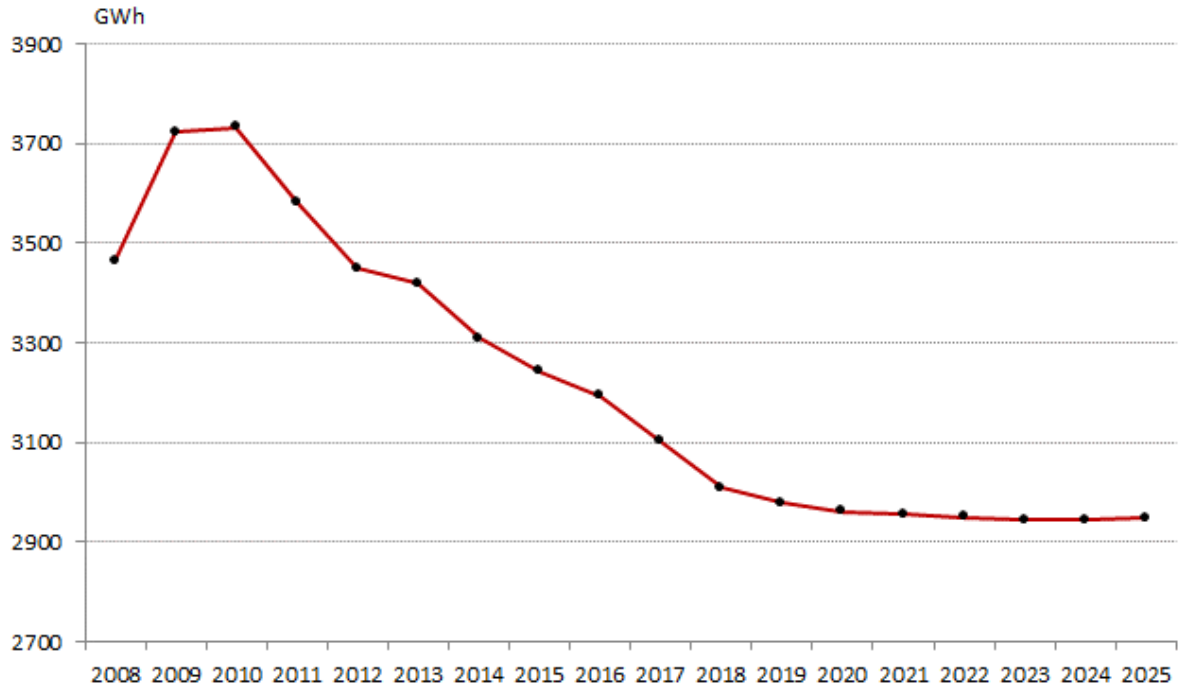

Figure 6.5: Total business sales – Essential Energy
Base scenario – GWh

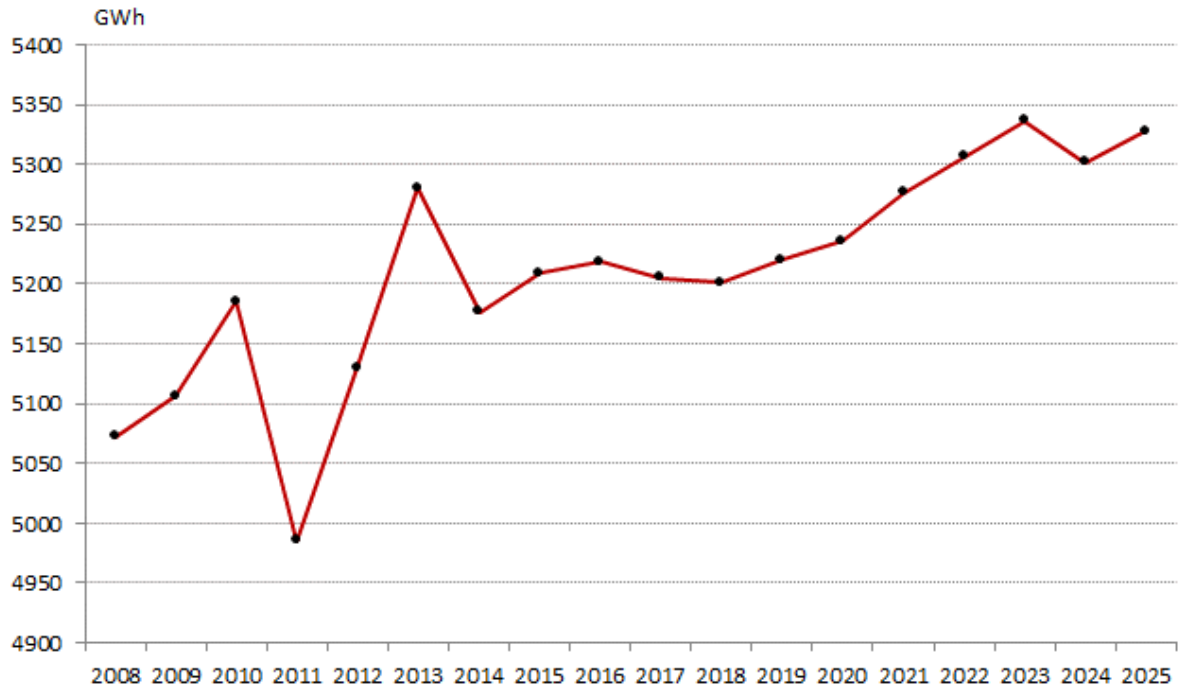

Figure 6.6: Customer specific (large) sales – Essential Energy
Base scenario – GWh

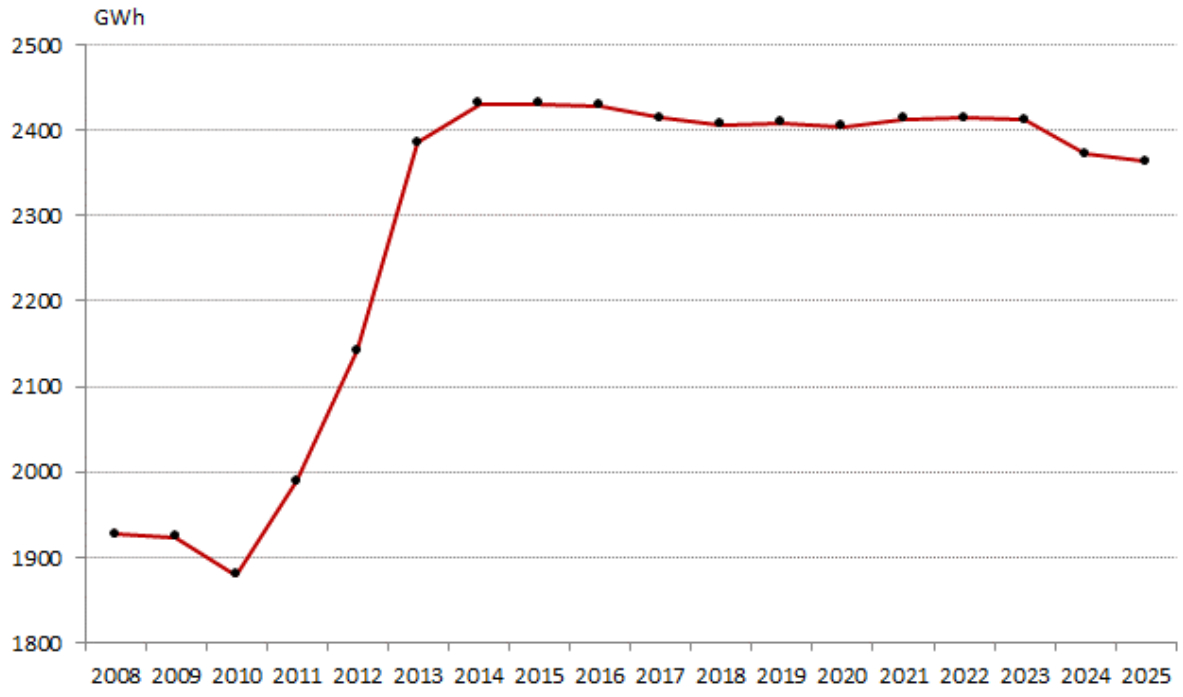

TABLE 6.1 Total Energy - Essential Energy

	Resi-dential	Control-led Load	Business	Customer Specific	Public Lighting	Total
UNIT	**********	**********	GWH	**********	**********	
2008	3464.46	1437.75	5072.34	1927.23	50.55	11952.33
2009	3721.78	1409.48	5106.24	1924.14	54.66	12216.30
2010	3731.58	1278.23	5185.14	1879.44	58.90	12133.29
2011	3582.51	1242.80	4984.83	1989.44	49.41	11848.99
2012	3449.70	1214.94	5130.05	2141.64	32.47	11968.80
2013	3418.90	1142.90	5280.53	2385.78	33.05	12261.16
2014	3308.32	1083.57	5176.89	2430.37	33.74	12032.89
2015	3242.09	1073.48	5209.23	2431.29	34.37	11990.47
2016	3193.11	1063.51	5218.55	2428.62	35.04	11938.82
2017	3102.65	1053.64	5205.23	2413.76	35.67	11810.96
2018	3008.57	1043.89	5201.10	2406.34	36.28	11696.18
2019	2977.76	1034.24	5219.78	2408.71	36.93	11677.42
2020	2961.91	1024.70	5235.59	2404.21	37.62	11664.03
2021	2955.95	1015.27	5276.42	2413.29	38.32	11699.26
2022	2949.93	1005.94	5306.35	2413.59	39.02	11714.83
2023	2944.79	996.72	5336.08	2411.82	39.73	11729.14
2024	2943.82	987.60	5301.53	2371.69	40.42	11645.06
2025	2948.65	978.57	5327.87	2363.40	41.09	11659.59
PERCENTAGE CHANGES						
2009	7.43	-1.97	0.67	-0.16	8.13	2.21
2010	0.26	-9.31	1.55	-2.32	7.76	-0.68
2011	-3.99	-2.77	-3.86	5.85	-16.11	-2.34
2012	-3.71	-2.24	2.91	7.65	-34.28	1.01
2013	-0.89	-5.93	2.93	11.40	1.79	2.44
2014	-3.23	-5.19	-1.96	1.87	2.08	-1.86
2015	-2.00	-0.93	0.62	0.04	1.87	-0.35
2016	-1.51	-0.93	0.18	-0.11	1.93	-0.43
2017	-2.83	-0.93	-0.26	-0.61	1.82	-1.07
2018	-3.03	-0.93	-0.08	-0.31	1.71	-0.97
2019	-1.02	-0.92	0.36	0.10	1.77	-0.16
2020	-0.53	-0.92	0.30	-0.19	1.88	-0.11
2021	-0.20	-0.92	0.78	0.38	1.87	0.30
2022	-0.20	-0.92	0.57	0.01	1.83	0.13
2023	-0.17	-0.92	0.56	-0.07	1.81	0.12
2024	-0.03	-0.92	-0.65	-1.66	1.74	-0.72
2025	0.16	-0.91	0.50	-0.35	1.65	0.12
COMPOUND GROWTH RATE (PER CENT) -						
2008-2014	-0.77	-4.60	0.34	3.94	-6.52	0.11
2015-2020	-1.79	-0.93	0.10	-0.22	1.82	-0.55
2015-2025	-0.94	-0.92	0.23	-0.28	1.80	-0.28

All data are for the financial year ending in June of the year specified.

TABLE 6.2 Total Customers June 30th - Essential Energy

	Resi-dential	Control-led Load	Business	Customer Specific	Public Lighting	Total
UNIT	**********	**********	number	**********	**********	
2008	691390.00	502855.00	95798.00	31.00	85.00	1290159.00
2009	696591.00	502067.00	95958.00	29.00	85.00	1294730.00
2010	702585.00	500405.00	95662.00	30.00	85.00	1298767.00
2011	708524.00	497737.00	95771.00	31.00	85.00	1302148.00
2012	708750.00	493193.00	94605.00	31.00	85.00	1296664.00
2013	715305.00	492822.00	95874.00	34.00	85.00	1304120.00
2014	724775.00	492204.00	97466.00	36.00	85.00	1314566.00
2015	730449.25	487584.28	99790.19	36.00	85.00	1317944.75
2016	736665.38	483016.91	100243.55	36.00	85.00	1320046.75
2017	741949.44	478501.06	100310.77	36.00	85.00	1320882.25
2018	747247.06	474036.16	100433.02	36.00	85.00	1321837.25
2019	752719.00	469621.47	100859.42	36.00	85.00	1323320.88
2020	758600.00	465256.31	101179.52	36.00	85.00	1325156.88
2021	764717.38	460940.06	101820.56	36.00	85.00	1327599.13
2022	770199.63	456672.00	102260.66	36.00	85.00	1329253.25
2023	775184.88	452451.53	102644.13	36.00	85.00	1330401.50
2024	780244.44	448278.00	101982.66	36.00	85.00	1330626.13
2025	785560.19	444150.81	102221.38	36.00	85.00	1332053.38
PERCENTAGE CHANGES						
2009	0.75	-0.16	0.17	-6.45	0.00	0.35
2010	0.86	-0.33	-0.31	3.45	0.00	0.31
2011	0.85	-0.53	0.11	3.33	0.00	0.26
2012	0.03	-0.91	-1.22	0.00	0.00	-0.42
2013	0.92	-0.08	1.34	9.68	0.00	0.58
2014	1.32	-0.13	1.66	5.88	0.00	0.80
2015	0.78	-0.94	2.38	0.00	0.00	0.26
2016	0.85	-0.94	0.45	0.00	0.00	0.16
2017	0.72	-0.93	0.07	0.00	0.00	0.06
2018	0.71	-0.93	0.12	0.00	0.00	0.07
2019	0.73	-0.93	0.42	0.00	0.00	0.11
2020	0.78	-0.93	0.32	0.00	0.00	0.14
2021	0.81	-0.93	0.63	0.00	0.00	0.18
2022	0.72	-0.93	0.43	0.00	0.00	0.12
2023	0.65	-0.92	0.37	0.00	0.00	0.09
2024	0.65	-0.92	-0.64	0.00	0.00	0.02
2025	0.68	-0.92	0.23	0.00	0.00	0.11
COMPOUND GROWTH RATE (PER CENT) -						
2008-2014	0.79	-0.36	0.29	2.52	0.00	0.31
2015-2020	0.76	-0.93	0.28	0.00	0.00	0.11
2015-2025	0.73	-0.93	0.24	0.00	0.00	0.11

All data are for the financial year ending in June of the year specified.

TABLE 6.3 Total Anytime Energy - Essential Energy

	Resi-dential	Control-led Load	Business	Customer Specific	Public Lighting	Total
UNIT	**********	**********	GWH	**********	**********	
2008	3406.95	1437.75	1495.62	0.00	1.98	6342.30
2009	3656.99	1409.48	1382.19	0.00	2.03	6450.69
2010	3650.51	1278.23	1281.19	0.00	2.02	6211.95
2011	3495.77	1242.80	1113.78	0.00	1.17	5853.52
2012	3339.77	1214.94	1075.42	0.00	0.00	5630.13
2013	3283.07	1142.90	1051.58	0.00	0.00	5477.55
2014	3152.90	1083.57	957.24	0.00	0.00	5193.71
2015	3075.46	1073.48	965.76	0.00	0.00	5114.70
2016	3013.65	1063.51	917.75	0.00	0.00	4994.90
2017	2914.11	1053.64	873.58	0.00	0.00	4841.33
2018	2811.29	1043.89	829.16	0.00	0.00	4684.34
2019	2769.72	1034.24	791.01	0.00	0.00	4594.98
2020	2741.77	1024.70	752.83	0.00	0.00	4519.30
2021	2722.84	1015.27	719.38	0.00	0.00	4457.49
2022	2705.38	1005.94	685.42	0.00	0.00	4396.74
2023	2689.86	996.72	652.50	0.00	0.00	4339.08
2024	2678.10	987.60	613.17	0.00	0.00	4278.87
2025	2671.19	978.57	582.35	0.00	0.00	4232.11
PERCENTAGE CHANGES						
2009	7.34	-1.97	-7.58	0.00	2.53	1.71
2010	-0.18	-9.31	-7.31	0.00	-0.49	-3.70
2011	-4.24	-2.77	-13.07	0.00	-42.08	-5.77
2012	-4.46	-2.24	-3.44	0.00	-100.00	-3.82
2013	-1.70	-5.93	-2.22	0.00	0.00	-2.71
2014	-3.96	-5.19	-8.97	0.00	0.00	-5.18
2015	-2.46	-0.93	0.89	0.00	0.00	-1.52
2016	-2.01	-0.93	-4.97	0.00	0.00	-2.34
2017	-3.30	-0.93	-4.81	0.00	0.00	-3.07
2018	-3.53	-0.93	-5.08	0.00	0.00	-3.24
2019	-1.48	-0.92	-4.60	0.00	0.00	-1.91
2020	-1.01	-0.92	-4.83	0.00	0.00	-1.65
2021	-0.69	-0.92	-4.44	0.00	0.00	-1.37
2022	-0.64	-0.92	-4.72	0.00	0.00	-1.36
2023	-0.57	-0.92	-4.80	0.00	0.00	-1.31
2024	-0.44	-0.92	-6.03	0.00	0.00	-1.39
2025	-0.26	-0.91	-5.03	0.00	0.00	-1.09
COMPOUND GROWTH RATE (PER CENT) -						
2008-2014	-1.28	-4.60	-7.17	0.00	0.00	-3.28
2015-2020	-2.27	-0.93	-4.86	0.00	0.00	-2.44
2015-2025	-1.40	-0.92	-4.93	0.00	0.00	-1.88

All data are for the financial year ending in June of the year specified.

TABLE 6.4 Total Peak Energy - Essential Energy

	Resi-dential	Control-led Load	Business	Customer Specific	Public Lighting	Total
UNIT	**********	**********	GWH	**********	**********	
2008	9.61	0.00	607.75	284.15	4.39	905.90
2009	11.07	0.00	631.16	282.75	4.88	929.86
2010	14.25	0.00	656.99	272.69	5.15	949.08
2011	15.37	0.00	652.71	291.18	4.21	963.47
2012	19.92	0.00	676.13	311.61	2.87	1010.53
2013	25.09	0.00	704.33	347.81	1.67	1078.90
2014	28.44	0.00	703.96	349.13	2.99	1084.51
2015	30.63	0.00	707.58	352.46	3.05	1093.73
2016	32.91	0.00	717.21	350.28	3.11	1103.51
2017	34.62	0.00	722.24	348.96	3.16	1108.99
2018	36.20	0.00	728.93	347.48	3.22	1115.83
2019	38.19	0.00	738.32	348.03	3.27	1127.81
2020	40.40	0.00	747.26	347.27	3.34	1138.27
2021	42.79	0.00	759.55	348.64	3.40	1154.38
2022	44.89	0.00	770.13	348.65	3.46	1167.13
2023	46.79	0.00	780.48	348.41	3.52	1179.21
2024	48.77	0.00	781.20	342.61	3.58	1176.16
2025	50.93	0.00	790.63	341.41	3.64	1186.61
PERCENTAGE CHANGES						
2009	15.19	0.00	3.85	-0.49	11.16	2.64
2010	28.73	0.00	4.09	-3.56	5.53	2.07
2011	7.86	0.00	-0.65	6.78	-18.25	1.52
2012	29.60	0.00	3.59	7.02	-31.83	4.88
2013	25.95	0.00	4.17	11.62	-41.81	6.77
2014	13.34	0.00	-0.05	0.38	79.03	0.52
2015	7.73	0.00	0.52	0.95	2.00	0.85
2016	7.44	0.00	1.36	-0.62	1.86	0.89
2017	5.19	0.00	0.70	-0.37	1.85	0.50
2018	4.57	0.00	0.93	-0.43	1.70	0.62
2019	5.48	0.00	1.29	0.16	1.78	1.07
2020	5.81	0.00	1.21	-0.22	1.88	0.93
2021	5.90	0.00	1.65	0.39	1.87	1.41
2022	4.90	0.00	1.39	0.00	1.83	1.10
2023	4.25	0.00	1.34	-0.07	1.81	1.04
2024	4.23	0.00	0.09	-1.67	1.74	-0.26
2025	4.42	0.00	1.21	-0.35	1.65	0.89
COMPOUND GROWTH RATE (PER CENT) -						
2008-2014	19.82	0.00	2.48	3.49	-6.20	3.04
2015-2020	5.69	0.00	1.10	-0.30	1.81	0.80
2015-2025	5.21	0.00	1.12	-0.32	1.80	0.82

All data are for the financial year ending in June of the year specified.

TABLE 6.5 Total Off Peak Energy - Essential Energy

	Resi-dential	Control-led Load	Business	Customer Specific	Public Lighting	Total
UNIT	**********	**********	GWH	**********	**********	
2008	30.81	0.00	1671.32	1075.18	38.34	2815.65
2009	34.51	0.00	1735.20	1073.30	41.45	2884.46
2010	42.66	0.00	1818.95	1036.68	44.56	2942.85
2011	46.09	0.00	1795.96	1106.76	38.31	2987.12
2012	58.77	0.00	1910.84	1201.45	25.79	3196.85
2013	72.24	0.00	2016.25	1334.40	14.92	3437.81
2014	82.87	0.00	1999.46	1373.02	26.79	3482.14
2015	88.74	0.00	2015.46	1362.67	27.28	3494.15
2016	95.63	0.00	2040.74	1367.25	27.81	3531.44
2017	100.44	0.00	2057.01	1356.07	28.32	3541.84
2018	105.11	0.00	2075.97	1353.30	28.80	3563.19
2019	110.83	0.00	2103.67	1353.93	29.31	3597.75
2020	117.29	0.00	2129.56	1351.75	29.86	3628.46
2021	124.20	0.00	2165.32	1356.69	30.42	3676.62
2022	130.29	0.00	2195.98	1356.94	30.98	3714.19
2023	135.82	0.00	2226.11	1355.90	31.54	3749.37
2024	141.57	0.00	2228.68	1333.36	32.09	3735.70
2025	147.82	0.00	2256.15	1328.69	32.62	3765.28
PERCENTAGE CHANGES						
2009	12.01	0.00	3.82	-0.17	8.11	2.44
2010	23.62	0.00	4.83	-3.41	7.50	2.02
2011	8.04	0.00	-1.26	6.76	-14.03	1.50
2012	27.51	0.00	6.40	8.56	-32.68	7.02
2013	22.92	0.00	5.52	11.07	-42.15	7.54
2014	14.72	0.00	-0.83	2.89	79.55	1.29
2015	7.08	0.00	0.80	-0.75	1.85	0.34
2016	7.77	0.00	1.25	0.34	1.94	1.07
2017	5.03	0.00	0.80	-0.82	1.81	0.29
2018	4.65	0.00	0.92	-0.20	1.71	0.60
2019	5.44	0.00	1.33	0.05	1.77	0.97
2020	5.83	0.00	1.23	-0.16	1.88	0.85
2021	5.89	0.00	1.68	0.36	1.87	1.33
2022	4.90	0.00	1.42	0.02	1.83	1.02
2023	4.25	0.00	1.37	-0.08	1.81	0.95
2024	4.23	0.00	0.12	-1.66	1.74	-0.36
2025	4.42	0.00	1.23	-0.35	1.65	0.79
COMPOUND GROWTH RATE (PER CENT) -						
2008-2014	17.93	0.00	3.03	4.16	-5.80	3.60
2015-2020	5.74	0.00	1.11	-0.16	1.82	0.76
2015-2025	5.24	0.00	1.13	-0.25	1.80	0.75

All data are for the financial year ending in June of the year specified.

