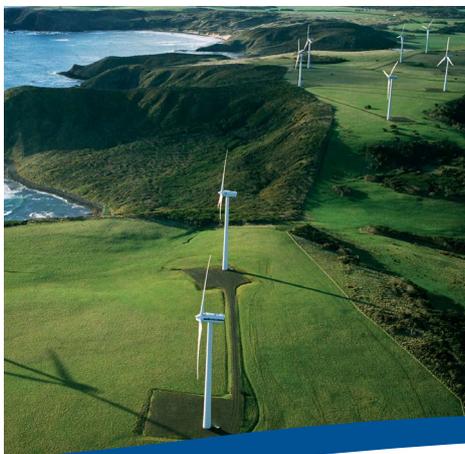


Restoring Tasmania's Energy Advantage



Ministerial foreword



Restoring Tasmania's Energy Advantage

The modern history of Tasmania and the development of our energy sector are profoundly linked. It has shaped our economy, our community and our environment.

For the best part of the last 100 years our energy investments have been seen as delivering significant advantage to Tasmania. Our energy sector has delivered secure, reliable and affordable renewable energy which has underpinned our economic and social development. It has employed tens of thousands of Tasmanians and attracted major industry to the State. It has afforded Tasmania a reputation for engineering excellence and technical expertise respected around the world.

The Tasmanian Government is firmly of the view that energy should work for the people of Tasmania. Energy should be an enabler of strong economic growth. It should underpin our standard of living. It should support the Tasmanian brand and represent an example of comparative advantage.

Regrettably, this has not been our more recent experience. Far from being an enabler, over the course of the last decade energy has been the source of serious discontent for many Tasmanians. There has been a sense that policy decisions and investment decisions have been made without sufficient regard to the practical consequence they may have for people.

For households and small business this has manifested in electricity price increases of more than 65 per cent over seven years. The stress this has caused many in the community, particularly small business and low income households, has been unacceptable.

The Tasmanian Government is determined to restore our energy advantage.

We recognise the need for our energy businesses to deliver appropriate returns to their owners – the Tasmanian people. However, this should be delivered through the most efficient energy supply possible, not through ever increasing power prices. Energy must work for the consumer. Consistent with this, the Government remains absolutely committed to ensuring that our energy businesses are managed as efficiently as possible in order to deliver the lowest possible power prices that are genuinely sustainable over the longer term.

Restoring our advantage will not be easy.

The energy sector is going through a period of significant change. New technologies are now empowering consumers and they are now determining the nature of their interaction with the energy sector. The way we consume electricity is changing and continued growth in the demand for energy is no longer a foregone conclusion. There are also increasing community expectations that the energy sector will do its part to secure a low carbon future.

Tasmania is uniquely placed to respond to the changing energy sector. We have a small but growing island economy; we have world class expertise in renewable energy with world class renewable resources. Through our heritage we have a strong interest in energy matters and an openness to innovation and technological change.

Given the rapidly changing nature of the energy sector, if Tasmania is to secure a long term energy advantage we need long term strategic thinking. That is why the Government has determined the time is right to develop a Tasmanian Energy Strategy that adopts a Whole of State perspective over the longer term.

Our new Strategy takes a 20 year view of where energy is heading and how Tasmania can best place itself for advantage. As part of the Strategy the Government is identifying a series of actions that include improving the efficiency of the electricity supply industry in Tasmania to ensure Tasmanians are getting the most affordable and reliable energy sector possible, as well as securing maximum opportunities for growth.

There is much work to do. We need to act responsibly to secure our existing industrial base; we need to develop opportunities to attract new load to the State; we need to



ensure we are reducing cost pressures on households and business as well as protecting the most vulnerable in our community; and we need to ensure that we are making the most of our renewable energy opportunities.

The challenge won't be easy and it will take a whole of community effort. We all have a role to play – consumers, Government as well as the energy market which includes our State-owned energy businesses. It is pleasing to see that our energy businesses are rising to the challenge – reducing costs and ensuring that the customer is central to everything they do.

The Tasmanian Government is committed to responding to today's energy challenges, but also ensuring that the energy sector can be adaptive and respond to emerging trends. This Strategy sets out a clear roadmap to deliver on the Government's agenda. By acting now we will ensure we have an affordable, flexible and secure energy sector which is capable of meeting the needs of future generations of Tasmanians.

Now is the time to restore Tasmania's energy advantage.