TABLE 6.6 Total Shoulder Energy - Essential Energy

	Resi-dential	Control-led Load	Business	Customer Specific	Public Lighting	Total
UNIT	**********	**********	GWH	**********	**********	
2008	17.09	0.00	1297.66	567.91	5.85	1888.51
2009	19.21	0.00	1357.69	568.08	6.30	1951.28
2010	24.15	0.00	1428.01	570.07	7.17	2029.40
2011	25.28	0.00	1422.40	591.52	5.72	2044.92
2012	31.23	0.00	1467.66	628.60	3.81	2131.30
2013	38.50	0.00	1508.39	703.56	2.20	2252.65
2014	44.10	0.00	1516.24	708.46	3.95	2272.76
2015	47.26	0.00	1520.45	716.27	4.03	2288.00
2016	50.91	0.00	1542.86	711.27	4.10	2309.15
2017	53.48	0.00	1552.41	708.88	4.18	2318.94
2018	55.96	0.00	1567.05	705.72	4.25	2332.98
2019	59.01	0.00	1586.79	706.91	4.33	2357.03
2020	62.45	0.00	1605.96	705.34	4.41	2378.15
2021	66.13	0.00	1632.19	708.13	4.49	2410.93
2022	69.37	0.00	1654.83	708.15	4.57	2436.93
2023	72.31	0.00	1677.00	707.67	4.65	2461.64
2024	75.37	0.00	1678.50	695.87	4.73	2454.49
2025	78.70	0.00	1698.76	693.45	4.81	2475.73
PERCENTAGE CHANGES						
2009	12.40	0.00	4.63	0.03	7.69	3.32
2010	25.72	0.00	5.18	0.35	13.81	4.00
2011	4.68	0.00	-0.39	3.76	-20.22	0.76
2012	23.54	0.00	3.18	6.27	-33.39	4.22
2013	23.28	0.00	2.78	11.92	-42.26	5.69
2014	14.55	0.00	0.52	0.70	79.72	0.89
2015	7.15	0.00	0.28	1.10	1.80	0.67
2016	7.73	0.00	1.47	-0.70	1.96	0.92
2017	5.05	0.00	0.62	-0.34	1.80	0.42
2018	4.64	0.00	0.94	-0.45	1.72	0.61
2019	5.45	0.00	1.26	0.17	1.77	1.03
2020	5.82	0.00	1.21	-0.22	1.88	0.90
2021	5.89	0.00	1.63	0.40	1.87	1.38
2022	4.90	0.00	1.39	0.00	1.83	1.08
2023	4.25	0.00	1.34	-0.07	1.81	1.01
2024	4.23	0.00	0.09	-1.67	1.74	-0.29
2025	4.42	0.00	1.21	-0.35	1.65	0.87
COMPOUND GROWTH RATE (PER CENT) -						
2008-2014	17.12	0.00	2.63	3.75	-6.32	3.13
2015-2020	5.73	0.00	1.10	-0.31	1.83	0.78
2015-2025	5.23	0.00	1.12	-0.32	1.80	0.79

All data are for the financial year ending in June of the year specified.

6.2 Photovoltaics

Tables 6.7 to 6.16 show the projections for small scale PV by scheme for residential and business customers. This includes customers, total capacity, average unit size, energy produced, exports, in-house usage and capacity at system peak.

The "gross" FIT schemes conclude in 2016 so that customers switch to the "net" FIT PV schemes at this time. For Essential Energy, for residential customers, this is some 40,000 customers under the "gross" 60 cent FIT and some 2,900 customers under the gross 20 cent scheme. This is shown in Tables 6.8 and 6.10 respectively.

New residential PV customers who are not covered by the Solar Bonus Scheme are shown in Table 6.11.

Figure 6.7: Total residential PV customers – Essential Energy

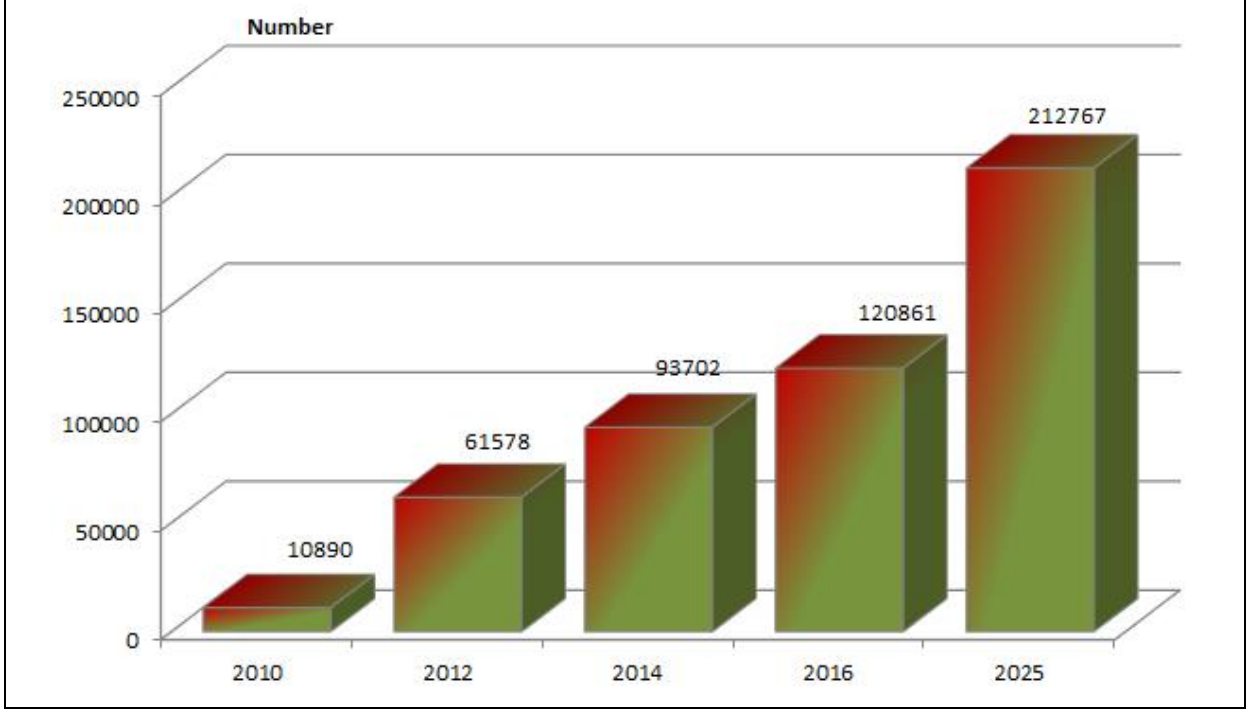

Figure 6.8: Total residential PV capacity – Essential Energy

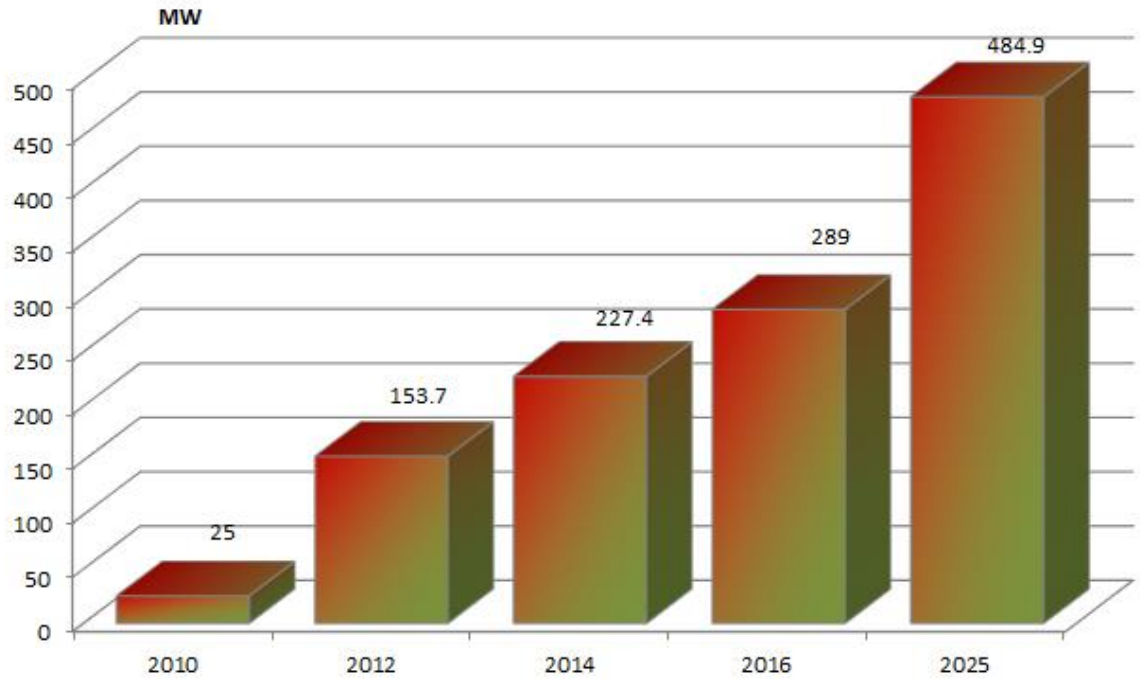

TABLE 6.7 Small Scale Residential PV - Net Tariff 60 cent - Financial year

	Customer Numbers at 30th June	Capacity Total	Average unit size	Total Energy Produced	Export to Grid	In house usage	Capacity at System Peak
UNIT	Number	** MW **	** KW **	********** GWH	**********		** MW **
2008	878.00	1.46	1.66	0.52	0.00	0.00	0.00
2009	2836.00	5.02	1.77	4.32	0.00	0.00	1.20
2010	3645.00	6.89	1.89	8.05	2.42	5.64	1.65
2011	4209.00	8.33	1.98	10.32	3.10	7.22	2.00
2012	3341.00	6.38	1.91	9.97	2.99	6.98	1.53
2013	3032.00	5.81	1.92	8.28	2.48	5.80	1.40
2014	2886.00	5.58	1.93	7.74	2.32	5.41	1.34
2015	2882.03	5.89	2.04	7.78	2.34	5.45	1.41
2016	2878.07	6.19	2.15	8.20	2.46	5.74	1.49
2017	38223.57	110.02	2.88	70.20	21.06	49.14	26.40
2018	42150.85	121.75	2.89	157.36	47.21	110.15	29.22
2019	42092.89	122.85	2.92	166.08	49.83	116.26	29.48
2020	42035.01	123.94	2.95	167.57	50.27	117.30	29.75
2021	41977.21	123.77	2.95	168.19	50.46	117.74	29.70
2022	41919.50	123.60	2.95	167.96	50.39	117.57	29.66
2023	41861.86	123.43	2.95	167.73	50.32	117.41	29.62
2024	41804.30	123.26	2.95	167.50	50.25	117.25	29.58
2025	41746.82	123.09	2.95	167.27	50.18	117.09	29.54
PERCENTAGE CHANGES							
2009	223.01	244.41	6.63	731.71	0.00	0.00	0.00
2010	28.53	37.24	6.78	86.20	0.00	0.00	37.24
2011	15.47	20.97	4.76	28.14	28.14	28.14	20.97
2012	-20.62	-23.40	-3.49	-3.35	-3.35	-3.35	-23.40
2013	-9.25	-8.93	0.35	-16.94	-16.94	-16.94	-8.93
2014	-4.82	-4.08	0.78	-6.61	-6.61	-6.61	-4.08
2015	-0.14	5.55	5.69	0.63	0.63	0.63	5.55
2016	-0.14	5.24	5.39	5.39	5.39	5.39	5.24
2017	1228.10	1675.99	33.72	755.74	755.74	755.74	1675.99
2018	10.27	10.66	0.35	124.16	124.16	124.16	10.66
2019	-0.14	0.90	1.04	5.54	5.54	5.54	0.90
2020	-0.14	0.89	1.03	0.89	0.89	0.89	0.89
2021	-0.14	-0.14	0.00	0.37	0.37	0.37	-0.14
2022	-0.14	-0.14	0.00	-0.14	-0.14	-0.14	-0.14
2023	-0.14	-0.14	0.00	-0.14	-0.14	-0.14	-0.14
2024	-0.14	-0.14	0.00	-0.14	-0.14	-0.14	-0.14
2025	-0.14	-0.14	0.00	-0.14	-0.14	-0.14	-0.14
COMPOUND GROWTH RATE (PER CENT) -							
2008-2014	21.94	25.06	2.57	56.82	0.00	0.00	0.00
2015-2020	70.92	83.94	7.62	84.76	84.76	84.76	83.94
2015-2025	30.64	35.53	3.74	35.90	35.90	35.90	35.53

All data are for the financial year ending in June of the year specified.

TABLE 6.8 Small Scale Residential PV - Gross Tariff 60 cent - Financial year

	Customer Numbers at 30th June	Capacity Total	Average unit size	Total Energy Produced	Export to Grid	In house usage	Capacity at System Peak
UNIT	Number	** MW **	** KW **	********** GWH	**********		** MW **
2008	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	7245.00	18.11	2.50	6.15	6.15	0.00	4.35
2011	37669.00	96.06	2.55	77.00	77.00	0.00	23.05
2012	41175.00	109.49	2.66	139.44	139.44	0.00	26.28
2013	40208.00	107.46	2.67	147.31	147.31	0.00	25.79
2014	39381.00	107.01	2.72	145.64	145.64	0.00	25.68
2015	39326.85	111.19	2.83	148.17	148.17	0.00	26.69
2016	39272.78	115.36	2.94	153.83	153.83	0.00	27.69
2017	3927.28	11.73	2.99	86.90	86.90	0.00	2.82
2018	0.00	0.00	0.00	3.98	3.98	0.00	0.00
2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2025	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PERCENTAGE CHANGES							
2009	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	419.93	430.33	2.00	1152.26	1152.26	0.00	430.33
2012	9.31	13.98	4.28	81.08	81.08	0.00	13.98
2013	-2.35	-1.85	0.51	5.65	5.65	0.00	-1.85
2014	-2.06	-0.42	1.67	-1.13	-1.13	0.00	-0.42
2015	-0.14	3.90	4.05	1.73	1.73	0.00	3.90
2016	-0.14	3.75	3.89	3.82	3.82	0.00	3.75
2017	-90.00	-89.83	1.70	-43.51	-43.51	0.00	-89.83
2018	-100.00	-100.00	-100.00	-95.42	-95.42	0.00	-100.00
2019	0.00	0.00	0.00	-100.00	-100.00	0.00	0.00
2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2025	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COMPOUND GROWTH RATE (PER CENT) -							
2008-2014	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015-2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015-2025	0.00	0.00	0.00	0.00	0.00	0.00	0.00

All data are for the financial year ending in June of the year specified.

TABLE 6.9 Small Scale Residential PV - Net Tariff 20 cent - Financial year

	Customer Numbers at 30th June	Capacity Total	Average unit size	Total Energy Produced	Export to Grid	In house usage	Capacity at System Peak
UNIT	Number	** MW **	** KW **	********** GWH	**********		** MW **
2008	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	3005.00	6.61	2.20	2.24	0.67	1.57	1.59
2012	4304.00	9.78	2.27	11.10	3.33	7.77	2.35
2013	4557.00	10.33	2.27	13.66	4.10	9.56	2.48
2014	4695.00	10.65	2.27	14.25	4.27	9.97	2.56
2015	4688.54	11.16	2.38	14.81	4.44	10.37	2.68
2016	4682.10	11.65	2.49	15.49	4.65	10.84	2.80
2017	8839.44	20.63	2.33	22.14	6.64	15.50	4.95
2018	9301.37	21.65	2.33	28.71	8.61	20.10	5.20
2019	9288.58	21.90	2.36	29.57	8.87	20.70	5.26
2020	9275.81	22.15	2.39	29.91	8.97	20.94	5.32
2021	9263.05	22.12	2.39	30.06	9.02	21.04	5.31
2022	9250.32	22.09	2.39	30.02	9.00	21.01	5.30
2023	9237.60	22.06	2.39	29.97	8.99	20.98	5.29
2024	9224.90	22.03	2.39	29.93	8.98	20.95	5.29
2025	9212.21	22.00	2.39	29.89	8.97	20.92	5.28
PERCENTAGE CHANGES							
2009	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	43.23	47.98	3.32	394.53	394.53	394.53	47.98
2013	5.88	5.61	-0.25	23.06	23.06	23.06	5.61
2014	3.03	3.12	0.09	4.33	4.33	4.33	3.12
2015	-0.14	4.70	4.85	3.92	3.92	3.92	4.70
2016	-0.14	4.48	4.62	4.59	4.59	4.59	4.48
2017	88.79	77.02	-6.24	42.96	42.96	42.96	77.02
2018	5.23	4.95	-0.27	29.67	29.67	29.67	4.95
2019	-0.14	1.15	1.29	3.00	3.00	3.00	1.15
2020	-0.14	1.13	1.27	1.14	1.14	1.14	1.13
2021	-0.14	-0.14	0.00	0.49	0.49	0.49	-0.14
2022	-0.14	-0.14	0.00	-0.14	-0.14	-0.14	-0.14
2023	-0.14	-0.14	0.00	-0.14	-0.14	-0.14	-0.14
2024	-0.14	-0.14	0.00	-0.14	-0.14	-0.14	-0.14
2025	-0.14	-0.14	0.00	-0.14	-0.14	-0.14	-0.14
COMPOUND GROWTH RATE (PER CENT) -							
2008-2014	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015-2020	14.62	14.70	0.07	15.10	15.10	15.10	14.70
2015-2025	6.99	7.03	0.04	7.28	7.28	7.28	7.03

All data are for the financial year ending in June of the year specified.

TABLE 6.10 Small Scale Residential PV - Gross Tariff 20 cent - Financial year

	Customer Numbers at 30th June	Capacity Total	Average unit size	Total Energy Produced	Export to Grid	In house usage	Capacity at System Peak
UNIT	Number	** MW **	** KW **	********** GWH	**********		** MW **
2008	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	1879.00	3.76	2.00	1.28	1.28	0.00	0.90
2012	2850.00	5.47	1.92	6.29	6.29	0.00	1.31
2013	3871.00	7.45	1.92	8.77	8.77	0.00	1.79
2014	4632.00	8.98	1.94	11.15	11.15	0.00	2.16
2015	4625.63	9.48	2.05	12.53	12.53	0.00	2.27
2016	4619.27	9.97	2.16	13.21	13.21	0.00	2.39
2017	461.93	1.02	2.21	7.54	7.54	0.00	0.24
2018	0.00	0.00	0.00	0.35	0.35	0.00	0.00
2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2025	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PERCENTAGE CHANGES							
2009	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	51.68	45.56	-4.04	393.20	393.20	0.00	45.56
2013	35.82	36.18	0.26	39.38	39.38	0.00	36.18
2014	19.66	20.58	0.77	27.17	27.17	0.00	20.58
2015	-0.14	5.53	5.67	12.39	12.39	0.00	5.53
2016	-0.14	5.22	5.37	5.37	5.37	0.00	5.22
2017	-90.00	-89.77	2.32	-42.95	-42.95	0.00	-89.77
2018	-100.00	-100.00	-100.00	-95.40	-95.40	0.00	-100.00
2019	0.00	0.00	0.00	-100.00	-100.00	0.00	0.00
2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2025	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COMPOUND GROWTH RATE (PER CENT) -							
2008-2014	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015-2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015-2025	0.00	0.00	0.00	0.00	0.00	0.00	0.00

All data are for the financial year ending in June of the year specified.

TABLE 6.11 Small Scale Residential PV - Net Tariff 0 cent - Financial year

	Customer Numbers at 30th June	Capacity Total	Average unit size	Total Energy Produced	Export to Grid	In house usage	Capacity at System Peak
UNIT	Number	** MW **	** KW **	********** GWH	**********		** MW **
2008	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	275.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	9908.00	22.54	2.27	7.86	2.36	5.50	5.41
2013	27422.00	95.21	2.27	57.56	17.27	40.29	22.85
2014	42108.00	0.00	2.26	106.88	32.06	74.82	0.00
2015	56208.00	118.04	2.37	154.61	46.38	108.23	28.33
2016	69408.00	145.76	2.48	206.93	62.08	144.85	34.98
2017	82608.00	173.48	2.53	258.68	77.60	181.07	41.63
2018	93408.00	196.16	2.58	305.49	91.65	213.84	47.08
2019	104208.00	218.84	2.61	348.35	104.50	243.84	52.52
2020	113808.00	239.00	2.64	388.75	116.62	272.12	57.36
2021	123408.00	259.16	2.64	425.40	127.62	297.78	62.20
2022	133008.00	279.32	2.64	459.83	137.95	321.88	67.04
2023	142608.00	299.48	2.64	494.26	148.28	345.98	71.87
2024	152208.00	319.64	2.64	528.69	158.61	370.09	76.71
2025	161808.00	339.80	2.64	563.12	168.94	394.19	81.55
PERCENTAGE CHANGES							
2009	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	3502.91	0.00	0.00	0.00	0.00	0.00	0.00
2013	176.77	322.44	-0.35	631.89	631.89	631.89	322.44
2014	53.56	-100.00	-0.25	85.70	85.70	85.70	-100.00
2015	33.49	0.00	4.86	44.66	44.66	44.66	0.00
2016	23.48	23.48	4.64	33.84	33.84	33.84	23.48
2017	19.02	19.02	2.02	25.01	25.01	25.01	19.02
2018	13.07	13.07	1.98	18.10	18.10	18.10	13.07
2019	11.56	11.56	1.16	14.03	14.03	14.03	11.56
2020	9.21	9.21	1.15	11.60	11.60	11.60	9.21
2021	8.44	8.44	0.00	9.43	9.43	9.43	8.44
2022	7.78	7.78	0.00	8.09	8.09	8.09	7.78
2023	7.22	7.22	0.00	7.49	7.49	7.49	7.22
2024	6.73	6.73	0.00	6.97	6.97	6.97	6.73
2025	6.31	6.31	0.00	6.51	6.51	6.51	6.31
COMPOUND GROWTH RATE (PER CENT) -							
2008-2014	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015-2020	15.15	15.15	2.18	20.25	20.25	20.25	15.15
2015-2025	11.15	11.15	1.08	13.80	13.80	13.80	11.15

All data are for the financial year ending in June of the year specified.

TABLE 6.12 Small Scale Business PV - Net Tariff 60 cent - Financial year

	Customer Numbers at 30th June	Capacity Total	Average unit size	Total Energy Produced	Export to Grid	In house usage	Capacity at System Peak
UNIT	Number	** MW **	** KW **	********** GWH	**********		** MW **
2008	43.00	0.17	4.00	0.00	0.00	0.00	0.00
2009	72.00	0.30	4.10	0.32	0.00	0.00	0.07
2010	103.00	0.46	4.50	0.51	0.20	0.31	0.11
2011	164.00	0.74	4.50	0.82	0.33	0.49	0.18
2012	155.00	0.64	4.11	0.93	0.37	0.56	0.15
2013	145.00	0.61	4.21	0.85	0.34	0.51	0.15
2014	146.00	0.61	4.16	0.83	0.33	0.50	0.15
2015	145.80	0.62	4.27	0.84	0.33	0.50	0.15
2016	145.60	0.64	4.38	0.86	0.34	0.51	0.15
2017	1465.87	10.06	6.86	6.15	2.46	3.69	2.42
2018	1612.56	11.13	6.90	14.39	5.75	8.63	2.67
2019	1610.35	11.29	7.01	15.22	6.09	9.13	2.71
2020	1608.14	11.45	7.12	15.44	6.18	9.26	2.75
2021	1605.93	11.61	7.23	15.66	6.26	9.39	2.79
2022	1603.72	11.77	7.34	15.88	6.35	9.53	2.83
2023	1601.52	11.93	7.45	16.09	6.44	9.66	2.86
2024	1599.32	12.09	7.56	16.31	6.52	9.79	2.90
2025	1597.13	12.25	7.67	16.53	6.61	9.92	2.94
PERCENTAGE CHANGES							
2009	67.44	71.63	2.50	0.00	0.00	0.00	0.00
2010	43.06	57.01	9.76	61.57	0.00	0.00	57.01
2011	59.22	59.22	0.00	59.67	59.67	59.67	59.22
2012	-5.49	-13.69	-8.67	14.29	14.29	14.29	-13.69
2013	-6.45	-4.24	2.37	-9.16	-9.16	-9.16	-4.24
2014	0.69	-0.33	-1.01	-2.36	-2.36	-2.36	-0.33
2015	-0.14	2.50	2.64	1.08	1.08	1.08	2.50
2016	-0.14	2.43	2.57	2.47	2.47	2.47	2.43
2017	906.78	1476.37	56.58	618.46	618.46	618.46	1476.37
2018	10.01	10.57	0.51	133.75	133.75	133.75	10.57
2019	-0.14	1.45	1.59	5.80	5.80	5.80	1.45
2020	-0.14	1.43	1.57	1.44	1.44	1.44	1.43
2021	-0.14	1.41	1.55	1.42	1.42	1.42	1.41
2022	-0.14	1.38	1.52	1.39	1.39	1.39	1.38
2023	-0.14	1.36	1.50	1.37	1.37	1.37	1.36
2024	-0.14	1.34	1.48	1.35	1.35	1.35	1.34
2025	-0.14	1.32	1.46	1.33	1.33	1.33	1.32
COMPOUND GROWTH RATE (PER CENT) -							
2008-2014	22.60	23.42	0.67	0.00	0.00	0.00	0.00
2015-2020	61.63	78.99	10.74	79.18	79.18	79.18	78.99
2015-2025	27.05	34.69	6.02	34.77	34.77	34.77	34.69

All data are for the financial year ending in June of the year specified.

TABLE 6.13 Small Scale Business PV - Gross Tariff 60 cent - Financial year

	Customer Numbers at 30th June	Capacity Total	Average unit size	Total Energy Produced	Export to Grid	In house usage	Capacity at System Peak
UNIT	Number	** MW **	** KW **	********** GWH	**********		** MW **
2008	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	209.00	1.36	6.50	0.46	0.46	0.00	0.33
2011	1163.00	7.62	6.55	6.08	6.08	0.00	1.83
2012	1493.00	10.21	6.84	12.07	12.07	0.00	2.45
2013	1477.00	10.17	6.88	13.83	13.83	0.00	2.44
2014	1471.00	10.18	6.92	13.81	13.81	0.00	2.44
2015	1468.98	10.32	7.03	13.92	13.92	0.00	2.48
2016	1466.96	10.47	7.14	14.12	14.12	0.00	2.51
2017	146.70	1.06	7.25	7.88	7.88	0.00	0.26
2018	0.00	0.00	0.00	0.36	0.36	0.00	0.00
2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2025	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PERCENTAGE CHANGES							
2009	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	456.46	460.74	0.77	1217.97	1217.97	0.00	460.74
2012	28.37	33.98	4.36	98.57	98.57	0.00	33.98
2013	-1.07	-0.39	0.69	14.60	14.60	0.00	-0.39
2014	-0.41	0.11	0.52	-0.14	-0.14	0.00	0.11
2015	-0.14	1.45	1.59	0.78	0.78	0.00	1.45
2016	-0.14	1.43	1.57	1.44	1.44	0.00	1.43
2017	-90.00	-89.85	1.54	-44.18	-44.18	0.00	-89.85
2018	-100.00	-100.00	-100.00	-95.42	-95.42	0.00	-100.00
2019	0.00	0.00	0.00	-100.00	-100.00	0.00	0.00
2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2025	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COMPOUND GROWTH RATE (PER CENT) -							
2008-2014	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015-2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015-2025	0.00	0.00	0.00	0.00	0.00	0.00	0.00

All data are for the financial year ending in June of the year specified.

TABLE 6.14 Small Scale Business PV - Net Tariff 20 cent - Financial year

	Customer Numbers at 30th June	Capacity Total	Average unit size	Total Energy Produced	Export to Grid	In house usage	Capacity at System Peak
UNIT	Number	** MW **	** KW **	********** GWH	**********		** MW **
2008	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	57.00	0.24	4.20	0.08	0.03	0.05	0.06
2012	103.00	0.45	4.37	0.47	0.19	0.28	0.11
2013	113.00	0.51	4.48	0.65	0.26	0.39	0.12
2014	115.00	0.53	4.57	0.70	0.28	0.42	0.13
2015	114.84	0.54	4.68	0.72	0.29	0.43	0.13
2016	114.68	0.55	4.79	0.74	0.30	0.44	0.13
2017	198.15	0.92	4.65	1.00	0.40	0.60	0.22
2018	207.43	0.96	4.65	1.28	0.51	0.77	0.23
2019	207.14	0.99	4.76	1.32	0.53	0.79	0.24
2020	206.86	1.01	4.87	1.35	0.54	0.81	0.24
2021	206.58	1.03	4.98	1.38	0.55	0.83	0.25
2022	206.29	1.05	5.09	1.41	0.56	0.85	0.25
2023	206.01	1.07	5.20	1.44	0.58	0.86	0.26
2024	205.73	1.09	5.31	1.47	0.59	0.88	0.26
2025	205.44	1.11	5.42	1.50	0.60	0.90	0.27
PERCENTAGE CHANGES							
2009	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	80.70	87.97	4.02	472.69	472.69	472.69	87.97
2013	9.71	12.44	2.49	39.38	39.38	39.38	12.44
2014	1.77	3.95	2.14	8.00	8.00	8.00	3.95
2015	-0.14	2.26	2.40	3.10	3.10	3.10	2.26
2016	-0.14	2.21	2.35	2.24	2.24	2.24	2.21
2017	72.78	67.66	-2.96	35.84	35.84	35.84	67.66
2018	4.68	4.59	-0.08	27.64	27.64	27.64	4.59
2019	-0.14	2.23	2.37	3.38	3.38	3.38	2.23
2020	-0.14	2.17	2.31	2.20	2.20	2.20	2.17
2021	-0.14	2.12	2.26	2.15	2.15	2.15	2.12
2022	-0.14	2.07	2.21	2.09	2.09	2.09	2.07
2023	-0.14	2.02	2.16	2.05	2.05	2.05	2.02
2024	-0.14	1.98	2.12	2.00	2.00	2.00	1.98
2025	-0.14	1.93	2.07	1.95	1.95	1.95	1.93
COMPOUND GROWTH RATE (PER CENT) -							
2008-2014	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015-2020	12.49	13.36	0.77	13.37	13.37	13.37	13.36
2015-2025	5.99	7.54	1.47	7.56	7.56	7.56	7.54

All data are for the financial year ending in June of the year specified.

TABLE 6.15 Small Scale Business PV - Gross Tariff 20 cent - Financial year

	Customer Numbers at 30th June	Capacity Total	Average unit size	Total Energy Produced	Export to Grid	In house usage	Capacity at System Peak
UNIT	Number	** MW **	** KW **	********** GWH	**********		** MW **
2008	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	33.00	0.10	2.90	0.03	0.03	0.00	0.02
2012	56.00	0.19	3.48	0.19	0.19	0.00	0.05
2013	78.00	0.33	4.23	0.35	0.35	0.00	0.08
2014	93.00	0.39	4.24	0.49	0.49	0.00	0.09
2015	92.87	0.40	4.35	0.54	0.54	0.00	0.10
2016	92.74	0.41	4.46	0.55	0.55	0.00	0.10
2017	9.27	0.04	4.57	0.31	0.31	0.00	0.01
2018	0.00	0.00	0.00	0.01	0.01	0.00	0.00
2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2025	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PERCENTAGE CHANGES							
2009	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	69.70	103.76	20.07	493.53	493.53	0.00	103.76
2013	39.29	69.23	21.50	81.96	81.96	0.00	69.23
2014	19.23	19.39	0.14	40.09	40.09	0.00	19.39
2015	-0.14	2.46	2.60	10.18	10.18	0.00	2.46
2016	-0.14	2.39	2.53	2.42	2.42	0.00	2.39
2017	-90.00	-89.75	2.47	-43.66	-43.66	0.00	-89.75
2018	-100.00	-100.00	-100.00	-95.40	-95.40	0.00	-100.00
2019	0.00	0.00	0.00	-100.00	-100.00	0.00	0.00
2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2025	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COMPOUND GROWTH RATE (PER CENT) -							
2008-2014	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015-2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015-2025	0.00	0.00	0.00	0.00	0.00	0.00	0.00

All data are for the financial year ending in June of the year specified.

TABLE 6.16 Small Scale Business PV - Net Tariff 0 cent - Financial year

	Customer Numbers at 30th June	Capacity Total	Average unit size	Total Energy Produced	Export to Grid	In house usage	Capacity at System Peak
UNIT	Number	** MW **	** KW **	********** GWH	**********		** MW **
2008	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	8.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	267.00	1.23	4.59	0.43	0.17	0.26	0.29
2013	1043.00	4.72	4.53	4.05	1.62	2.43	1.13
2014	1999.00	9.05	4.53	9.35	3.74	5.61	2.17
2015	2719.00	12.31	4.53	14.50	5.80	8.70	2.95
2016	3739.00	17.33	4.64	20.09	8.03	12.05	4.16
2017	4759.00	22.59	4.75	27.07	10.83	16.24	5.42
2018	6019.00	29.23	4.86	35.13	14.05	21.08	7.01
2019	7279.00	36.15	4.97	44.34	17.74	26.60	8.67
2020	8479.00	43.04	5.08	53.72	21.49	32.23	10.33
2021	9679.00	50.19	5.19	63.26	25.30	37.96	12.05
2022	10879.00	57.61	5.30	73.16	29.26	43.89	13.83
2023	12079.00	65.30	5.41	83.41	33.36	50.05	15.67
2024	13279.00	73.24	5.52	94.02	37.61	56.41	17.58
2025	14479.00	81.46	5.63	105.00	42.00	63.00	19.55
PERCENTAGE CHANGES							
2009	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	3237.50	0.00	0.00	0.00	0.00	0.00	0.00
2013	290.64	285.31	-1.36	846.23	846.23	846.23	285.31
2014	91.66	91.67	0.01	130.63	130.63	130.63	91.67
2015	36.02	36.02	0.00	55.10	55.10	55.10	36.02
2016	37.51	40.86	2.43	38.54	38.54	38.54	40.86
2017	27.28	30.30	2.37	34.75	34.75	34.75	30.30
2018	26.48	29.41	2.32	29.80	29.80	29.80	29.41
2019	20.93	23.67	2.27	26.21	26.21	26.21	23.67
2020	16.49	19.07	2.22	21.15	21.15	21.15	19.07
2021	14.15	16.63	2.17	17.75	17.75	17.75	16.63
2022	12.40	14.78	2.12	15.64	15.64	15.64	14.78
2023	11.03	13.34	2.08	14.02	14.02	14.02	13.34
2024	9.93	12.17	2.03	12.72	12.72	12.72	12.17
2025	9.04	11.21	1.99	11.67	11.67	11.67	11.21
COMPOUND GROWTH RATE (PER CENT) -							
2008-2014	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015-2020	25.54	28.45	2.32	29.95	29.95	29.95	28.45
2015-2025	18.20	20.80	2.20	21.89	21.89	21.89	20.80

All data are for the financial year ending in June of the year specified.

Appendix A: Energy and demand by network tariff – Essential Energy – NIEIR economic drivers

Electricity Projections to 2025 - NIEIR ECONOMIC DRIVERS DECEMBER 2014

TABLE A.1 Total Energy - Essential Energy

	Residential		Controlled Load		Low Voltage(Merged tariffs)			
	BLNN2AU	BLNT3AU	BLNC1AU	BLNC2AU	LV 1 Rate	LV TOU > 100mwh	LV TOU average	LV TOU < 100mwh
UNIT	**********	**********	GWH	**********	**********	**********	**********	**********
2008	3406.95	57.51	1086.32	351.43	2064.75	351.21	19.64	503.48
2009	3656.99	64.79	1066.91	342.57	1896.79	352.58	37.08	548.37
2010	3650.51	81.07	968.86	309.37	1764.96	356.16	42.18	483.65
2011	3495.77	86.74	949.11	293.69	1547.98	342.91	68.30	433.06
2012	3339.77	109.93	931.35	283.59	1440.38	340.64	107.90	475.46
2013	3283.07	135.83	876.80	266.10	1359.66	357.24	148.77	552.70
2014	3152.90	155.42	833.17	250.40	1259.50	341.40	107.75	542.07
2015	3075.46	166.64	827.34	246.14	1259.61	341.43	111.90	536.90
2016	3013.65	179.46	821.55	241.96	1202.24	332.53	113.78	538.60
2017	2914.11	188.54	815.80	237.85	1141.88	322.28	115.13	537.65
2018	2811.29	197.28	810.09	233.80	1085.00	312.48	116.54	536.94
2019	2769.72	208.03	804.41	229.83	1034.51	304.02	118.37	538.07
2020	2741.77	220.14	798.78	225.92	984.85	295.33	120.05	538.38
2021	2722.84	233.12	793.19	222.08	940.96	287.92	122.19	540.63
2022	2705.38	244.55	787.64	218.30	896.60	279.95	124.03	541.42
2023	2689.86	254.93	782.13	214.59	853.51	271.93	125.78	541.70
2024	2678.10	265.72	776.65	210.95	802.08	260.76	125.92	535.03
2025	2671.19	277.46	771.21	207.36	761.75	252.71	127.40	534.05
PERCENTAGE CHANGES								
2009	7.34	12.66	-1.79	-2.52	-8.13	0.39	88.80	8.92
2010	-0.18	25.13	-9.19	-9.69	-6.95	1.02	13.75	-11.80
2011	-4.24	6.99	-2.04	-5.07	-12.29	-3.72	61.93	-10.46
2012	-4.46	26.74	-1.87	-3.44	-6.95	-0.66	57.98	9.79
2013	-1.70	23.56	-5.86	-6.17	-5.60	4.87	37.88	16.25
2014	-3.96	14.42	-4.98	-5.90	-7.37	-4.43	-27.57	-1.92
2015	-2.46	7.22	-0.70	-1.70	0.01	0.01	3.86	-0.95
2016	-2.01	7.70	-0.70	-1.70	-4.55	-2.61	1.68	0.32
2017	-3.30	5.06	-0.70	-1.70	-5.02	-3.08	1.18	-0.17
2018	-3.53	4.64	-0.70	-1.70	-4.98	-3.04	1.22	-0.13
2019	-1.48	5.45	-0.70	-1.70	-4.65	-2.71	1.57	0.21
2020	-1.01	5.82	-0.70	-1.70	-4.80	-2.86	1.42	0.06
2021	-0.69	5.89	-0.70	-1.70	-4.46	-2.51	1.78	0.42
2022	-0.64	4.90	-0.70	-1.70	-4.71	-2.77	1.51	0.15
2023	-0.57	4.25	-0.70	-1.70	-4.81	-2.86	1.41	0.05
2024	-0.44	4.23	-0.70	-1.70	-6.03	-4.11	0.11	-1.23
2025	-0.26	4.42	-0.70	-1.70	-5.03	-3.09	1.17	-0.18
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	-1.28	18.02	-4.33	-5.49	-7.91	-0.47	32.80	1.24
2015-2020	-2.27	5.73	-0.70	-1.70	-4.80	-2.86	1.41	0.05
2015-2025	-1.40	5.23	-0.70	-1.70	-4.91	-2.96	1.31	-0.05

All data are for the financial year ending in June of the year specified.

TABLE A.1 Total Energy - Essential Energy (continued)

	Low Voltage	High Voltage			Customer Specific	LV Public Lighting	LV Unmetered	Total
	LV TOU 3 rate	HV 1 Rate	HV TOU	HV TUO average				
UNIT	**********	**********		GWH	**********	**********		
2008	1431.28	448.36	250.34	3.28	1927.23	0.00	50.55	11952.33
2009	1550.98	369.77	342.12	8.55	1924.14	2.03	52.63	12216.30
2010	1803.22	310.95	390.22	33.80	1879.44	2.02	56.88	12133.29
2011	1831.80	208.59	501.41	50.78	1989.44	1.17	48.24	11848.99
2012	1915.61	197.81	599.89	52.36	2141.64	0.00	32.47	11968.80
2013	1973.74	197.54	626.86	64.02	2385.78	0.00	33.05	12261.16
2014	2018.50	163.14	678.48	66.05	2430.37	0.00	33.74	12032.89
2015	2047.79	156.27	688.90	66.43	2431.29	0.00	34.37	11990.47
2016	2104.10	151.54	708.12	67.64	2428.62	0.00	35.04	11938.82
2017	2151.40	145.89	722.63	68.38	2413.76	0.00	35.67	11810.96
2018	2200.69	140.81	739.34	69.30	2406.34	0.00	36.28	11696.18
2019	2258.86	136.39	759.08	70.48	2408.71	0.00	36.93	11677.42
2020	2315.00	131.95	778.45	71.59	2404.21	0.00	37.62	11664.03
2021	2381.10	128.29	802.25	73.09	2413.29	0.00	38.32	11699.26
2022	2442.49	124.21	823.35	74.30	2413.59	0.00	39.02	11714.83
2023	2503.04	120.18	844.45	75.49	2411.82	0.00	39.73	11729.14
2024	2532.23	114.80	855.01	75.71	2371.69	0.00	40.42	11645.06
2025	2588.96	110.88	875.35	76.78	2363.40	0.00	41.09	11659.59
PERCENTAGE CHANGES								
2009	8.36	-17.53	36.66	160.67	-0.16	0.00	4.11	2.21
2010	16.26	-15.91	14.06	295.32	-2.32	-0.49	8.08	-0.68
2011	1.58	-32.92	28.49	50.24	5.85	-42.08	-15.19	-2.34
2012	4.58	-5.17	19.64	3.11	7.65	-100.00	-32.69	1.01
2013	3.03	-0.14	4.50	22.27	11.40	0.00	1.79	2.44
2014	2.27	-17.41	8.23	3.17	1.87	0.00	2.08	-1.86
2015	1.45	-4.21	1.54	0.58	0.04	0.00	1.87	-0.35
2016	2.75	-3.03	2.79	1.82	-0.11	0.00	1.93	-0.43
2017	2.25	-3.73	2.05	1.09	-0.61	0.00	1.82	-1.07
2018	2.29	-3.48	2.31	1.35	-0.31	0.00	1.71	-0.97
2019	2.64	-3.14	2.67	1.70	0.10	0.00	1.77	-0.16
2020	2.49	-3.25	2.55	1.58	-0.19	0.00	1.88	-0.11
2021	2.86	-2.78	3.06	2.09	0.38	0.00	1.87	0.30
2022	2.58	-3.18	2.63	1.66	0.01	0.00	1.83	0.13
2023	2.48	-3.24	2.56	1.60	-0.07	0.00	1.81	0.12
2024	1.17	-4.48	1.25	0.29	-1.66	0.00	1.74	-0.72
2025	2.24	-3.42	2.38	1.41	-0.35	0.00	1.65	0.12
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	5.90	-15.51	18.08	64.94	3.94	0.00	-6.52	0.11
2015-2020	2.48	-3.33	2.47	1.51	-0.22	0.00	1.82	-0.55
2015-2025	2.37	-3.37	2.42	1.46	-0.28	0.00	1.80	-0.28

All data are for the financial year ending in June of the year specified.

TABLE A.2 Total Customers - Essential Energy

	Residential		Controlled Load		Low Voltage(Merged tariffs)			
	BLNN2AU	BLNT3AU	BLNC1AU	BLNC2AU	LV 1 Rate	LV TOU > 100mwh	LV TOU average	LV TOU < 100mwh
UNIT	**********	**********	number	**********	**********	**********	**********	**********
2008	687632.00	3758.00	377790.00	125065.00	83845.00	1317.00	20.00	8405.00
2009	692346.00	4245.00	376652.00	125415.00	83397.00	1302.00	23.00	8809.00
2010	697236.00	5349.00	375176.00	125229.00	82323.00	1384.00	24.00	8803.00
2011	700853.00	7671.00	374569.00	123168.00	81904.00	1424.00	22.00	9131.00
2012	698383.00	10367.00	372802.00	120391.00	80320.00	1404.00	23.00	9489.00
2013	702134.00	13171.00	374461.00	118361.00	80942.00	1432.00	23.00	10006.00
2014	707638.00	17137.00	374776.00	117428.00	81607.00	1521.00	22.00	10620.00
2015	711610.00	18839.28	372152.56	115431.73	82757.59	1557.86	20.13	11146.75
2016	715961.25	20704.09	369547.50	113469.39	82664.02	1584.57	20.87	11498.06
2017	719660.13	22289.33	366960.66	111540.41	82207.37	1607.86	21.59	11832.67
2018	723368.44	23878.60	364391.94	109644.23	81784.36	1631.84	22.33	12179.82
2019	727198.81	25520.20	361841.19	107780.27	81615.52	1658.99	23.15	12558.42
2020	731315.50	27284.50	359308.31	105948.01	81334.00	1685.31	23.97	12939.43
2021	735597.69	29119.71	356793.16	104146.89	81317.05	1715.11	24.88	13355.76
2022	739435.25	30764.37	354295.59	102376.39	81102.77	1743.11	25.78	13767.75
2023	742924.94	32259.95	351815.53	100635.99	80818.98	1770.74	26.71	14186.12
2024	746466.63	33777.81	349352.81	98925.18	79606.70	1787.40	27.50	14525.86
2025	750187.63	35372.54	346907.34	97243.45	79161.58	1813.64	28.46	14950.83
PERCENTAGE CHANGES								
2009	0.69	12.96	-0.30	0.28	-0.53	-1.14	15.00	4.81
2010	0.71	26.01	-0.39	-0.15	-1.29	6.30	4.35	-0.07
2011	0.52	43.41	-0.16	-1.65	-0.51	2.89	-8.33	3.73
2012	-0.35	35.15	-0.47	-2.25	-1.93	-1.40	4.55	3.92
2013	0.54	27.05	0.45	-1.69	0.77	1.99	0.00	5.45
2014	0.78	30.11	0.08	-0.79	0.82	6.22	-4.35	6.14
2015	0.56	9.93	-0.70	-1.70	1.41	2.42	-8.48	4.96
2016	0.61	9.90	-0.70	-1.70	-0.11	1.71	3.66	3.15
2017	0.52	7.66	-0.70	-1.70	-0.55	1.47	3.43	2.91
2018	0.52	7.13	-0.70	-1.70	-0.51	1.49	3.46	2.93
2019	0.53	6.87	-0.70	-1.70	-0.21	1.66	3.64	3.11
2020	0.57	6.91	-0.70	-1.70	-0.34	1.59	3.57	3.03
2021	0.59	6.73	-0.70	-1.70	-0.02	1.77	3.76	3.22
2022	0.52	5.65	-0.70	-1.70	-0.26	1.63	3.63	3.08
2023	0.47	4.86	-0.70	-1.70	-0.35	1.58	3.60	3.04
2024	0.48	4.71	-0.70	-1.70	-1.50	0.94	2.97	2.39
2025	0.50	4.72	-0.70	-1.70	-0.56	1.47	3.49	2.93
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	0.48	28.77	-0.13	-1.04	-0.45	2.43	1.60	3.98
2015-2020	0.55	7.69	-0.70	-1.70	-0.35	1.59	3.55	3.03
2015-2025	0.53	6.50	-0.70	-1.70	-0.44	1.53	3.52	2.98

All data are for the financial year ending in June of the year specified.

TABLE A.2 Total Customers - Essential Energy (continued)

	Low Voltage	High Voltage			Customer Specific	LV Public Lighting	LV Unmetered	Total
	LV TOU 3 rate	HV 1 Rate	HV TOU	HV TUO average				
UNIT	**********	**********		number	**********	**********	**********	**********
2008	2100.00	55.00	54.00	2.00	31.00	4.00	81.001290159.00	
2009	2311.00	51.00	63.00	2.00	29.00	4.00	81.001294730.00	
2010	3009.00	46.00	69.00	4.00	30.00	4.00	81.001298767.00	
2011	3148.00	37.00	100.00	5.00	31.00	4.00	81.001302148.00	
2012	3230.00	35.00	100.00	4.00	31.00	4.00	81.001296664.00	
2013	3322.00	35.00	108.00	6.00	34.00	4.00	81.001304120.00	
2014	3542.00	25.00	122.00	7.00	36.00	4.00	81.001314566.00	
2015	4157.32	28.63	115.77	6.13	36.00	4.00	81.001317944.75	
2016	4325.48	27.97	116.45	6.14	36.00	4.00	81.001320046.75	
2017	4491.23	27.22	116.70	6.12	36.00	4.00	81.001320882.25	
2018	4664.91	26.53	117.10	6.11	36.00	4.00	81.001321837.25	
2019	4853.61	25.91	117.72	6.12	36.00	4.00	81.001323320.88	
2020	5047.13	25.28	118.26	6.12	36.00	4.00	81.001325156.88	
2021	5257.82	24.73	119.10	6.13	36.00	4.00	81.001327599.13	
2022	5471.28	24.14	119.70	6.13	36.00	4.00	81.001329253.25	
2023	5691.62	23.56	120.26	6.13	36.00	4.00	81.001330401.50	
2024	5886.22	22.84	120.05	6.09	36.00	4.00	81.001330626.13	
2025	6118.00	22.27	120.51	6.09	36.00	4.00	81.001332053.38	
PERCENTAGE CHANGES								
2009	10.05	-7.27	16.67	0.00	-6.45	0.00	0.00	0.35
2010	30.20	-9.80	9.52	100.00	3.45	0.00	0.00	0.31
2011	4.62	-19.57	44.93	25.00	3.33	0.00	0.00	0.26
2012	2.60	-5.41	0.00	-20.00	0.00	0.00	0.00	-0.42
2013	2.85	0.00	8.00	50.00	9.68	0.00	0.00	0.58
2014	6.62	-28.57	12.96	16.67	5.88	0.00	0.00	0.80
2015	17.37	14.51	-5.10	-12.41	0.00	0.00	0.00	0.26
2016	4.04	-2.31	0.58	0.11	0.00	0.00	0.00	0.16
2017	3.83	-2.66	0.22	-0.26	0.00	0.00	0.00	0.06
2018	3.87	-2.53	0.35	-0.13	0.00	0.00	0.00	0.07
2019	4.05	-2.36	0.52	0.05	0.00	0.00	0.00	0.11
2020	3.99	-2.42	0.46	-0.01	0.00	0.00	0.00	0.14
2021	4.17	-2.18	0.71	0.24	0.00	0.00	0.00	0.18
2022	4.06	-2.38	0.50	0.03	0.00	0.00	0.00	0.12
2023	4.03	-2.42	0.47	-0.01	0.00	0.00	0.00	0.09
2024	3.42	-3.04	-0.18	-0.65	0.00	0.00	0.00	0.02
2025	3.94	-2.50	0.38	-0.09	0.00	0.00	0.00	0.11
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	9.10	-12.31	14.55	23.22	2.52	0.00	0.00	0.31
2015-2020	3.96	-2.46	0.43	-0.05	0.00	0.00	0.00	0.11
2015-2025	3.94	-2.48	0.40	-0.07	0.00	0.00	0.00	0.11

All data are for the financial year ending in June of the year specified.

TABLE A.3 Total Anytime Demand - Essential Energy

	Residential		Controlled Load		Low Voltage(Merged tariffs)			
	BLNN2AU	BLNT3AU	BLNC1AU	BLNC2AU	LV 1 Rate	LV TOU > 100mwh	LV TOU average	LV TOU < 100mwh
UNIT	**********			MW	**********			
2008	0.00	0.00	0.00	0.00	1930.00	0.00	0.00	0.00
2009	0.00	0.00	0.00	0.00	1720.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	1610.00	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00	1440.00	0.00	0.00	0.00
2012	0.00	0.00	0.00	0.00	1220.00	0.00	0.00	0.00
2013	0.00	0.00	0.00	0.00	1050.00	0.00	0.00	0.00
2014	0.00	0.00	0.00	0.00	989.92	0.00	0.00	0.00
2015	0.00	0.00	0.00	0.00	989.99	0.00	0.00	0.00
2016	0.00	0.00	0.00	0.00	955.08	0.00	0.00	0.00
2017	0.00	0.00	0.00	0.00	917.94	0.00	0.00	0.00
2018	0.00	0.00	0.00	0.00	882.53	0.00	0.00	0.00
2019	0.00	0.00	0.00	0.00	850.73	0.00	0.00	0.00
2020	0.00	0.00	0.00	0.00	819.11	0.00	0.00	0.00
2021	0.00	0.00	0.00	0.00	790.85	0.00	0.00	0.00
2022	0.00	0.00	0.00	0.00	761.99	0.00	0.00	0.00
2023	0.00	0.00	0.00	0.00	733.63	0.00	0.00	0.00
2024	0.00	0.00	0.00	0.00	699.35	0.00	0.00	0.00
2025	0.00	0.00	0.00	0.00	672.11	0.00	0.00	0.00
PERCENTAGE CHANGES								
2009	0.00	0.00	0.00	0.00	-10.88	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	-6.40	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00	-10.56	0.00	0.00	0.00
2012	0.00	0.00	0.00	0.00	-15.28	0.00	0.00	0.00
2013	0.00	0.00	0.00	0.00	-13.93	0.00	0.00	0.00
2014	0.00	0.00	0.00	0.00	-5.72	0.00	0.00	0.00
2015	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
2016	0.00	0.00	0.00	0.00	-3.53	0.00	0.00	0.00
2017	0.00	0.00	0.00	0.00	-3.89	0.00	0.00	0.00
2018	0.00	0.00	0.00	0.00	-3.86	0.00	0.00	0.00
2019	0.00	0.00	0.00	0.00	-3.60	0.00	0.00	0.00
2020	0.00	0.00	0.00	0.00	-3.72	0.00	0.00	0.00
2021	0.00	0.00	0.00	0.00	-3.45	0.00	0.00	0.00
2022	0.00	0.00	0.00	0.00	-3.65	0.00	0.00	0.00
2023	0.00	0.00	0.00	0.00	-3.72	0.00	0.00	0.00
2024	0.00	0.00	0.00	0.00	-4.67	0.00	0.00	0.00
2025	0.00	0.00	0.00	0.00	-3.89	0.00	0.00	0.00
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	0.00	0.00	0.00	0.00	-10.53	0.00	0.00	0.00
2015-2020	0.00	0.00	0.00	0.00	-3.72	0.00	0.00	0.00
2015-2025	0.00	0.00	0.00	0.00	-3.80	0.00	0.00	0.00

All data are for the financial year ending in June of the year specified.

TABLE A.3 Total Anytime Demand - Essential Energy (continued)

	Low Voltage	High Voltage			Customer Specific	LV Public Lighting	LV Unmetered	Total
	LV TOU 3 rate	HV 1 Rate	HV TOU	HV TUO average				
UNIT	**********	**********		MW	**********	**********	**********	**********
2008	50.00	1180.00	10.00	0.00	2720.00	0.00	0.00	5890.00
2009	40.00	1010.00	10.00	0.00	2690.00	0.00	0.00	5470.00
2010	40.00	870.00	0.00	0.00	3820.00	0.00	0.00	6340.00
2011	30.00	610.00	0.00	0.00	2740.00	0.00	0.00	4820.00
2012	30.00	570.00	0.00	0.00	2970.00	0.00	0.00	4790.00
2013	20.00	580.00	0.00	0.00	3030.00	0.00	0.00	4680.00
2014	20.32	501.51	0.00	0.00	3042.97	0.00	0.00	4554.71
2015	20.52	485.37	0.00	0.00	3039.47	0.00	0.00	4535.35
2016	20.92	474.16	0.00	0.00	3033.20	0.00	0.00	4483.36
2017	21.24	460.67	0.00	0.00	3020.06	0.00	0.00	4419.91
2018	21.58	448.43	0.00	0.00	3013.48	0.00	0.00	4366.03
2019	21.98	437.69	0.00	0.00	3015.58	0.00	0.00	4325.99
2020	22.36	426.82	0.00	0.00	3011.59	0.00	0.00	4279.89
2021	22.81	417.79	0.00	0.00	3019.64	0.00	0.00	4251.09
2022	23.22	407.65	0.00	0.00	3019.90	0.00	0.00	4212.76
2023	23.62	397.57	0.00	0.00	3018.34	0.00	0.00	4173.16
2024	23.81	383.95	0.00	0.00	2982.70	0.00	0.00	4089.82
2025	24.18	373.95	0.00	0.00	2975.32	0.00	0.00	4045.57
PERCENTAGE CHANGES								
2009	-20.00	-14.41	0.00	0.00	-1.10	0.00	0.00	-7.13
2010	0.00	-13.86	-100.00	0.00	42.01	0.00	0.00	15.90
2011	-25.00	-29.89	0.00	0.00	-28.27	0.00	0.00	-23.97
2012	0.00	-6.56	0.00	0.00	8.39	0.00	0.00	-0.62
2013	-33.33	1.75	0.00	0.00	2.02	0.00	0.00	-2.30
2014	1.58	-13.53	0.00	0.00	0.43	0.00	0.00	-2.68
2015	1.01	-3.22	0.00	0.00	-0.12	0.00	0.00	-0.43
2016	1.92	-2.31	0.00	0.00	-0.21	0.00	0.00	-1.15
2017	1.57	-2.85	0.00	0.00	-0.43	0.00	0.00	-1.42
2018	1.60	-2.66	0.00	0.00	-0.22	0.00	0.00	-1.22
2019	1.84	-2.40	0.00	0.00	0.07	0.00	0.00	-0.92
2020	1.73	-2.48	0.00	0.00	-0.13	0.00	0.00	-1.07
2021	1.99	-2.12	0.00	0.00	0.27	0.00	0.00	-0.67
2022	1.80	-2.43	0.00	0.00	0.01	0.00	0.00	-0.90
2023	1.73	-2.47	0.00	0.00	-0.05	0.00	0.00	-0.94
2024	0.81	-3.42	0.00	0.00	-1.18	0.00	0.00	-2.00
2025	1.56	-2.61	0.00	0.00	-0.25	0.00	0.00	-1.08
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	-13.94	-13.29	0.00	0.00	1.89	0.00	0.00	-4.19
2015-2020	1.73	-2.54	0.00	0.00	-0.18	0.00	0.00	-1.15
2015-2025	1.66	-2.57	0.00	0.00	-0.21	0.00	0.00	-1.14

All data are for the financial year ending in June of the year specified.

TABLE A.4 Total Peak Demand - Essential Energy

	Residential		Controlled Load		Low Voltage(Merged tariffs)			
	BLNN2AU	BLNT3AU	BLNC1AU	BLNC2AU	LV 1 Rate	LV TOU > 100mwh	LV TOU average	LV TOU < 100mwh
UNIT	**********			MW	**********			
2008	0.00	0.00	0.00	0.00	0.00	0.00	60.00	0.00
2009	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.00	150.00	0.00
2012	0.00	0.00	0.00	0.00	0.00	0.00	200.00	0.00
2013	0.00	0.00	0.00	0.00	0.00	0.00	260.00	0.00
2014	0.00	0.00	0.00	0.00	0.00	0.00	205.84	0.00
2015	0.00	0.00	0.00	0.00	0.00	0.00	211.40	0.00
2016	0.00	0.00	0.00	0.00	0.00	0.00	214.09	0.00
2017	0.00	0.00	0.00	0.00	0.00	0.00	215.88	0.00
2018	0.00	0.00	0.00	0.00	0.00	0.00	217.83	0.00
2019	0.00	0.00	0.00	0.00	0.00	0.00	220.31	0.00
2020	0.00	0.00	0.00	0.00	0.00	0.00	222.59	0.00
2021	0.00	0.00	0.00	0.00	0.00	0.00	225.48	0.00
2022	0.00	0.00	0.00	0.00	0.00	0.00	227.96	0.00
2023	0.00	0.00	0.00	0.00	0.00	0.00	230.30	0.00
2024	0.00	0.00	0.00	0.00	0.00	0.00	230.49	0.00
2025	0.00	0.00	0.00	0.00	0.00	0.00	232.46	0.00
PERCENTAGE CHANGES								
2009	0.00	0.00	0.00	0.00	0.00	0.00	66.67	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00
2012	0.00	0.00	0.00	0.00	0.00	0.00	33.33	0.00
2013	0.00	0.00	0.00	0.00	0.00	0.00	30.00	0.00
2014	0.00	0.00	0.00	0.00	0.00	0.00	-20.83	0.00
2015	0.00	0.00	0.00	0.00	0.00	0.00	2.70	0.00
2016	0.00	0.00	0.00	0.00	0.00	0.00	1.27	0.00
2017	0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.00
2018	0.00	0.00	0.00	0.00	0.00	0.00	0.90	0.00
2019	0.00	0.00	0.00	0.00	0.00	0.00	1.14	0.00
2020	0.00	0.00	0.00	0.00	0.00	0.00	1.04	0.00
2021	0.00	0.00	0.00	0.00	0.00	0.00	1.30	0.00
2022	0.00	0.00	0.00	0.00	0.00	0.00	1.10	0.00
2023	0.00	0.00	0.00	0.00	0.00	0.00	1.03	0.00
2024	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00
2025	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.00
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	0.00	0.00	0.00	0.00	0.00	0.00	22.81	0.00
2015-2020	0.00	0.00	0.00	0.00	0.00	0.00	1.04	0.00
2015-2025	0.00	0.00	0.00	0.00	0.00	0.00	0.95	0.00

All data are for the financial year ending in June of the year specified.

TABLE A.4 Total Peak Demand - Essential Energy (continued)

	Low Voltage	High Voltage			Customer Specific	LV Public Lighting	LV Unmetered	Total
	LV TOU 3 rate	HV 1 Rate	HV TOU	HV TUO average				
UNIT	**********	**********		MW	**********	**********	**********	
2008	3880.00	0.00	630.00	10.00	600.00	0.00	0.00	5180.00
2009	4260.00	0.00	850.00	20.00	760.00	0.00	0.00	5990.00
2010	5060.00	0.00	950.00	70.00	750.00	0.00	0.00	6930.00
2011	5230.00	0.00	1220.00	110.00	900.00	0.00	0.00	7610.00
2012	5420.00	0.00	1450.00	110.00	970.00	0.00	0.00	8150.00
2013	5550.00	0.00	1500.00	130.00	1060.00	0.00	0.00	8500.00
2014	5650.65	0.00	1584.16	135.00	1525.72	0.00	0.00	9101.36
2015	5701.43	0.00	1599.16	134.68	1505.83	0.00	0.00	9152.50
2016	5814.04	0.00	1629.57	137.03	1516.75	0.00	0.00	9311.47
2017	5903.55	0.00	1651.53	137.94	1505.20	0.00	0.00	9414.10
2018	5998.76	0.00	1677.18	139.48	1504.83	0.00	0.00	9538.09
2019	6108.89	0.00	1706.98	141.25	1504.47	0.00	0.00	9681.90
2020	6214.98	0.00	1736.08	143.00	1503.28	0.00	0.00	9819.93
2021	6338.57	0.00	1771.44	145.27	1506.70	0.00	0.00	9987.46
2022	6452.57	0.00	1802.53	147.14	1506.99	0.00	0.00	10137.20
2023	6564.12	0.00	1833.35	148.94	1506.18	0.00	0.00	10282.89
2024	6617.62	0.00	1848.68	149.28	1489.59	0.00	0.00	10335.65
2025	6721.04	0.00	1878.04	150.90	1486.12	0.00	0.00	10468.56
PERCENTAGE CHANGES								
2009	9.79	0.00	34.92	100.00	26.67	0.00	0.00	15.64
2010	18.78	0.00	11.76	250.00	-1.32	0.00	0.00	15.69
2011	3.36	0.00	28.42	57.14	20.00	0.00	0.00	9.81
2012	3.63	0.00	18.85	0.00	7.78	0.00	0.00	7.10
2013	2.40	0.00	3.45	18.18	9.28	0.00	0.00	4.29
2014	1.81	0.00	5.61	3.84	43.94	0.00	0.00	7.07
2015	0.90	0.00	0.95	-0.24	-1.30	0.00	0.00	0.56
2016	1.98	0.00	1.90	1.75	0.73	0.00	0.00	1.74
2017	1.54	0.00	1.35	0.66	-0.76	0.00	0.00	1.10
2018	1.61	0.00	1.55	1.12	-0.02	0.00	0.00	1.32
2019	1.84	0.00	1.78	1.27	-0.02	0.00	0.00	1.51
2020	1.74	0.00	1.70	1.24	-0.08	0.00	0.00	1.43
2021	1.99	0.00	2.04	1.59	0.23	0.00	0.00	1.71
2022	1.80	0.00	1.76	1.28	0.02	0.00	0.00	1.50
2023	1.73	0.00	1.71	1.22	-0.05	0.00	0.00	1.44
2024	0.82	0.00	0.84	0.23	-1.10	0.00	0.00	0.51
2025	1.56	0.00	1.59	1.09	-0.23	0.00	0.00	1.29
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	6.47	0.00	16.61	54.31	16.83	0.00	0.00	9.85
2015-2020	1.74	0.00	1.66	1.21	-0.03	0.00	0.00	1.42
2015-2025	1.66	0.00	1.62	1.14	-0.13	0.00	0.00	1.35

All data are for the financial year ending in June of the year specified.

TABLE A.5 Total Off Peak Demand - Essential Energy

	Residential		Controlled Load		Low Voltage(Merged tariffs)			
	BLNN2AU	BLNT3AU	BLNC1AU	BLNC2AU	LV 1 Rate	LV TOU > 100mwh	LV TOU average	LV TOU < 100mwh
UNIT	**********			MW	**********			
2008	0.00	0.00	0.00	0.00	0.00	0.00	40.00	0.00
2009	0.00	0.00	0.00	0.00	0.00	0.00	70.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	80.00	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.00	130.00	0.00
2012	0.00	0.00	0.00	0.00	0.00	0.00	190.00	0.00
2013	0.00	0.00	0.00	0.00	0.00	0.00	260.00	0.00
2014	0.00	0.00	0.00	0.00	0.00	0.00	204.50	0.00
2015	0.00	0.00	0.00	0.00	0.00	0.00	210.71	0.00
2016	0.00	0.00	0.00	0.00	0.00	0.00	213.05	0.00
2017	0.00	0.00	0.00	0.00	0.00	0.00	215.00	0.00
2018	0.00	0.00	0.00	0.00	0.00	0.00	216.86	0.00
2019	0.00	0.00	0.00	0.00	0.00	0.00	219.38	0.00
2020	0.00	0.00	0.00	0.00	0.00	0.00	221.63	0.00
2021	0.00	0.00	0.00	0.00	0.00	0.00	224.51	0.00
2022	0.00	0.00	0.00	0.00	0.00	0.00	226.97	0.00
2023	0.00	0.00	0.00	0.00	0.00	0.00	229.31	0.00
2024	0.00	0.00	0.00	0.00	0.00	0.00	229.50	0.00
2025	0.00	0.00	0.00	0.00	0.00	0.00	231.46	0.00
PERCENTAGE CHANGES								
2009	0.00	0.00	0.00	0.00	0.00	0.00	75.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	14.29	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.00	62.50	0.00
2012	0.00	0.00	0.00	0.00	0.00	0.00	46.15	0.00
2013	0.00	0.00	0.00	0.00	0.00	0.00	36.84	0.00
2014	0.00	0.00	0.00	0.00	0.00	0.00	-21.34	0.00
2015	0.00	0.00	0.00	0.00	0.00	0.00	3.04	0.00
2016	0.00	0.00	0.00	0.00	0.00	0.00	1.11	0.00
2017	0.00	0.00	0.00	0.00	0.00	0.00	0.92	0.00
2018	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.00
2019	0.00	0.00	0.00	0.00	0.00	0.00	1.16	0.00
2020	0.00	0.00	0.00	0.00	0.00	0.00	1.02	0.00
2021	0.00	0.00	0.00	0.00	0.00	0.00	1.30	0.00
2022	0.00	0.00	0.00	0.00	0.00	0.00	1.10	0.00
2023	0.00	0.00	0.00	0.00	0.00	0.00	1.03	0.00
2024	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00
2025	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.00
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	0.00	0.00	0.00	0.00	0.00	0.00	31.25	0.00
2015-2020	0.00	0.00	0.00	0.00	0.00	0.00	1.01	0.00
2015-2025	0.00	0.00	0.00	0.00	0.00	0.00	0.94	0.00

All data are for the financial year ending in June of the year specified.

TABLE A.5 Total Off Peak Demand - Essential Energy (continued)

	Low Voltage	High Voltage			Customer Specific	LV Public Lighting	LV Unmetered	Total
	LV TOU 3 rate	HV 1 Rate	HV TOU	HV TUO average				
UNIT	**********	**********		MW	**********	**********	**********	
2008	3750.00	0.00	640.00	10.00	630.00	0.00	0.00	5070.00
2009	4120.00	0.00	870.00	20.00	740.00	0.00	0.00	5820.00
2010	4930.00	0.00	990.00	60.00	740.00	0.00	0.00	6800.00
2011	5050.00	0.00	1230.00	90.00	920.00	0.00	0.00	7420.00
2012	5260.00	0.00	1440.00	90.00	960.00	0.00	0.00	7940.00
2013	5410.00	0.00	1500.00	120.00	1050.00	0.00	0.00	8340.00
2014	5484.36	0.00	1581.59	121.22	1198.62	0.00	0.00	8590.29
2015	5545.62	0.00	1597.86	122.61	1231.65	0.00	0.00	8708.46
2016	5649.04	0.00	1627.58	123.90	1216.18	0.00	0.00	8829.75
2017	5739.11	0.00	1649.86	125.15	1219.07	0.00	0.00	8948.18
2018	5830.09	0.00	1675.31	126.33	1212.72	0.00	0.00	9061.32
2019	5937.93	0.00	1705.16	128.04	1215.45	0.00	0.00	9205.96
2020	6040.64	0.00	1734.18	129.57	1212.98	0.00	0.00	9339.01
2021	6160.97	0.00	1769.53	131.66	1216.49	0.00	0.00	9503.16
2022	6271.68	0.00	1800.58	133.34	1216.34	0.00	0.00	9648.91
2023	6380.15	0.00	1831.37	134.98	1215.88	0.00	0.00	9791.68
2024	6432.12	0.00	1846.67	135.28	1202.43	0.00	0.00	9846.00
2025	6532.66	0.00	1876.01	136.75	1199.69	0.00	0.00	9976.57
PERCENTAGE CHANGES								
2009	9.87	0.00	35.94	100.00	17.46	0.00	0.00	14.79
2010	19.66	0.00	13.79	200.00	0.00	0.00	0.00	16.84
2011	2.43	0.00	24.24	50.00	24.32	0.00	0.00	9.12
2012	4.16	0.00	17.07	0.00	4.35	0.00	0.00	7.01
2013	2.85	0.00	4.17	33.33	9.38	0.00	0.00	5.04
2014	1.37	0.00	5.44	1.02	14.15	0.00	0.00	3.00
2015	1.12	0.00	1.03	1.15	2.76	0.00	0.00	1.38
2016	1.87	0.00	1.86	1.05	-1.26	0.00	0.00	1.39
2017	1.59	0.00	1.37	1.01	0.24	0.00	0.00	1.34
2018	1.59	0.00	1.54	0.95	-0.52	0.00	0.00	1.26
2019	1.85	0.00	1.78	1.35	0.23	0.00	0.00	1.60
2020	1.73	0.00	1.70	1.20	-0.20	0.00	0.00	1.45
2021	1.99	0.00	2.04	1.61	0.29	0.00	0.00	1.76
2022	1.80	0.00	1.75	1.27	-0.01	0.00	0.00	1.53
2023	1.73	0.00	1.71	1.23	-0.04	0.00	0.00	1.48
2024	0.81	0.00	0.84	0.23	-1.11	0.00	0.00	0.55
2025	1.56	0.00	1.59	1.09	-0.23	0.00	0.00	1.33
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	6.54	0.00	16.27	51.56	11.32	0.00	0.00	9.19
2015-2020	1.72	0.00	1.65	1.11	-0.31	0.00	0.00	1.41
2015-2025	1.65	0.00	1.62	1.10	-0.26	0.00	0.00	1.37

All data are for the financial year ending in June of the year specified.

TABLE A.6 Total Shoulder Demand - Essential Energy

	Residential		Controlled Load		Low Voltage(Merged tariffs)			
	BLNN2AU	BLNT3AU	BLNC1AU	BLNC2AU	LV 1 Rate	LV TOU > 100mwh	LV TOU average	LV TOU < 100mwh
UNIT	**********			MW	**********			
2008	0.00	0.00	0.00	0.00	0.00	0.00	60.00	0.00
2009	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	110.00	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.00	150.00	0.00
2012	0.00	0.00	0.00	0.00	0.00	0.00	200.00	0.00
2013	0.00	0.00	0.00	0.00	0.00	0.00	270.00	0.00
2014	0.00	0.00	0.00	0.00	0.00	0.00	214.89	0.00
2015	0.00	0.00	0.00	0.00	0.00	0.00	220.12	0.00
2016	0.00	0.00	0.00	0.00	0.00	0.00	223.21	0.00
2017	0.00	0.00	0.00	0.00	0.00	0.00	224.93	0.00
2018	0.00	0.00	0.00	0.00	0.00	0.00	227.04	0.00
2019	0.00	0.00	0.00	0.00	0.00	0.00	229.59	0.00
2020	0.00	0.00	0.00	0.00	0.00	0.00	231.99	0.00
2021	0.00	0.00	0.00	0.00	0.00	0.00	234.98	0.00
2022	0.00	0.00	0.00	0.00	0.00	0.00	237.57	0.00
2023	0.00	0.00	0.00	0.00	0.00	0.00	240.01	0.00
2024	0.00	0.00	0.00	0.00	0.00	0.00	240.21	0.00
2025	0.00	0.00	0.00	0.00	0.00	0.00	242.26	0.00
PERCENTAGE CHANGES								
2009	0.00	0.00	0.00	0.00	0.00	0.00	66.67	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	10.00	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.00	36.36	0.00
2012	0.00	0.00	0.00	0.00	0.00	0.00	33.33	0.00
2013	0.00	0.00	0.00	0.00	0.00	0.00	35.00	0.00
2014	0.00	0.00	0.00	0.00	0.00	0.00	-20.41	0.00
2015	0.00	0.00	0.00	0.00	0.00	0.00	2.43	0.00
2016	0.00	0.00	0.00	0.00	0.00	0.00	1.41	0.00
2017	0.00	0.00	0.00	0.00	0.00	0.00	0.77	0.00
2018	0.00	0.00	0.00	0.00	0.00	0.00	0.94	0.00
2019	0.00	0.00	0.00	0.00	0.00	0.00	1.12	0.00
2020	0.00	0.00	0.00	0.00	0.00	0.00	1.04	0.00
2021	0.00	0.00	0.00	0.00	0.00	0.00	1.29	0.00
2022	0.00	0.00	0.00	0.00	0.00	0.00	1.10	0.00
2023	0.00	0.00	0.00	0.00	0.00	0.00	1.03	0.00
2024	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00
2025	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.00
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	0.00	0.00	0.00	0.00	0.00	0.00	23.69	0.00
2015-2020	0.00	0.00	0.00	0.00	0.00	0.00	1.06	0.00
2015-2025	0.00	0.00	0.00	0.00	0.00	0.00	0.96	0.00

All data are for the financial year ending in June of the year specified.

TABLE A.6 Total Shoulder Demand - Essential Energy (continued)

	Low Voltage	High Voltage			Customer Specific	LV Public Lighting	LV Unmetered	Total
	LV TOU 3 rate	HV 1 Rate	HV TOU	HV TUO average				
UNIT	**********	**********		MW	**********	**********	**********	**********
2008	4080.00	0.00	720.00	10.00	630.00	0.00	0.00	5500.00
2009	4480.00	0.00	950.00	20.00	770.00	0.00	0.00	6320.00
2010	5340.00	0.00	1060.00	70.00	770.00	0.00	0.00	7350.00
2011	5510.00	0.00	1340.00	110.00	950.00	0.00	0.00	8060.00
2012	5730.00	0.00	1570.00	110.00	1000.00	0.00	0.00	8610.00
2013	5880.00	0.00	1630.00	130.00	1100.00	0.00	0.00	9010.00
2014	5982.44	0.00	1717.66	135.12	1582.02	0.00	0.00	9632.14
2015	6038.32	0.00	1735.84	134.74	1575.91	0.00	0.00	9704.93
2016	6156.50	0.00	1767.87	137.12	1579.94	0.00	0.00	9864.64
2017	6251.83	0.00	1792.19	138.02	1571.56	0.00	0.00	9978.52
2018	6352.38	0.00	1819.78	139.57	1569.34	0.00	0.00	10108.11
2019	6469.14	0.00	1852.24	141.33	1569.87	0.00	0.00	10262.17
2020	6581.42	0.00	1883.75	143.09	1568.17	0.00	0.00	10408.41
2021	6712.32	0.00	1922.15	145.36	1571.97	0.00	0.00	10586.79
2022	6833.04	0.00	1955.87	147.23	1572.16	0.00	0.00	10745.87
2023	6951.17	0.00	1989.32	149.03	1571.37	0.00	0.00	10900.90
2024	7007.82	0.00	2005.94	149.37	1554.02	0.00	0.00	10957.36
2025	7117.34	0.00	2037.81	150.99	1550.41	0.00	0.00	11098.82
PERCENTAGE CHANGES								
2009	9.80	0.00	31.94	100.00	22.22	0.00	0.00	14.91
2010	19.20	0.00	11.58	250.00	0.00	0.00	0.00	16.30
2011	3.18	0.00	26.42	57.14	23.38	0.00	0.00	9.66
2012	3.99	0.00	17.16	0.00	5.26	0.00	0.00	6.82
2013	2.62	0.00	3.82	18.18	10.00	0.00	0.00	4.65
2014	1.74	0.00	5.38	3.94	43.82	0.00	0.00	6.90
2015	0.93	0.00	1.06	-0.28	-0.39	0.00	0.00	0.76
2016	1.96	0.00	1.85	1.77	0.26	0.00	0.00	1.65
2017	1.55	0.00	1.38	0.65	-0.53	0.00	0.00	1.15
2018	1.61	0.00	1.54	1.13	-0.14	0.00	0.00	1.30
2019	1.84	0.00	1.78	1.26	0.03	0.00	0.00	1.52
2020	1.74	0.00	1.70	1.24	-0.11	0.00	0.00	1.43
2021	1.99	0.00	2.04	1.59	0.24	0.00	0.00	1.71
2022	1.80	0.00	1.75	1.28	0.01	0.00	0.00	1.50
2023	1.73	0.00	1.71	1.22	-0.05	0.00	0.00	1.44
2024	0.81	0.00	0.84	0.23	-1.10	0.00	0.00	0.52
2025	1.56	0.00	1.59	1.09	-0.23	0.00	0.00	1.29
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	6.59	0.00	15.59	54.33	16.59	0.00	0.00	9.79
2015-2020	1.74	0.00	1.65	1.21	-0.10	0.00	0.00	1.41
2015-2025	1.66	0.00	1.62	1.15	-0.16	0.00	0.00	1.35

All data are for the financial year ending in June of the year specified.

TABLE A.7 Total Capacity Demand - Essential Energy

	Residential		Controlled Load		Low Voltage(Merged tariffs)			
	BLNN2AU	BLNT3AU	BLNC1AU	BLNC2AU	LV 1 Rate	LV TOU > 100mwh	LV TOU average	LV TOU < 100mwh
UNIT	**********			MW	**********			
2008	0.00	0.00	0.00	0.00	2010.00	0.00	0.00	0.00
2009	0.00	0.00	0.00	0.00	1710.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	1590.00	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00	1440.00	0.00	0.00	0.00
2012	0.00	0.00	0.00	0.00	1180.00	0.00	0.00	0.00
2013	0.00	0.00	0.00	0.00	1020.00	0.00	0.00	0.00
2014	0.00	0.00	0.00	0.00	961.64	0.00	0.00	0.00
2015	0.00	0.00	0.00	0.00	961.70	0.00	0.00	0.00
2016	0.00	0.00	0.00	0.00	927.79	0.00	0.00	0.00
2017	0.00	0.00	0.00	0.00	891.71	0.00	0.00	0.00
2018	0.00	0.00	0.00	0.00	857.32	0.00	0.00	0.00
2019	0.00	0.00	0.00	0.00	826.43	0.00	0.00	0.00
2020	0.00	0.00	0.00	0.00	795.71	0.00	0.00	0.00
2021	0.00	0.00	0.00	0.00	768.26	0.00	0.00	0.00
2022	0.00	0.00	0.00	0.00	740.22	0.00	0.00	0.00
2023	0.00	0.00	0.00	0.00	712.67	0.00	0.00	0.00
2024	0.00	0.00	0.00	0.00	679.37	0.00	0.00	0.00
2025	0.00	0.00	0.00	0.00	652.91	0.00	0.00	0.00
PERCENTAGE CHANGES								
2009	0.00	0.00	0.00	0.00	-14.93	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	-7.02	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00	-9.43	0.00	0.00	0.00
2012	0.00	0.00	0.00	0.00	-18.06	0.00	0.00	0.00
2013	0.00	0.00	0.00	0.00	-13.56	0.00	0.00	0.00
2014	0.00	0.00	0.00	0.00	-5.72	0.00	0.00	0.00
2015	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
2016	0.00	0.00	0.00	0.00	-3.53	0.00	0.00	0.00
2017	0.00	0.00	0.00	0.00	-3.89	0.00	0.00	0.00
2018	0.00	0.00	0.00	0.00	-3.86	0.00	0.00	0.00
2019	0.00	0.00	0.00	0.00	-3.60	0.00	0.00	0.00
2020	0.00	0.00	0.00	0.00	-3.72	0.00	0.00	0.00
2021	0.00	0.00	0.00	0.00	-3.45	0.00	0.00	0.00
2022	0.00	0.00	0.00	0.00	-3.65	0.00	0.00	0.00
2023	0.00	0.00	0.00	0.00	-3.72	0.00	0.00	0.00
2024	0.00	0.00	0.00	0.00	-4.67	0.00	0.00	0.00
2025	0.00	0.00	0.00	0.00	-3.89	0.00	0.00	0.00
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	0.00	0.00	0.00	0.00	-11.56	0.00	0.00	0.00
2015-2020	0.00	0.00	0.00	0.00	-3.72	0.00	0.00	0.00
2015-2025	0.00	0.00	0.00	0.00	-3.80	0.00	0.00	0.00

All data are for the financial year ending in June of the year specified.

TABLE A.7 Total Capacity Demand - Essential Energy (continued)

	Low Voltage	High Voltage			Customer Specific	LV Public Lighting	LV Unmetered	Total
	LV TOU 3 rate	HV 1 Rate	HV TOU	HV TUO average				
UNIT	**********			MW	**********			
2008	0.00	1150.00	0.00	0.00	0.00	0.00	0.00	3160.00
2009	0.00	970.00	0.00	0.00	0.00	0.00	0.00	2680.00
2010	0.00	790.00	0.00	0.00	0.00	0.00	0.00	2380.00
2011	0.00	590.00	0.00	0.00	0.00	0.00	0.00	2030.00
2012	0.00	650.00	0.00	0.00	0.00	0.00	0.00	1830.00
2013	0.00	620.00	0.00	0.00	0.00	0.00	0.00	1640.00
2014	0.00	536.09	0.00	0.00	0.00	0.00	0.00	1497.73
2015	0.00	518.85	0.00	0.00	0.00	0.00	0.00	1480.55
2016	0.00	506.86	0.00	0.00	0.00	0.00	0.00	1434.66
2017	0.00	492.44	0.00	0.00	0.00	0.00	0.00	1384.15
2018	0.00	479.36	0.00	0.00	0.00	0.00	0.00	1336.68
2019	0.00	467.87	0.00	0.00	0.00	0.00	0.00	1294.30
2020	0.00	456.26	0.00	0.00	0.00	0.00	0.00	1251.97
2021	0.00	446.60	0.00	0.00	0.00	0.00	0.00	1214.86
2022	0.00	435.77	0.00	0.00	0.00	0.00	0.00	1175.99
2023	0.00	424.99	0.00	0.00	0.00	0.00	0.00	1137.66
2024	0.00	410.43	0.00	0.00	0.00	0.00	0.00	1089.80
2025	0.00	399.74	0.00	0.00	0.00	0.00	0.00	1052.65
PERCENTAGE CHANGES								
2009	0.00	-15.65	0.00	0.00	0.00	0.00	0.00	-15.19
2010	0.00	-18.56	0.00	0.00	0.00	0.00	0.00	-11.19
2011	0.00	-25.32	0.00	0.00	0.00	0.00	0.00	-14.71
2012	0.00	10.17	0.00	0.00	0.00	0.00	0.00	-9.85
2013	0.00	-4.62	0.00	0.00	0.00	0.00	0.00	-10.38
2014	0.00	-13.53	0.00	0.00	0.00	0.00	0.00	-8.67
2015	0.00	-3.22	0.00	0.00	0.00	0.00	0.00	-1.15
2016	0.00	-2.31	0.00	0.00	0.00	0.00	0.00	-3.10
2017	0.00	-2.85	0.00	0.00	0.00	0.00	0.00	-3.52
2018	0.00	-2.66	0.00	0.00	0.00	0.00	0.00	-3.43
2019	0.00	-2.40	0.00	0.00	0.00	0.00	0.00	-3.17
2020	0.00	-2.48	0.00	0.00	0.00	0.00	0.00	-3.27
2021	0.00	-2.12	0.00	0.00	0.00	0.00	0.00	-2.96
2022	0.00	-2.43	0.00	0.00	0.00	0.00	0.00	-3.20
2023	0.00	-2.47	0.00	0.00	0.00	0.00	0.00	-3.26
2024	0.00	-3.42	0.00	0.00	0.00	0.00	0.00	-4.21
2025	0.00	-2.61	0.00	0.00	0.00	0.00	0.00	-3.41
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	0.00	-11.94	0.00	0.00	0.00	0.00	0.00	-11.70
2015-2020	0.00	-2.54	0.00	0.00	0.00	0.00	0.00	-3.30
2015-2025	0.00	-2.57	0.00	0.00	0.00	0.00	0.00	-3.35

All data are for the financial year ending in June of the year specified.

Appendix B: NIEIR's relevant experience

NIEIR has a long history of experience in the energy sector and in forecasting spanning some 30 years.

In the 1980s and early 1990s, NIEIR prepared economic and energy projections for Elcom, SECV, QEC, SP Power Networks and, on occasion, SECWA. NIEIR was also engaged by the ESAA to complete both major studies and forecasting work.

NIEIR's client base expanded significantly over the 2000s in terms of the energy sector. NIEIR has a regular client base which includes nearly all network businesses on the eastern seaboard as well as network service providers in each State.

NIEIR is also directly involved in preparing energy and maximum demand forecasts for the States of Victoria, Queensland, Western Australia and Tasmania. These forecasts are used by organisations such as Transend Networks (Tasmania), Powerlink Queensland and the Independent Market Operator (Western Australia) in their Annual Planning Reviews.

NIEIR also services a large number of distribution businesses in Australia, preparing both energy forecasts and maximum demand forecasts (at various levels of disaggregation – terminal stations, BSPs, zone sub-stations). Most of these businesses have been clients of NIEIR for some 10-15 years. Forecasts prepared over the last 12 months include those for the following companies (these are regular clients):

- Agility Management (AGL Electricity)
- United Energy
- Citipower
- Powercor Australia
- Integral Energy
- Essential Energy
- Ergon Energy
- Independent Market Operator (IMO)
- ENERGEX
- Endeavour Energy
- SA Power Networks
- Transend Networks
- Ausgrid Energy

NIEIR has also previously completed work for Transgrid, Origin Energy, TRUenergy (now Energy Australia) and Aurora Energy.

NIEIR has a project team within the company who are effectively engaged full time in electricity and gas forecasting.

Appendix C: Essential Energy energy and customer number projections consistent with AEMO's economic drivers for New South Wales

(Note: PV assumptions are identical under both NIEIR and AEMO driver scenarios.)

Electricity Projections to 2025 -AEMO ECONOMIC DRIVERS DECEMBER 2014

TABLE C.1 Total Energy - Essential Energy

	Resi-dential	Control-led Load	Business	Customer Specific	Public Lighting	Total
UNIT	**********	**********	GWH	**********	**********	
2008	3464.46	1437.75	5072.34	1927.23	50.55	11952.33
2009	3721.78	1409.48	5106.24	1924.14	54.66	12216.30
2010	3731.58	1278.23	5185.14	1879.44	58.90	12133.29
2011	3582.51	1242.80	4984.83	1989.44	49.41	11848.99
2012	3449.70	1214.94	5130.05	2141.64	32.47	11968.80
2013	3418.90	1142.90	5280.53	2385.78	33.05	12261.16
2014	3308.32	1083.57	5176.89	2430.37	33.74	12032.89
2015	3255.54	1073.48	5185.58	2417.89	34.38	11966.87
2016	3218.82	1063.51	5212.06	2424.97	35.07	11954.44
2017	3147.32	1053.64	5219.74	2421.96	35.73	11878.40
2018	3082.85	1043.89	5228.92	2421.99	36.40	11814.04
2019	3084.99	1034.24	5252.89	2427.27	37.08	11836.46
2020	3098.64	1024.70	5274.50	2425.93	37.79	11861.56
2021	3115.76	1015.27	5315.06	2434.74	38.53	11919.37
2022	3129.09	1005.94	5358.92	2442.63	39.26	11975.84
2023	3143.05	996.72	5405.32	2449.85	40.00	12034.93
2024	3161.62	987.60	5385.00	2417.12	40.73	11992.06
2025	3185.14	978.57	5424.50	2415.56	41.43	12045.20
PERCENTAGE CHANGES						
2009	7.43	-1.97	0.67	-0.16	8.13	2.21
2010	0.26	-9.31	1.55	-2.32	7.76	-0.68
2011	-3.99	-2.77	-3.86	5.85	-16.11	-2.34
2012	-3.71	-2.24	2.91	7.65	-34.28	1.01
2013	-0.89	-5.93	2.93	11.40	1.79	2.44
2014	-3.23	-5.19	-1.96	1.87	2.08	-1.86
2015	-1.60	-0.93	0.17	-0.51	1.90	-0.55
2016	-1.13	-0.93	0.51	0.29	2.00	-0.10
2017	-2.22	-0.93	0.15	-0.12	1.89	-0.64
2018	-2.05	-0.93	0.18	0.00	1.87	-0.54
2019	0.07	-0.92	0.46	0.22	1.86	0.19
2020	0.44	-0.92	0.41	-0.06	1.94	0.21
2021	0.55	-0.92	0.77	0.36	1.93	0.49
2022	0.43	-0.92	0.83	0.32	1.90	0.47
2023	0.45	-0.92	0.87	0.30	1.89	0.49
2024	0.59	-0.92	-0.38	-1.34	1.82	-0.36
2025	0.74	-0.91	0.73	-0.06	1.73	0.44
COMPOUND GROWTH RATE (PER CENT) -						
2008-2014	-0.77	-4.60	0.34	3.94	-6.52	0.11
2015-2020	-0.98	-0.93	0.34	0.07	1.91	-0.18
2015-2025	-0.22	-0.92	0.45	-0.01	1.88	0.07

All data are for the financial year ending in June of the year specified.

TABLE C.2 Total Customers June 30th - Essential Energy

	Resi-dential	Control-led Load	Business	Customer Specific	Public Lighting	Total
UNIT	**********	**********	number	**********	**********	
2008	691390.00	502855.00	95798.00	31.00	85.00	1290159.00
2009	696591.00	502067.00	95958.00	29.00	85.00	1294730.00
2010	702585.00	500405.00	95662.00	30.00	85.00	1298767.00
2011	708524.00	497737.00	95771.00	31.00	85.00	1302148.00
2012	708750.00	493193.00	94605.00	31.00	85.00	1296664.00
2013	715305.00	492822.00	95874.00	34.00	85.00	1304120.00
2014	724775.00	492204.00	97466.00	36.00	85.00	1314566.00
2015	732798.38	487584.28	99415.34	36.00	85.00	1319919.00
2016	741240.25	483016.91	100141.05	36.00	85.00	1324519.13
2017	750031.44	478501.06	100541.45	36.00	85.00	1329195.00
2018	760944.38	474036.16	100874.77	36.00	85.00	1335976.25
2019	772898.81	469621.47	101384.05	36.00	85.00	1344025.25
2020	784685.50	465256.31	101794.67	36.00	85.00	1351857.50
2021	795475.00	460940.06	102429.26	36.00	85.00	1358965.38
2022	804933.06	456672.00	103085.20	36.00	85.00	1364811.38
2023	813843.56	452451.53	103724.59	36.00	85.00	1370140.75
2024	822893.38	448278.00	103280.77	36.00	85.00	1374573.13
2025	831978.13	444150.81	103715.41	36.00	85.00	1379965.38
PERCENTAGE CHANGES						
2009	0.75	-0.16	0.17	-6.45	0.00	0.35
2010	0.86	-0.33	-0.31	3.45	0.00	0.31
2011	0.85	-0.53	0.11	3.33	0.00	0.26
2012	0.03	-0.91	-1.22	0.00	0.00	-0.42
2013	0.92	-0.08	1.34	9.68	0.00	0.58
2014	1.32	-0.13	1.66	5.88	0.00	0.80
2015	1.11	-0.94	2.00	0.00	0.00	0.41
2016	1.15	-0.94	0.73	0.00	0.00	0.35
2017	1.19	-0.93	0.40	0.00	0.00	0.35
2018	1.45	-0.93	0.33	0.00	0.00	0.51
2019	1.57	-0.93	0.50	0.00	0.00	0.60
2020	1.52	-0.93	0.41	0.00	0.00	0.58
2021	1.38	-0.93	0.62	0.00	0.00	0.53
2022	1.19	-0.93	0.64	0.00	0.00	0.43
2023	1.11	-0.92	0.62	0.00	0.00	0.39
2024	1.11	-0.92	-0.43	0.00	0.00	0.32
2025	1.10	-0.92	0.42	0.00	0.00	0.39
COMPOUND GROWTH RATE (PER CENT) -						
2008-2014	0.79	-0.36	0.29	2.52	0.00	0.31
2015-2020	1.38	-0.93	0.47	0.00	0.00	0.48
2015-2025	1.28	-0.93	0.42	0.00	0.00	0.45

All data are for the financial year ending in June of the year specified.

TABLE C.3 Total Anytime Energy - Essential Energy

	Resi-dential	Control-led Load	Business	Customer Specific	Public Lighting	Total
UNIT	**********	**********	GWH	**********	**********	
2008	3406.95	1437.75	1495.62	0.00	1.98	6342.30
2009	3656.99	1409.48	1382.19	0.00	2.03	6450.69
2010	3650.51	1278.23	1281.19	0.00	2.02	6211.95
2011	3495.77	1242.80	1113.78	0.00	1.17	5853.52
2012	3339.77	1214.94	1075.42	0.00	0.00	5630.13
2013	3283.07	1142.90	1051.58	0.00	0.00	5477.55
2014	3152.90	1083.57	957.24	0.00	0.00	5193.71
2015	3082.67	1073.48	961.38	0.00	0.00	5117.53
2016	3027.46	1063.51	916.61	0.00	0.00	5007.58
2017	2938.23	1053.64	876.02	0.00	0.00	4867.90
2018	2851.51	1043.89	833.60	0.00	0.00	4729.00
2019	2827.44	1034.24	796.03	0.00	0.00	4657.71
2020	2815.13	1024.70	758.43	0.00	0.00	4598.27
2021	2808.47	1015.27	724.65	0.00	0.00	4548.40
2022	2801.33	1005.94	692.22	0.00	0.00	4499.50
2023	2796.00	996.72	660.98	0.00	0.00	4453.70
2024	2794.67	987.60	622.84	0.00	0.00	4405.11
2025	2797.77	978.57	592.92	0.00	0.00	4369.26
PERCENTAGE CHANGES						
2009	7.34	-1.97	-7.58	0.00	2.53	1.71
2010	-0.18	-9.31	-7.31	0.00	-0.49	-3.70
2011	-4.24	-2.77	-13.07	0.00	-42.08	-5.77
2012	-4.46	-2.24	-3.44	0.00	-100.00	-3.82
2013	-1.70	-5.93	-2.22	0.00	0.00	-2.71
2014	-3.96	-5.19	-8.97	0.00	0.00	-5.18
2015	-2.23	-0.93	0.43	0.00	0.00	-1.47
2016	-1.79	-0.93	-4.66	0.00	0.00	-2.15
2017	-2.95	-0.93	-4.43	0.00	0.00	-2.79
2018	-2.95	-0.93	-4.84	0.00	0.00	-2.85
2019	-0.84	-0.92	-4.51	0.00	0.00	-1.51
2020	-0.44	-0.92	-4.72	0.00	0.00	-1.28
2021	-0.24	-0.92	-4.45	0.00	0.00	-1.08
2022	-0.25	-0.92	-4.48	0.00	0.00	-1.08
2023	-0.19	-0.92	-4.51	0.00	0.00	-1.02
2024	-0.05	-0.92	-5.77	0.00	0.00	-1.09
2025	0.11	-0.91	-4.80	0.00	0.00	-0.81
COMPOUND GROWTH RATE (PER CENT) -						
2008-2014	-1.28	-4.60	-7.17	0.00	0.00	-3.28
2015-2020	-1.80	-0.93	-4.63	0.00	0.00	-2.12
2015-2025	-0.97	-0.92	-4.72	0.00	0.00	-1.57

All data are for the financial year ending in June of the year specified.

TABLE C.4 Total Peak Energy - Essential Energy

	Resi-dential	Control-led Load	Business	Customer Specific	Public Lighting	Total
UNIT	**********	**********	GWH	**********	**********	
2008	9.61	0.00	607.75	284.15	4.39	905.90
2009	11.07	0.00	631.16	282.75	4.88	929.86
2010	14.25	0.00	656.99	272.69	5.15	949.08
2011	15.37	0.00	652.71	291.18	4.21	963.47
2012	19.92	0.00	676.13	311.61	2.87	1010.53
2013	25.09	0.00	704.33	347.81	1.67	1078.90
2014	28.44	0.00	703.96	349.13	2.99	1084.51
2015	31.78	0.00	704.37	350.52	3.05	1089.72
2016	35.10	0.00	716.32	349.75	3.11	1104.27
2017	38.39	0.00	724.25	350.15	3.17	1115.97
2018	42.45	0.00	732.83	349.74	3.23	1128.25
2019	47.28	0.00	743.00	350.71	3.29	1144.28
2020	52.04	0.00	752.81	350.41	3.35	1158.61
2021	56.40	0.00	765.12	351.74	3.42	1176.67
2022	60.16	0.00	777.76	352.85	3.48	1194.24
2023	63.70	0.00	790.61	353.90	3.55	1211.76
2024	67.35	0.00	793.49	349.17	3.61	1213.63
2025	71.10	0.00	804.97	348.95	3.67	1228.69
PERCENTAGE CHANGES						
2009	15.19	0.00	3.85	-0.49	11.16	2.64
2010	28.73	0.00	4.09	-3.56	5.53	2.07
2011	7.86	0.00	-0.65	6.78	-18.25	1.52
2012	29.60	0.00	3.59	7.02	-31.83	4.88
2013	25.95	0.00	4.17	11.62	-41.81	6.77
2014	13.34	0.00	-0.05	0.38	79.03	0.52
2015	11.76	0.00	0.06	0.40	2.03	0.48
2016	10.43	0.00	1.70	-0.22	1.93	1.34
2017	9.39	0.00	1.11	0.11	1.92	1.06
2018	10.58	0.00	1.18	-0.12	1.85	1.10
2019	11.36	0.00	1.39	0.28	1.87	1.42
2020	10.06	0.00	1.32	-0.09	1.94	1.25
2021	8.39	0.00	1.63	0.38	1.94	1.56
2022	6.66	0.00	1.65	0.32	1.90	1.49
2023	5.89	0.00	1.65	0.30	1.89	1.47
2024	5.73	0.00	0.36	-1.34	1.82	0.15
2025	5.57	0.00	1.45	-0.06	1.73	1.24
COMPOUND GROWTH RATE (PER CENT) -						
2008-2014	19.82	0.00	2.48	3.49	-6.20	3.04
2015-2020	10.36	0.00	1.34	-0.01	1.90	1.23
2015-2025	8.39	0.00	1.34	-0.04	1.88	1.21

All data are for the financial year ending in June of the year specified.

TABLE C.5 Total Off Peak Energy - Essential Energy

	Resi-dential	Control-led Load	Business	Customer Specific	Public Lighting	Total
UNIT	**********	**********	GWH	**********	**********	
2008	30.81	0.00	1671.32	1075.18	38.34	2815.65
2009	34.51	0.00	1735.20	1073.30	41.45	2884.46
2010	42.66	0.00	1818.95	1036.68	44.56	2942.85
2011	46.09	0.00	1795.96	1106.76	38.31	2987.12
2012	58.77	0.00	1910.84	1201.45	25.79	3196.85
2013	72.24	0.00	2016.25	1334.40	14.92	3437.81
2014	82.87	0.00	1999.46	1373.02	26.79	3482.14
2015	92.06	0.00	2006.30	1355.16	27.29	3480.82
2016	101.97	0.00	2038.21	1365.20	27.84	3533.22
2017	111.38	0.00	2062.75	1360.67	28.36	3563.17
2018	123.26	0.00	2087.07	1362.10	28.90	3601.33
2019	137.21	0.00	2117.01	1364.37	29.43	3648.02
2020	151.05	0.00	2145.38	1363.96	30.00	3690.39
2021	163.71	0.00	2181.17	1368.74	30.58	3744.21
2022	174.62	0.00	2217.74	1373.27	31.16	3796.79
2023	184.89	0.00	2254.99	1377.28	31.75	3848.91
2024	195.50	0.00	2263.76	1358.90	32.33	3850.49
2025	206.38	0.00	2297.06	1358.01	32.89	3894.34
PERCENTAGE CHANGES						
2009	12.01	0.00	3.82	-0.17	8.11	2.44
2010	23.62	0.00	4.83	-3.41	7.50	2.02
2011	8.04	0.00	-1.26	6.76	-14.03	1.50
2012	27.51	0.00	6.40	8.56	-32.68	7.02
2013	22.92	0.00	5.52	11.07	-42.15	7.54
2014	14.72	0.00	-0.83	2.89	79.55	1.29
2015	11.08	0.00	0.34	-1.30	1.88	-0.04
2016	10.77	0.00	1.59	0.74	2.01	1.51
2017	9.23	0.00	1.20	-0.33	1.88	0.85
2018	10.66	0.00	1.18	0.11	1.87	1.07
2019	11.32	0.00	1.43	0.17	1.86	1.30
2020	10.09	0.00	1.34	-0.03	1.94	1.16
2021	8.38	0.00	1.67	0.35	1.93	1.46
2022	6.66	0.00	1.68	0.33	1.90	1.40
2023	5.89	0.00	1.68	0.29	1.89	1.37
2024	5.73	0.00	0.39	-1.33	1.82	0.04
2025	5.57	0.00	1.47	-0.07	1.73	1.14
COMPOUND GROWTH RATE (PER CENT) -						
2008-2014	17.93	0.00	3.03	4.16	-5.80	3.60
2015-2020	10.41	0.00	1.35	0.13	1.91	1.18
2015-2025	8.41	0.00	1.36	0.02	1.88	1.13

All data are for the financial year ending in June of the year specified.

TABLE C.6 Total Shoulder Energy - Essential Energy

	Resi-dential	Control-led Load	Business	Customer Specific	Public Lighting	Total
UNIT	**********	**********	GWH	**********	**********	
2008	17.09	0.00	1297.66	567.91	5.85	1888.51
2009	19.21	0.00	1357.69	568.08	6.30	1951.28
2010	24.15	0.00	1428.01	570.07	7.17	2029.40
2011	25.28	0.00	1422.40	591.52	5.72	2044.92
2012	31.23	0.00	1467.66	628.60	3.81	2131.30
2013	38.50	0.00	1508.39	703.56	2.20	2252.65
2014	44.10	0.00	1516.24	708.46	3.95	2272.76
2015	49.03	0.00	1513.54	712.33	4.03	2278.92
2016	54.29	0.00	1540.94	710.20	4.11	2309.54
2017	59.31	0.00	1556.73	711.28	4.18	2331.51
2018	65.62	0.00	1575.43	710.31	4.26	2355.63
2019	73.06	0.00	1596.85	712.35	4.34	2386.60
2020	80.42	0.00	1617.89	711.71	4.43	2414.45
2021	87.16	0.00	1644.14	714.42	4.51	2450.24
2022	92.97	0.00	1671.23	716.68	4.60	2485.47
2023	98.44	0.00	1698.76	718.82	4.68	2520.71
2024	104.09	0.00	1704.93	709.21	4.77	2522.99
2025	109.88	0.00	1729.56	708.75	4.85	2553.05
PERCENTAGE CHANGES						
2009	12.40	0.00	4.63	0.03	7.69	3.32
2010	25.72	0.00	5.18	0.35	13.81	4.00
2011	4.68	0.00	-0.39	3.76	-20.22	0.76
2012	23.54	0.00	3.18	6.27	-33.39	4.22
2013	23.28	0.00	2.78	11.92	-42.26	5.69
2014	14.55	0.00	0.52	0.70	79.72	0.89
2015	11.17	0.00	-0.18	0.55	1.83	0.27
2016	10.73	0.00	1.81	-0.30	2.03	1.34
2017	9.25	0.00	1.02	0.15	1.87	0.95
2018	10.65	0.00	1.20	-0.14	1.88	1.03
2019	11.32	0.00	1.36	0.29	1.85	1.31
2020	10.08	0.00	1.32	-0.09	1.94	1.17
2021	8.39	0.00	1.62	0.38	1.93	1.48
2022	6.66	0.00	1.65	0.32	1.90	1.44
2023	5.89	0.00	1.65	0.30	1.89	1.42
2024	5.73	0.00	0.36	-1.34	1.82	0.09
2025	5.57	0.00	1.45	-0.06	1.73	1.19
COMPOUND GROWTH RATE (PER CENT) -						
2008-2014	17.12	0.00	2.63	3.75	-6.32	3.13
2015-2020	10.40	0.00	1.34	-0.02	1.92	1.16
2015-2025	8.40	0.00	1.34	-0.05	1.88	1.14

All data are for the financial year ending in June of the year specified.

TABLE C.7 Total Energy - Essential Energy

	Residential		Controlled Load		Low Voltage(Merged tariffs)			
	BLNN2AU	BLNT3AU	BLNC1AU	BLNC2AU	LV 1 Rate	LV TOU > 100mwh	LV TOU average	LV TOU < 100mwh
UNIT	**********	**********	GWH	**********	**********	**********	**********	**********
2008	3406.95	57.51	1086.32	351.43	2064.75	351.21	19.64	503.48
2009	3656.99	64.79	1066.91	342.57	1896.79	352.58	37.08	548.37
2010	3650.51	81.07	968.86	309.37	1764.96	356.16	42.18	483.65
2011	3495.77	86.74	949.11	293.69	1547.98	342.91	68.30	433.06
2012	3339.77	109.93	931.35	283.59	1440.38	340.64	107.90	475.46
2013	3283.07	135.83	876.80	266.10	1359.66	357.24	148.77	552.70
2014	3152.90	155.42	833.17	250.40	1259.50	341.40	107.75	542.07
2015	3082.67	172.87	827.34	246.14	1253.89	339.88	111.40	534.47
2016	3027.46	191.37	821.55	241.96	1200.75	332.12	113.64	537.93
2017	2938.23	209.09	815.80	237.85	1145.06	323.18	115.45	539.15
2018	2851.51	231.34	810.09	233.80	1090.81	314.15	117.16	539.81
2019	2827.44	257.55	804.41	229.83	1041.08	305.95	119.12	541.49
2020	2815.13	283.51	798.78	225.92	992.18	297.52	120.94	542.38
2021	2808.47	307.29	793.19	222.08	947.86	290.04	123.08	544.59
2022	2801.33	327.75	787.64	218.30	905.49	282.73	125.26	546.79
2023	2796.00	347.05	782.13	214.59	864.60	275.47	127.41	548.74
2024	2794.67	366.95	776.65	210.95	814.72	264.87	127.91	543.46
2025	2797.77	387.37	771.21	207.36	775.58	257.30	129.71	543.75
PERCENTAGE CHANGES								
2009	7.34	12.66	-1.79	-2.52	-8.13	0.39	88.80	8.92
2010	-0.18	25.13	-9.19	-9.69	-6.95	1.02	13.75	-11.80
2011	-4.24	6.99	-2.04	-5.07	-12.29	-3.72	61.93	-10.46
2012	-4.46	26.74	-1.87	-3.44	-6.95	-0.66	57.98	9.79
2013	-1.70	23.56	-5.86	-6.17	-5.60	4.87	37.88	16.25
2014	-3.96	14.42	-4.98	-5.90	-7.37	-4.43	-27.57	-1.92
2015	-2.23	11.23	-0.70	-1.70	-0.45	-0.45	3.38	-1.40
2016	-1.79	10.70	-0.70	-1.70	-4.24	-2.28	2.02	0.65
2017	-2.95	9.26	-0.70	-1.70	-4.64	-2.69	1.59	0.23
2018	-2.95	10.64	-0.70	-1.70	-4.74	-2.79	1.48	0.12
2019	-0.84	11.33	-0.70	-1.70	-4.56	-2.61	1.67	0.31
2020	-0.44	10.08	-0.70	-1.70	-4.70	-2.75	1.53	0.17
2021	-0.24	8.39	-0.70	-1.70	-4.47	-2.52	1.77	0.41
2022	-0.25	6.66	-0.70	-1.70	-4.47	-2.52	1.77	0.40
2023	-0.19	5.89	-0.70	-1.70	-4.52	-2.57	1.72	0.36
2024	-0.05	5.73	-0.70	-1.70	-5.77	-3.85	0.39	-0.96
2025	0.11	5.57	-0.70	-1.70	-4.80	-2.86	1.41	0.05
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	-1.28	18.02	-4.33	-5.49	-7.91	-0.47	32.80	1.24
2015-2020	-1.80	10.40	-0.70	-1.70	-4.57	-2.63	1.66	0.29
2015-2025	-0.97	8.40	-0.70	-1.70	-4.69	-2.75	1.53	0.17

All data are for the financial year ending in June of the year specified.

TABLE C.7 Total Energy - Essential Energy (continued)

	Low Voltage	High Voltage			Customer Specific	LV Public Lighting	LV Unmetered	Total
	LV TOU 3 rate	HV 1 Rate	HV TOU	HV TUO average				
UNIT	**********	**********		GWH	**********	**********		
2008	1431.28	448.36	250.34	3.28	1927.23	0.00	50.55	11952.33
2009	1550.98	369.77	342.12	8.55	1924.14	2.03	52.63	12216.30
2010	1803.22	310.95	390.22	33.80	1879.44	2.02	56.88	12133.29
2011	1831.80	208.59	501.41	50.78	1989.44	1.17	48.24	11848.99
2012	1915.61	197.81	599.89	52.36	2141.64	0.00	32.47	11968.80
2013	1973.74	197.54	626.86	64.02	2385.78	0.00	33.05	12261.16
2014	2018.50	163.14	678.48	66.05	2430.37	0.00	33.74	12032.89
2015	2038.50	155.56	685.76	66.13	2417.89	0.00	34.38	11966.87
2016	2101.50	151.35	707.23	67.56	2424.97	0.00	35.07	11954.44
2017	2157.41	146.29	724.63	68.57	2421.96	0.00	35.73	11878.40
2018	2212.48	141.56	743.27	69.67	2421.99	0.00	36.40	11814.04
2019	2273.21	137.25	763.87	70.92	2427.27	0.00	37.08	11836.46
2020	2332.22	132.93	784.20	72.12	2425.93	0.00	37.79	11861.56
2021	2398.56	129.22	808.09	73.62	2434.74	0.00	38.53	11919.37
2022	2466.72	125.44	831.46	75.03	2442.63	0.00	39.26	11975.84
2023	2535.56	121.73	855.35	76.46	2449.85	0.00	40.00	12034.93
2024	2572.15	116.60	868.39	76.89	2417.12	0.00	40.73	11992.06
2025	2635.98	112.88	891.14	78.16	2415.56	0.00	41.43	12045.20
PERCENTAGE CHANGES								
2009	8.36	-17.53	36.66	160.67	-0.16	0.00	4.11	2.21
2010	16.26	-15.91	14.06	295.32	-2.32	-0.49	8.08	-0.68
2011	1.58	-32.92	28.49	50.24	5.85	-42.08	-15.19	-2.34
2012	4.58	-5.17	19.64	3.11	7.65	-100.00	-32.69	1.01
2013	3.03	-0.14	4.50	22.27	11.40	0.00	1.79	2.44
2014	2.27	-17.41	8.23	3.17	1.87	0.00	2.08	-1.86
2015	0.99	-4.65	1.07	0.12	-0.51	0.00	1.90	-0.55
2016	3.09	-2.71	3.13	2.16	0.29	0.00	2.00	-0.10
2017	2.66	-3.34	2.46	1.49	-0.12	0.00	1.89	-0.64
2018	2.55	-3.23	2.57	1.60	0.00	0.00	1.87	-0.54
2019	2.74	-3.05	2.77	1.80	0.22	0.00	1.86	0.19
2020	2.60	-3.15	2.66	1.69	-0.06	0.00	1.94	0.21
2021	2.84	-2.79	3.05	2.07	0.36	0.00	1.93	0.49
2022	2.84	-2.93	2.89	1.92	0.32	0.00	1.90	0.47
2023	2.79	-2.95	2.87	1.90	0.30	0.00	1.89	0.49
2024	1.44	-4.22	1.53	0.57	-1.34	0.00	1.82	-0.36
2025	2.48	-3.19	2.62	1.65	-0.06	0.00	1.73	0.44
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	5.90	-15.51	18.08	64.94	3.94	0.00	-6.52	0.11
2015-2020	2.73	-3.10	2.72	1.75	0.07	0.00	1.91	-0.18
2015-2025	2.60	-3.16	2.65	1.69	-0.01	0.00	1.88	0.07

All data are for the financial year ending in June of the year specified.

TABLE C.8 Total Customers - Essential Energy

	Residential		Controlled Load		Low Voltage(Merged tariffs)			
	BLNN2AU	BLNT3AU	BLNC1AU	BLNC2AU	LV 1 Rate	LV TOU > 100mwh	LV TOU average	LV TOU < 100mwh
UNIT	**********	**********	number	**********	**********	**********	**********	**********
2008	687632.00	3758.00	377790.00	125065.00	83845.00	1317.00	20.00	8405.00
2009	692346.00	4245.00	376652.00	125415.00	83397.00	1302.00	23.00	8809.00
2010	697236.00	5349.00	375176.00	125229.00	82323.00	1384.00	24.00	8803.00
2011	700853.00	7671.00	374569.00	123168.00	81904.00	1424.00	22.00	9131.00
2012	698383.00	10367.00	372802.00	120391.00	80320.00	1404.00	23.00	9489.00
2013	702134.00	13171.00	374461.00	118361.00	80942.00	1432.00	23.00	10006.00
2014	707638.00	17137.00	374776.00	117428.00	81607.00	1521.00	22.00	10620.00
2015	713254.38	19544.01	372152.56	115431.73	82419.60	1554.37	20.09	11122.24
2016	719163.69	22076.58	369547.50	113469.39	82571.90	1583.60	20.86	11491.16
2017	725317.50	24713.93	366960.66	111540.41	82413.92	1610.07	21.62	11848.68
2018	732956.56	27987.81	364391.94	109644.23	82178.39	1636.14	22.39	12211.44
2019	741324.69	31574.15	361841.19	107780.27	82081.70	1664.17	23.22	12597.10
2020	749575.38	35110.15	359308.31	105948.01	81878.45	1691.48	24.06	12986.17
2021	757128.00	38347.00	356793.16	104146.89	81853.61	1721.30	24.96	13403.35
2022	763748.63	41184.42	354295.59	102376.39	81826.58	1751.62	25.90	13834.12
2023	769986.00	43857.57	351815.53	100635.99	81763.32	1782.06	26.87	14275.68
2024	776320.88	46572.52	349352.81	98925.18	80735.40	1801.25	27.70	14637.14
2025	782680.19	49297.94	346907.34	97243.45	80454.38	1829.83	28.70	15082.79
PERCENTAGE CHANGES								
2009	0.69	12.96	-0.30	0.28	-0.53	-1.14	15.00	4.81
2010	0.71	26.01	-0.39	-0.15	-1.29	6.30	4.35	-0.07
2011	0.52	43.41	-0.16	-1.65	-0.51	2.89	-8.33	3.73
2012	-0.35	35.15	-0.47	-2.25	-1.93	-1.40	4.55	3.92
2013	0.54	27.05	0.45	-1.69	0.77	1.99	0.00	5.45
2014	0.78	30.11	0.08	-0.79	0.82	6.22	-4.35	6.14
2015	0.79	14.05	-0.70	-1.70	1.00	2.19	-8.68	4.73
2016	0.83	12.96	-0.70	-1.70	0.18	1.88	3.82	3.32
2017	0.86	11.95	-0.70	-1.70	-0.19	1.67	3.63	3.11
2018	1.05	13.25	-0.70	-1.70	-0.29	1.62	3.59	3.06
2019	1.14	12.81	-0.70	-1.70	-0.12	1.71	3.69	3.16
2020	1.11	11.20	-0.70	-1.70	-0.25	1.64	3.63	3.09
2021	1.01	9.22	-0.70	-1.70	-0.03	1.76	3.75	3.21
2022	0.87	7.40	-0.70	-1.70	-0.03	1.76	3.76	3.21
2023	0.82	6.49	-0.70	-1.70	-0.08	1.74	3.74	3.19
2024	0.82	6.19	-0.70	-1.70	-1.26	1.08	3.11	2.53
2025	0.82	5.85	-0.70	-1.70	-0.35	1.59	3.61	3.04
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	0.48	28.77	-0.13	-1.04	-0.45	2.43	1.60	3.98
2015-2020	1.00	12.43	-0.70	-1.70	-0.13	1.71	3.67	3.15
2015-2025	0.93	9.69	-0.70	-1.70	-0.24	1.64	3.63	3.09

All data are for the financial year ending in June of the year specified.

TABLE C.8 Total Customers - Essential Energy (continued)

	Low Voltage	High Voltage			Customer Specific	LV Public Lighting	LV Unmetered	Total
	LV TOU 3 rate	HV 1 Rate	HV TOU	HV TUO average				
UNIT	**********	**********		number	**********	**********	**********	**********
2008	2100.00	55.00	54.00	2.00	31.00	4.00	81.001290159.00	
2009	2311.00	51.00	63.00	2.00	29.00	4.00	81.001294730.00	
2010	3009.00	46.00	69.00	4.00	30.00	4.00	81.001298767.00	
2011	3148.00	37.00	100.00	5.00	31.00	4.00	81.001302148.00	
2012	3230.00	35.00	100.00	4.00	31.00	4.00	81.001296664.00	
2013	3322.00	35.00	108.00	6.00	34.00	4.00	81.001304120.00	
2014	3542.00	25.00	122.00	7.00	36.00	4.00	81.001314566.00	
2015	4148.83	28.56	115.51	6.12	36.00	4.00	81.001319919.00	
2016	4323.06	27.95	116.37	6.13	36.00	4.00	81.001324519.13	
2017	4496.91	27.26	116.86	6.13	36.00	4.00	81.001329195.00	
2018	4676.26	26.60	117.42	6.13	36.00	4.00	81.001335976.25	
2019	4867.66	25.99	118.09	6.14	36.00	4.00	81.001344025.25	
2020	5064.31	25.37	118.70	6.14	36.00	4.00	81.001351857.50	
2021	5275.52	24.82	119.54	6.15	36.00	4.00	81.001358965.38	
2022	5496.27	24.26	120.29	6.16	36.00	4.00	81.001364811.38	
2023	5725.75	23.71	121.04	6.17	36.00	4.00	81.001370140.75	
2024	5929.13	23.02	120.99	6.14	36.00	4.00	81.001374573.13	
2025	6169.51	22.47	121.59	6.14	36.00	4.00	81.001379965.38	
PERCENTAGE CHANGES								
2009	10.05	-7.27	16.67	0.00	-6.45	0.00	0.00	0.35
2010	30.20	-9.80	9.52	100.00	3.45	0.00	0.00	0.31
2011	4.62	-19.57	44.93	25.00	3.33	0.00	0.00	0.26
2012	2.60	-5.41	0.00	-20.00	0.00	0.00	0.00	-0.42
2013	2.85	0.00	8.00	50.00	9.68	0.00	0.00	0.58
2014	6.62	-28.57	12.96	16.67	5.88	0.00	0.00	0.80
2015	17.13	14.25	-5.32	-12.61	0.00	0.00	0.00	0.41
2016	4.20	-2.15	0.75	0.27	0.00	0.00	0.00	0.35
2017	4.02	-2.46	0.42	-0.06	0.00	0.00	0.00	0.35
2018	3.99	-2.41	0.47	0.00	0.00	0.00	0.00	0.51
2019	4.09	-2.32	0.57	0.10	0.00	0.00	0.00	0.60
2020	4.04	-2.37	0.52	0.04	0.00	0.00	0.00	0.58
2021	4.17	-2.19	0.71	0.23	0.00	0.00	0.00	0.53
2022	4.18	-2.26	0.63	0.15	0.00	0.00	0.00	0.43
2023	4.18	-2.27	0.62	0.15	0.00	0.00	0.00	0.39
2024	3.55	-2.91	-0.04	-0.51	0.00	0.00	0.00	0.32
2025	4.05	-2.39	0.50	0.02	0.00	0.00	0.00	0.39
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	9.10	-12.31	14.55	23.22	2.52	0.00	0.00	0.31
2015-2020	4.07	-2.34	0.55	0.07	0.00	0.00	0.00	0.48
2015-2025	4.05	-2.37	0.51	0.04	0.00	0.00	0.00	0.45

All data are for the financial year ending in June of the year specified.

TABLE C.9 Total Anytime Demand - Essential Energy

	Residential		Controlled Load		Low Voltage(Merged tariffs)			
	BLNN2AU	BLNT3AU	BLNC1AU	BLNC2AU	LV 1 Rate	LV TOU > 100mwh	LV TOU average	LV TOU < 100mwh
UNIT	**********			MW	**********			
2008	0.00	0.00	0.00	0.00	1930.00	0.00	0.00	0.00
2009	0.00	0.00	0.00	0.00	1720.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	1610.00	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00	1440.00	0.00	0.00	0.00
2012	0.00	0.00	0.00	0.00	1220.00	0.00	0.00	0.00
2013	0.00	0.00	0.00	0.00	1050.00	0.00	0.00	0.00
2014	0.00	0.00	0.00	0.00	989.92	0.00	0.00	0.00
2015	0.00	0.00	0.00	0.00	986.53	0.00	0.00	0.00
2016	0.00	0.00	0.00	0.00	954.17	0.00	0.00	0.00
2017	0.00	0.00	0.00	0.00	919.91	0.00	0.00	0.00
2018	0.00	0.00	0.00	0.00	886.17	0.00	0.00	0.00
2019	0.00	0.00	0.00	0.00	854.89	0.00	0.00	0.00
2020	0.00	0.00	0.00	0.00	823.80	0.00	0.00	0.00
2021	0.00	0.00	0.00	0.00	795.32	0.00	0.00	0.00
2022	0.00	0.00	0.00	0.00	767.80	0.00	0.00	0.00
2023	0.00	0.00	0.00	0.00	740.96	0.00	0.00	0.00
2024	0.00	0.00	0.00	0.00	707.82	0.00	0.00	0.00
2025	0.00	0.00	0.00	0.00	681.49	0.00	0.00	0.00
PERCENTAGE CHANGES								
2009	0.00	0.00	0.00	0.00	-10.88	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	-6.40	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00	-10.56	0.00	0.00	0.00
2012	0.00	0.00	0.00	0.00	-15.28	0.00	0.00	0.00
2013	0.00	0.00	0.00	0.00	-13.93	0.00	0.00	0.00
2014	0.00	0.00	0.00	0.00	-5.72	0.00	0.00	0.00
2015	0.00	0.00	0.00	0.00	-0.34	0.00	0.00	0.00
2016	0.00	0.00	0.00	0.00	-3.28	0.00	0.00	0.00
2017	0.00	0.00	0.00	0.00	-3.59	0.00	0.00	0.00
2018	0.00	0.00	0.00	0.00	-3.67	0.00	0.00	0.00
2019	0.00	0.00	0.00	0.00	-3.53	0.00	0.00	0.00
2020	0.00	0.00	0.00	0.00	-3.64	0.00	0.00	0.00
2021	0.00	0.00	0.00	0.00	-3.46	0.00	0.00	0.00
2022	0.00	0.00	0.00	0.00	-3.46	0.00	0.00	0.00
2023	0.00	0.00	0.00	0.00	-3.50	0.00	0.00	0.00
2024	0.00	0.00	0.00	0.00	-4.47	0.00	0.00	0.00
2025	0.00	0.00	0.00	0.00	-3.72	0.00	0.00	0.00
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	0.00	0.00	0.00	0.00	-10.53	0.00	0.00	0.00
2015-2020	0.00	0.00	0.00	0.00	-3.54	0.00	0.00	0.00
2015-2025	0.00	0.00	0.00	0.00	-3.63	0.00	0.00	0.00

All data are for the financial year ending in June of the year specified.

TABLE C.9 Total Anytime Demand - Essential Energy (continued)

	Low Voltage	High Voltage			Customer Specific	LV Public Lighting	LV Unmetered	Total
	LV TOU 3 rate	HV 1 Rate	HV TOU	HV TUO average				
UNIT	**********			MW	**********			
2008	50.00	1180.00	10.00	0.00	2720.00	0.00	0.00	5890.00
2009	40.00	1010.00	10.00	0.00	2690.00	0.00	0.00	5470.00
2010	40.00	870.00	0.00	0.00	3820.00	0.00	0.00	6340.00
2011	30.00	610.00	0.00	0.00	2740.00	0.00	0.00	4820.00
2012	30.00	570.00	0.00	0.00	2970.00	0.00	0.00	4790.00
2013	20.00	580.00	0.00	0.00	3030.00	0.00	0.00	4680.00
2014	20.32	501.51	0.00	0.00	3042.97	0.00	0.00	4554.71
2015	20.46	483.69	0.00	0.00	3027.60	0.00	0.00	4518.27
2016	20.90	473.71	0.00	0.00	3029.97	0.00	0.00	4478.75
2017	21.29	461.64	0.00	0.00	3027.31	0.00	0.00	4430.14
2018	21.66	450.25	0.00	0.00	3027.34	0.00	0.00	4385.41
2019	22.08	439.79	0.00	0.00	3032.01	0.00	0.00	4348.77
2020	22.48	429.22	0.00	0.00	3030.82	0.00	0.00	4306.31
2021	22.92	420.10	0.00	0.00	3038.61	0.00	0.00	4276.95
2022	23.38	410.70	0.00	0.00	3045.58	0.00	0.00	4247.46
2023	23.83	401.46	0.00	0.00	3051.94	0.00	0.00	4218.19
2024	24.07	388.51	0.00	0.00	3023.03	0.00	0.00	4143.44
2025	24.49	379.06	0.00	0.00	3021.65	0.00	0.00	4106.69
PERCENTAGE CHANGES								
2009	-20.00	-14.41	0.00	0.00	-1.10	0.00	0.00	-7.13
2010	0.00	-13.86	-100.00	0.00	42.01	0.00	0.00	15.90
2011	-25.00	-29.89	0.00	0.00	-28.27	0.00	0.00	-23.97
2012	0.00	-6.56	0.00	0.00	8.39	0.00	0.00	-0.62
2013	-33.33	1.75	0.00	0.00	2.02	0.00	0.00	-2.30
2014	1.58	-13.53	0.00	0.00	0.43	0.00	0.00	-2.68
2015	0.69	-3.55	0.00	0.00	-0.51	0.00	0.00	-0.80
2016	2.15	-2.06	0.00	0.00	0.08	0.00	0.00	-0.87
2017	1.86	-2.55	0.00	0.00	-0.09	0.00	0.00	-1.09
2018	1.78	-2.47	0.00	0.00	0.00	0.00	0.00	-1.01
2019	1.91	-2.32	0.00	0.00	0.15	0.00	0.00	-0.84
2020	1.81	-2.40	0.00	0.00	-0.04	0.00	0.00	-0.98
2021	1.98	-2.13	0.00	0.00	0.26	0.00	0.00	-0.68
2022	1.98	-2.24	0.00	0.00	0.23	0.00	0.00	-0.69
2023	1.95	-2.25	0.00	0.00	0.21	0.00	0.00	-0.69
2024	1.01	-3.22	0.00	0.00	-0.95	0.00	0.00	-1.77
2025	1.73	-2.43	0.00	0.00	-0.05	0.00	0.00	-0.89
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	-13.94	-13.29	0.00	0.00	1.89	0.00	0.00	-4.19
2015-2020	1.90	-2.36	0.00	0.00	0.02	0.00	0.00	-0.96
2015-2025	1.82	-2.41	0.00	0.00	-0.02	0.00	0.00	-0.95

All data are for the financial year ending in June of the year specified.

TABLE C.10 Total Peak Demand - Essential Energy

	Residential		Controlled Load		Low Voltage(Merged tariffs)			
	BLNN2AU	BLNT3AU	BLNC1AU	BLNC2AU	LV 1 Rate	LV TOU > 100mwh	LV TOU average	LV TOU < 100mwh
UNIT	**********			MW	**********			
2008	0.00	0.00	0.00	0.00	0.00	0.00	60.00	0.00
2009	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.00	150.00	0.00
2012	0.00	0.00	0.00	0.00	0.00	0.00	200.00	0.00
2013	0.00	0.00	0.00	0.00	0.00	0.00	260.00	0.00
2014	0.00	0.00	0.00	0.00	0.00	0.00	205.84	0.00
2015	0.00	0.00	0.00	0.00	0.00	0.00	210.70	0.00
2016	0.00	0.00	0.00	0.00	0.00	0.00	213.89	0.00
2017	0.00	0.00	0.00	0.00	0.00	0.00	216.32	0.00
2018	0.00	0.00	0.00	0.00	0.00	0.00	218.68	0.00
2019	0.00	0.00	0.00	0.00	0.00	0.00	221.33	0.00
2020	0.00	0.00	0.00	0.00	0.00	0.00	223.80	0.00
2021	0.00	0.00	0.00	0.00	0.00	0.00	226.69	0.00
2022	0.00	0.00	0.00	0.00	0.00	0.00	229.61	0.00
2023	0.00	0.00	0.00	0.00	0.00	0.00	232.48	0.00
2024	0.00	0.00	0.00	0.00	0.00	0.00	233.14	0.00
2025	0.00	0.00	0.00	0.00	0.00	0.00	235.54	0.00
PERCENTAGE CHANGES								
2009	0.00	0.00	0.00	0.00	0.00	0.00	66.67	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00
2012	0.00	0.00	0.00	0.00	0.00	0.00	33.33	0.00
2013	0.00	0.00	0.00	0.00	0.00	0.00	30.00	0.00
2014	0.00	0.00	0.00	0.00	0.00	0.00	-20.83	0.00
2015	0.00	0.00	0.00	0.00	0.00	0.00	2.36	0.00
2016	0.00	0.00	0.00	0.00	0.00	0.00	1.52	0.00
2017	0.00	0.00	0.00	0.00	0.00	0.00	1.13	0.00
2018	0.00	0.00	0.00	0.00	0.00	0.00	1.09	0.00
2019	0.00	0.00	0.00	0.00	0.00	0.00	1.21	0.00
2020	0.00	0.00	0.00	0.00	0.00	0.00	1.12	0.00
2021	0.00	0.00	0.00	0.00	0.00	0.00	1.29	0.00
2022	0.00	0.00	0.00	0.00	0.00	0.00	1.29	0.00
2023	0.00	0.00	0.00	0.00	0.00	0.00	1.25	0.00
2024	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00
2025	0.00	0.00	0.00	0.00	0.00	0.00	1.03	0.00
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	0.00	0.00	0.00	0.00	0.00	0.00	22.81	0.00
2015-2020	0.00	0.00	0.00	0.00	0.00	0.00	1.21	0.00
2015-2025	0.00	0.00	0.00	0.00	0.00	0.00	1.12	0.00

All data are for the financial year ending in June of the year specified.

TABLE C.10 Total Peak Demand - Essential Energy (continued)

	Low Voltage	High Voltage			Customer Specific	LV Public Lighting	LV Unmetered	Total
	LV TOU 3 rate	HV 1 Rate	HV TOU	HV TUO average				
UNIT	**********	**********		MW	**********	**********	**********	**********
2008	3880.00	0.00	630.00	10.00	600.00	0.00	0.00	5180.00
2009	4260.00	0.00	850.00	20.00	760.00	0.00	0.00	5990.00
2010	5060.00	0.00	950.00	70.00	750.00	0.00	0.00	6930.00
2011	5230.00	0.00	1220.00	110.00	900.00	0.00	0.00	7610.00
2012	5420.00	0.00	1450.00	110.00	970.00	0.00	0.00	8150.00
2013	5550.00	0.00	1500.00	130.00	1060.00	0.00	0.00	8500.00
2014	5650.65	0.00	1584.16	135.00	1525.72	0.00	0.00	9101.36
2015	5683.31	0.00	1594.27	134.20	1500.33	0.00	0.00	9122.82
2016	5809.00	0.00	1628.19	136.89	1515.24	0.00	0.00	9303.21
2017	5915.08	0.00	1654.59	138.23	1508.58	0.00	0.00	9432.81
2018	6021.23	0.00	1683.16	140.05	1511.30	0.00	0.00	9574.43
2019	6136.01	0.00	1714.19	141.93	1512.13	0.00	0.00	9725.60
2020	6247.31	0.00	1744.67	143.81	1512.25	0.00	0.00	9871.85
2021	6371.07	0.00	1780.08	146.09	1515.55	0.00	0.00	10039.47
2022	6497.32	0.00	1814.42	148.25	1518.97	0.00	0.00	10208.56
2023	6623.69	0.00	1849.17	150.41	1521.85	0.00	0.00	10377.61
2024	6690.48	0.00	1868.02	151.07	1508.41	0.00	0.00	10451.12
2025	6806.26	0.00	1900.66	152.99	1507.74	0.00	0.00	10603.18
PERCENTAGE CHANGES								
2009	9.79	0.00	34.92	100.00	26.67	0.00	0.00	15.64
2010	18.78	0.00	11.76	250.00	-1.32	0.00	0.00	15.69
2011	3.36	0.00	28.42	57.14	20.00	0.00	0.00	9.81
2012	3.63	0.00	18.85	0.00	7.78	0.00	0.00	7.10
2013	2.40	0.00	3.45	18.18	9.28	0.00	0.00	4.29
2014	1.81	0.00	5.61	3.84	43.94	0.00	0.00	7.07
2015	0.58	0.00	0.64	-0.59	-1.66	0.00	0.00	0.24
2016	2.21	0.00	2.13	2.00	0.99	0.00	0.00	1.98
2017	1.83	0.00	1.62	0.98	-0.44	0.00	0.00	1.39
2018	1.79	0.00	1.73	1.32	0.18	0.00	0.00	1.50
2019	1.91	0.00	1.84	1.34	0.05	0.00	0.00	1.58
2020	1.81	0.00	1.78	1.32	0.01	0.00	0.00	1.50
2021	1.98	0.00	2.03	1.58	0.22	0.00	0.00	1.70
2022	1.98	0.00	1.93	1.48	0.23	0.00	0.00	1.68
2023	1.95	0.00	1.92	1.46	0.19	0.00	0.00	1.66
2024	1.01	0.00	1.02	0.44	-0.88	0.00	0.00	0.71
2025	1.73	0.00	1.75	1.27	-0.04	0.00	0.00	1.46
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	6.47	0.00	16.61	54.31	16.83	0.00	0.00	9.85
2015-2020	1.91	0.00	1.82	1.39	0.16	0.00	0.00	1.59
2015-2025	1.82	0.00	1.77	1.32	0.05	0.00	0.00	1.52

All data are for the financial year ending in June of the year specified.

TABLE C.11 Total Off Peak Demand - Essential Energy

	Residential		Controlled Load		Low Voltage(Merged tariffs)			
	BLNN2AU	BLNT3AU	BLNC1AU	BLNC2AU	LV 1 Rate	LV TOU > 100mwh	LV TOU average	LV TOU < 100mwh
UNIT	**********			MW	**********			
2008	0.00	0.00	0.00	0.00	0.00	0.00	40.00	0.00
2009	0.00	0.00	0.00	0.00	0.00	0.00	70.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	80.00	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.00	130.00	0.00
2012	0.00	0.00	0.00	0.00	0.00	0.00	190.00	0.00
2013	0.00	0.00	0.00	0.00	0.00	0.00	260.00	0.00
2014	0.00	0.00	0.00	0.00	0.00	0.00	204.50	0.00
2015	0.00	0.00	0.00	0.00	0.00	0.00	210.02	0.00
2016	0.00	0.00	0.00	0.00	0.00	0.00	212.85	0.00
2017	0.00	0.00	0.00	0.00	0.00	0.00	215.44	0.00
2018	0.00	0.00	0.00	0.00	0.00	0.00	217.71	0.00
2019	0.00	0.00	0.00	0.00	0.00	0.00	220.39	0.00
2020	0.00	0.00	0.00	0.00	0.00	0.00	222.83	0.00
2021	0.00	0.00	0.00	0.00	0.00	0.00	225.71	0.00
2022	0.00	0.00	0.00	0.00	0.00	0.00	228.62	0.00
2023	0.00	0.00	0.00	0.00	0.00	0.00	231.48	0.00
2024	0.00	0.00	0.00	0.00	0.00	0.00	232.13	0.00
2025	0.00	0.00	0.00	0.00	0.00	0.00	234.52	0.00
PERCENTAGE CHANGES								
2009	0.00	0.00	0.00	0.00	0.00	0.00	75.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	14.29	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.00	62.50	0.00
2012	0.00	0.00	0.00	0.00	0.00	0.00	46.15	0.00
2013	0.00	0.00	0.00	0.00	0.00	0.00	36.84	0.00
2014	0.00	0.00	0.00	0.00	0.00	0.00	-21.34	0.00
2015	0.00	0.00	0.00	0.00	0.00	0.00	2.70	0.00
2016	0.00	0.00	0.00	0.00	0.00	0.00	1.35	0.00
2017	0.00	0.00	0.00	0.00	0.00	0.00	1.22	0.00
2018	0.00	0.00	0.00	0.00	0.00	0.00	1.05	0.00
2019	0.00	0.00	0.00	0.00	0.00	0.00	1.23	0.00
2020	0.00	0.00	0.00	0.00	0.00	0.00	1.10	0.00
2021	0.00	0.00	0.00	0.00	0.00	0.00	1.29	0.00
2022	0.00	0.00	0.00	0.00	0.00	0.00	1.29	0.00
2023	0.00	0.00	0.00	0.00	0.00	0.00	1.25	0.00
2024	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00
2025	0.00	0.00	0.00	0.00	0.00	0.00	1.03	0.00
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	0.00	0.00	0.00	0.00	0.00	0.00	31.25	0.00
2015-2020	0.00	0.00	0.00	0.00	0.00	0.00	1.19	0.00
2015-2025	0.00	0.00	0.00	0.00	0.00	0.00	1.11	0.00

All data are for the financial year ending in June of the year specified.

TABLE C.11 Total Off Peak Demand - Essential Energy (continued)

	Low Voltage	High Voltage			Customer Specific	LV Public Lighting	LV Unmetered	Total
	LV TOU 3 rate	HV 1 Rate	HV TOU	HV TUO average				
UNIT	**********	**********		MW	**********	**********	**********	**********
2008	3750.00	0.00	640.00	10.00	630.00	0.00	0.00	5070.00
2009	4120.00	0.00	870.00	20.00	740.00	0.00	0.00	5820.00
2010	4930.00	0.00	990.00	60.00	740.00	0.00	0.00	6800.00
2011	5050.00	0.00	1230.00	90.00	920.00	0.00	0.00	7420.00
2012	5260.00	0.00	1440.00	90.00	960.00	0.00	0.00	7940.00
2013	5410.00	0.00	1500.00	120.00	1050.00	0.00	0.00	8340.00
2014	5484.36	0.00	1581.59	121.22	1198.62	0.00	0.00	8590.29
2015	5527.99	0.00	1592.98	122.18	1227.17	0.00	0.00	8680.34
2016	5644.15	0.00	1626.20	123.78	1214.97	0.00	0.00	8821.95
2017	5750.32	0.00	1652.91	125.42	1221.79	0.00	0.00	8965.89
2018	5851.93	0.00	1681.28	126.85	1217.91	0.00	0.00	9095.68
2019	5964.29	0.00	1712.36	128.67	1221.62	0.00	0.00	9247.33
2020	6072.07	0.00	1742.76	130.31	1220.20	0.00	0.00	9388.17
2021	6192.56	0.00	1778.16	132.40	1223.61	0.00	0.00	9552.44
2022	6315.17	0.00	1812.45	134.35	1225.98	0.00	0.00	9716.56
2023	6438.06	0.00	1847.17	136.32	1228.49	0.00	0.00	9881.51
2024	6502.94	0.00	1866.00	136.91	1217.58	0.00	0.00	9955.56
2025	6615.49	0.00	1898.60	138.65	1217.09	0.00	0.00	10104.35
PERCENTAGE CHANGES								
2009	9.87	0.00	35.94	100.00	17.46	0.00	0.00	14.79
2010	19.66	0.00	13.79	200.00	0.00	0.00	0.00	16.84
2011	2.43	0.00	24.24	50.00	24.32	0.00	0.00	9.12
2012	4.16	0.00	17.07	0.00	4.35	0.00	0.00	7.01
2013	2.85	0.00	4.17	33.33	9.38	0.00	0.00	5.04
2014	1.37	0.00	5.44	1.02	14.15	0.00	0.00	3.00
2015	0.80	0.00	0.72	0.79	2.38	0.00	0.00	1.05
2016	2.10	0.00	2.09	1.30	-0.99	0.00	0.00	1.63
2017	1.88	0.00	1.64	1.33	0.56	0.00	0.00	1.63
2018	1.77	0.00	1.72	1.15	-0.32	0.00	0.00	1.45
2019	1.92	0.00	1.85	1.43	0.30	0.00	0.00	1.67
2020	1.81	0.00	1.78	1.28	-0.12	0.00	0.00	1.52
2021	1.98	0.00	2.03	1.60	0.28	0.00	0.00	1.75
2022	1.98	0.00	1.93	1.47	0.19	0.00	0.00	1.72
2023	1.95	0.00	1.92	1.46	0.20	0.00	0.00	1.70
2024	1.01	0.00	1.02	0.44	-0.89	0.00	0.00	0.75
2025	1.73	0.00	1.75	1.27	-0.04	0.00	0.00	1.49
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	6.54	0.00	16.27	51.56	11.32	0.00	0.00	9.19
2015-2020	1.90	0.00	1.81	1.30	-0.11	0.00	0.00	1.58
2015-2025	1.81	0.00	1.77	1.27	-0.08	0.00	0.00	1.53

All data are for the financial year ending in June of the year specified.

TABLE C.12 Total Shoulder Demand - Essential Energy

	Residential		Controlled Load		Low Voltage(Merged tariffs)			
	BLNN2AU	BLNT3AU	BLNC1AU	BLNC2AU	LV 1 Rate	LV TOU > 100mwh	LV TOU average	LV TOU < 100mwh
UNIT	**********			MW	**********			
2008	0.00	0.00	0.00	0.00	0.00	0.00	60.00	0.00
2009	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	110.00	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.00	150.00	0.00
2012	0.00	0.00	0.00	0.00	0.00	0.00	200.00	0.00
2013	0.00	0.00	0.00	0.00	0.00	0.00	270.00	0.00
2014	0.00	0.00	0.00	0.00	0.00	0.00	214.89	0.00
2015	0.00	0.00	0.00	0.00	0.00	0.00	219.39	0.00
2016	0.00	0.00	0.00	0.00	0.00	0.00	223.01	0.00
2017	0.00	0.00	0.00	0.00	0.00	0.00	225.39	0.00
2018	0.00	0.00	0.00	0.00	0.00	0.00	227.93	0.00
2019	0.00	0.00	0.00	0.00	0.00	0.00	230.65	0.00
2020	0.00	0.00	0.00	0.00	0.00	0.00	233.24	0.00
2021	0.00	0.00	0.00	0.00	0.00	0.00	236.24	0.00
2022	0.00	0.00	0.00	0.00	0.00	0.00	239.29	0.00
2023	0.00	0.00	0.00	0.00	0.00	0.00	242.29	0.00
2024	0.00	0.00	0.00	0.00	0.00	0.00	242.97	0.00
2025	0.00	0.00	0.00	0.00	0.00	0.00	245.47	0.00
PERCENTAGE CHANGES								
2009	0.00	0.00	0.00	0.00	0.00	0.00	66.67	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	10.00	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.00	36.36	0.00
2012	0.00	0.00	0.00	0.00	0.00	0.00	33.33	0.00
2013	0.00	0.00	0.00	0.00	0.00	0.00	35.00	0.00
2014	0.00	0.00	0.00	0.00	0.00	0.00	-20.41	0.00
2015	0.00	0.00	0.00	0.00	0.00	0.00	2.09	0.00
2016	0.00	0.00	0.00	0.00	0.00	0.00	1.65	0.00
2017	0.00	0.00	0.00	0.00	0.00	0.00	1.07	0.00
2018	0.00	0.00	0.00	0.00	0.00	0.00	1.13	0.00
2019	0.00	0.00	0.00	0.00	0.00	0.00	1.20	0.00
2020	0.00	0.00	0.00	0.00	0.00	0.00	1.12	0.00
2021	0.00	0.00	0.00	0.00	0.00	0.00	1.28	0.00
2022	0.00	0.00	0.00	0.00	0.00	0.00	1.29	0.00
2023	0.00	0.00	0.00	0.00	0.00	0.00	1.25	0.00
2024	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00
2025	0.00	0.00	0.00	0.00	0.00	0.00	1.03	0.00
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	0.00	0.00	0.00	0.00	0.00	0.00	23.69	0.00
2015-2020	0.00	0.00	0.00	0.00	0.00	0.00	1.23	0.00
2015-2025	0.00	0.00	0.00	0.00	0.00	0.00	1.13	0.00

All data are for the financial year ending in June of the year specified.

TABLE C.12 Total Shoulder Demand - Essential Energy (continued)

	Low Voltage	High Voltage			Customer Specific	LV Public Lighting	LV Unmetered	Total
	LV TOU 3 rate	HV 1 Rate	HV TOU	HV TUO average				
UNIT	**********	**********		MW	**********	**********	**********	**********
2008	4080.00	0.00	720.00	10.00	630.00	0.00	0.00	5500.00
2009	4480.00	0.00	950.00	20.00	770.00	0.00	0.00	6320.00
2010	5340.00	0.00	1060.00	70.00	770.00	0.00	0.00	7350.00
2011	5510.00	0.00	1340.00	110.00	950.00	0.00	0.00	8060.00
2012	5730.00	0.00	1570.00	110.00	1000.00	0.00	0.00	8610.00
2013	5880.00	0.00	1630.00	130.00	1100.00	0.00	0.00	9010.00
2014	5982.44	0.00	1717.66	135.12	1582.02	0.00	0.00	9632.14
2015	6019.13	0.00	1730.54	134.27	1570.15	0.00	0.00	9673.47
2016	6151.17	0.00	1766.37	136.99	1578.36	0.00	0.00	9855.90
2017	6264.04	0.00	1795.52	138.31	1575.09	0.00	0.00	9998.34
2018	6376.17	0.00	1826.26	140.14	1576.09	0.00	0.00	10146.59
2019	6497.86	0.00	1860.06	142.02	1577.87	0.00	0.00	10308.46
2020	6615.65	0.00	1893.07	143.90	1577.54	0.00	0.00	10463.41
2021	6746.74	0.00	1931.52	146.18	1581.21	0.00	0.00	10641.89
2022	6880.42	0.00	1968.76	148.34	1584.66	0.00	0.00	10821.48
2023	7014.26	0.00	2006.48	150.51	1587.73	0.00	0.00	11001.26
2024	7084.97	0.00	2026.93	151.17	1573.67	0.00	0.00	11079.71
2025	7207.58	0.00	2062.35	153.08	1572.98	0.00	0.00	11241.47
PERCENTAGE CHANGES								
2009	9.80	0.00	31.94	100.00	22.22	0.00	0.00	14.91
2010	19.20	0.00	11.58	250.00	0.00	0.00	0.00	16.30
2011	3.18	0.00	26.42	57.14	23.38	0.00	0.00	9.66
2012	3.99	0.00	17.16	0.00	5.26	0.00	0.00	6.82
2013	2.62	0.00	3.82	18.18	10.00	0.00	0.00	4.65
2014	1.74	0.00	5.38	3.94	43.82	0.00	0.00	6.90
2015	0.61	0.00	0.75	-0.63	-0.75	0.00	0.00	0.43
2016	2.19	0.00	2.07	2.03	0.52	0.00	0.00	1.89
2017	1.84	0.00	1.65	0.96	-0.21	0.00	0.00	1.45
2018	1.79	0.00	1.71	1.33	0.06	0.00	0.00	1.48
2019	1.91	0.00	1.85	1.34	0.11	0.00	0.00	1.60
2020	1.81	0.00	1.77	1.32	-0.02	0.00	0.00	1.50
2021	1.98	0.00	2.03	1.58	0.23	0.00	0.00	1.71
2022	1.98	0.00	1.93	1.48	0.22	0.00	0.00	1.69
2023	1.95	0.00	1.92	1.46	0.19	0.00	0.00	1.66
2024	1.01	0.00	1.02	0.44	-0.89	0.00	0.00	0.71
2025	1.73	0.00	1.75	1.27	-0.04	0.00	0.00	1.46
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	6.59	0.00	15.59	54.33	16.59	0.00	0.00	9.79
2015-2020	1.91	0.00	1.81	1.40	0.09	0.00	0.00	1.58
2015-2025	1.82	0.00	1.77	1.32	0.02	0.00	0.00	1.51

All data are for the financial year ending in June of the year specified.

TABLE C.13 Total Capacity Demand - Essential Energy

	Residential		Controlled Load		Low Voltage(Merged tariffs)			
	BLNN2AU	BLNT3AU	BLNC1AU	BLNC2AU	LV 1 Rate	LV TOU > 100mwh	LV TOU average	LV TOU < 100mwh
UNIT	**********			MW	**********			
2008	0.00	0.00	0.00	0.00	2010.00	0.00	0.00	0.00
2009	0.00	0.00	0.00	0.00	1710.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	1590.00	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00	1440.00	0.00	0.00	0.00
2012	0.00	0.00	0.00	0.00	1180.00	0.00	0.00	0.00
2013	0.00	0.00	0.00	0.00	1020.00	0.00	0.00	0.00
2014	0.00	0.00	0.00	0.00	961.64	0.00	0.00	0.00
2015	0.00	0.00	0.00	0.00	958.34	0.00	0.00	0.00
2016	0.00	0.00	0.00	0.00	926.91	0.00	0.00	0.00
2017	0.00	0.00	0.00	0.00	893.63	0.00	0.00	0.00
2018	0.00	0.00	0.00	0.00	860.85	0.00	0.00	0.00
2019	0.00	0.00	0.00	0.00	830.46	0.00	0.00	0.00
2020	0.00	0.00	0.00	0.00	800.26	0.00	0.00	0.00
2021	0.00	0.00	0.00	0.00	772.59	0.00	0.00	0.00
2022	0.00	0.00	0.00	0.00	745.87	0.00	0.00	0.00
2023	0.00	0.00	0.00	0.00	719.79	0.00	0.00	0.00
2024	0.00	0.00	0.00	0.00	687.60	0.00	0.00	0.00
2025	0.00	0.00	0.00	0.00	662.02	0.00	0.00	0.00
PERCENTAGE CHANGES								
2009	0.00	0.00	0.00	0.00	-14.93	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	-7.02	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00	-9.43	0.00	0.00	0.00
2012	0.00	0.00	0.00	0.00	-18.06	0.00	0.00	0.00
2013	0.00	0.00	0.00	0.00	-13.56	0.00	0.00	0.00
2014	0.00	0.00	0.00	0.00	-5.72	0.00	0.00	0.00
2015	0.00	0.00	0.00	0.00	-0.34	0.00	0.00	0.00
2016	0.00	0.00	0.00	0.00	-3.28	0.00	0.00	0.00
2017	0.00	0.00	0.00	0.00	-3.59	0.00	0.00	0.00
2018	0.00	0.00	0.00	0.00	-3.67	0.00	0.00	0.00
2019	0.00	0.00	0.00	0.00	-3.53	0.00	0.00	0.00
2020	0.00	0.00	0.00	0.00	-3.64	0.00	0.00	0.00
2021	0.00	0.00	0.00	0.00	-3.46	0.00	0.00	0.00
2022	0.00	0.00	0.00	0.00	-3.46	0.00	0.00	0.00
2023	0.00	0.00	0.00	0.00	-3.50	0.00	0.00	0.00
2024	0.00	0.00	0.00	0.00	-4.47	0.00	0.00	0.00
2025	0.00	0.00	0.00	0.00	-3.72	0.00	0.00	0.00
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	0.00	0.00	0.00	0.00	-11.56	0.00	0.00	0.00
2015-2020	0.00	0.00	0.00	0.00	-3.54	0.00	0.00	0.00
2015-2025	0.00	0.00	0.00	0.00	-3.63	0.00	0.00	0.00

All data are for the financial year ending in June of the year specified.

TABLE C.13 Total Capacity Demand - Essential Energy (continued)

	Low Voltage	High Voltage			Customer Specific	LV Public Lighting	LV Unmetered	Total
	LV TOU 3 rate	HV 1 Rate	HV TOU	HV TUO average				
UNIT	**********	**********		MW	**********	**********	**********	
2008	0.00	1150.00	0.00	0.00	0.00	0.00	0.00	3160.00
2009	0.00	970.00	0.00	0.00	0.00	0.00	0.00	2680.00
2010	0.00	790.00	0.00	0.00	0.00	0.00	0.00	2380.00
2011	0.00	590.00	0.00	0.00	0.00	0.00	0.00	2030.00
2012	0.00	650.00	0.00	0.00	0.00	0.00	0.00	1830.00
2013	0.00	620.00	0.00	0.00	0.00	0.00	0.00	1640.00
2014	0.00	536.09	0.00	0.00	0.00	0.00	0.00	1497.73
2015	0.00	517.05	0.00	0.00	0.00	0.00	0.00	1475.39
2016	0.00	506.38	0.00	0.00	0.00	0.00	0.00	1433.28
2017	0.00	493.47	0.00	0.00	0.00	0.00	0.00	1387.10
2018	0.00	481.30	0.00	0.00	0.00	0.00	0.00	1342.15
2019	0.00	470.12	0.00	0.00	0.00	0.00	0.00	1300.58
2020	0.00	458.82	0.00	0.00	0.00	0.00	0.00	1259.08
2021	0.00	449.07	0.00	0.00	0.00	0.00	0.00	1221.66
2022	0.00	439.03	0.00	0.00	0.00	0.00	0.00	1184.89
2023	0.00	429.15	0.00	0.00	0.00	0.00	0.00	1148.94
2024	0.00	415.31	0.00	0.00	0.00	0.00	0.00	1102.91
2025	0.00	405.20	0.00	0.00	0.00	0.00	0.00	1067.23
PERCENTAGE CHANGES								
2009	0.00	-15.65	0.00	0.00	0.00	0.00	0.00	-15.19
2010	0.00	-18.56	0.00	0.00	0.00	0.00	0.00	-11.19
2011	0.00	-25.32	0.00	0.00	0.00	0.00	0.00	-14.71
2012	0.00	10.17	0.00	0.00	0.00	0.00	0.00	-9.85
2013	0.00	-4.62	0.00	0.00	0.00	0.00	0.00	-10.38
2014	0.00	-13.53	0.00	0.00	0.00	0.00	0.00	-8.67
2015	0.00	-3.55	0.00	0.00	0.00	0.00	0.00	-1.49
2016	0.00	-2.06	0.00	0.00	0.00	0.00	0.00	-2.85
2017	0.00	-2.55	0.00	0.00	0.00	0.00	0.00	-3.22
2018	0.00	-2.47	0.00	0.00	0.00	0.00	0.00	-3.24
2019	0.00	-2.32	0.00	0.00	0.00	0.00	0.00	-3.10
2020	0.00	-2.40	0.00	0.00	0.00	0.00	0.00	-3.19
2021	0.00	-2.13	0.00	0.00	0.00	0.00	0.00	-2.97
2022	0.00	-2.24	0.00	0.00	0.00	0.00	0.00	-3.01
2023	0.00	-2.25	0.00	0.00	0.00	0.00	0.00	-3.03
2024	0.00	-3.22	0.00	0.00	0.00	0.00	0.00	-4.01
2025	0.00	-2.43	0.00	0.00	0.00	0.00	0.00	-3.24
COMPOUND GROWTH RATE (PER CENT) -								
2008-2014	0.00	-11.94	0.00	0.00	0.00	0.00	0.00	-11.70
2015-2020	0.00	-2.36	0.00	0.00	0.00	0.00	0.00	-3.12
2015-2025	0.00	-2.41	0.00	0.00	0.00	0.00	0.00	-3.19

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