Matthew Groom MP

Minister for Energy

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Executive summary

For decades the energy supply industry was accustomed to continuous growth in demand. This predictable demand growth made it easier for businesses and government to make decisions regarding infrastructure investment. Electricity, in particular, was a key driver of Tasmania's industrialisation and modernisation through the 20th century, with hydro industrialisation giving Tasmania an advantage in attracting new industries to the State and increasing our living standards.

However, the maturing of the economy over the course of the last century, along with energy market changes, means that how energy is used and its role in growing the economy has changed and is likely to change even more rapidly in the years ahead. Unfortunately, Tasmania until now has not had a clear strategy to navigate through these changes and as a consequence our traditional comparative advantage in energy is not what it once was.

The traditional supply model of the energy industry, particularly the electricity industry, is facing challenges. Australia's energy landscape is changing with consumers becoming more active in managing how their energy needs are met. The challenges include:

- distributed generation is playing an increasing role in the supply of electricity;
- emerging technologies are opening up the products and providers that a consumer can choose from;
- globalisation of gas is challenging how gas is priced and used in the Australian context;
- structural changes in the economy are impacting on energy demand, including the growth of the services sector relative to traditional, more energy intensive industries; and
- finding a long term solution to managing carbon emissions.

Due to the structure of the Tasmanian energy market, the uncertainties encompassed in potential changes present risks and opportunities for Tasmania. It is vital that Tasmania has a strategy to position the State to capture the benefits and effectively manage the risks of these changes, and once again make energy a competitive advantage. The 20 year horizon of the Tasmanian Energy Strategy is designed to ensure actions taken over the short term position Tasmania to respond to the long term changes that are occurring.

In developing a Tasmanian Energy Strategy our vision is to:
"Restore energy as a competitive advantage for Tasmania by:

- *delivering affordable energy at competitive and predictable prices that are amongst the lowest in Australia;*
- *empowering consumer choice;*
- *ensuring an efficient energy sector that is customer focussed;*
- *utilising energy to facilitate State growth; and*
- *maximising Tasmania's renewable energy opportunities."*

Underpinning this vision are nine outcomes which will provide an indication of success against the vision. The outcomes are:

1. Tasmanian electricity prices will be amongst the lowest in Australia.
2. Tasmania's State-owned energy businesses will be more cost efficient thereby contributing to the lowest possible electricity prices.
3. Consumers will have greater choice about how to meet their energy supply needs and will pay competitive, fair and predictable prices for those choices.
4. Consumers' energy needs will be met through a safe, secure, and reliable supply, supported by the minimum necessary regulatory arrangements.
5. Tasmanian businesses will secure increased productivity and reduced cost pressure through affordable and predictable power prices and improved energy efficiency.
6. Tasmanian households will experience less household budget pressure through affordable and predictable power prices and improved energy efficiency.
7. The contribution of energy to cost of living pressure for the most vulnerable customers will be reduced.
8. Tasmania will be attractive for energy intensive industry through the provision of competitive, predictable long term power offerings.
9. Tasmania will continue to contribute significantly to renewable energy nationally reinforcing its reputation as the renewable energy State.

The Strategy is action focussed. A broad range of actions are proposed, under three broad themes of:

- making energy work for people;
- reducing the cost of delivering energy; and
- positioning Tasmania for the future.

There is a strong interrelationship between these broad themes, and many of the actions serve to promote more than one of these themes. All of these broad themes support the central vision of restoring energy as a competitive advantage for Tasmania.

Priority actions the Government will take to support the Strategy's vision will include:

- adopting additional measures to ensure that our State-owned energy businesses are being run as efficiently as possible in order to put further downward pressure on electricity prices;
- developing new policies that support and facilitate improved energy efficiency for Tasmanian households and businesses;
- monitoring pricing and regulatory frameworks to ensure that they are efficient and able to deliver affordable, predictable and sustainable outcomes that support State growth;
- identifying new opportunities to better utilise Tasmania's energy investments to retain existing industry as well to attract new businesses and industry to the State;
- enabling consumers, both households and businesses, to have greater choices of products and services, through encouraging competition within and between energy sources;
- removing impediments to the take up of emerging technologies and services; and
- positioning Tasmania to take further advantage of our significant renewable energy resources as the push for a lower emissions future becomes stronger, such as through prudent planning for a second Bass Strait interconnector and expansion of Tasmanian hydro generation output by 10 per cent.

The Strategy will be a living document. The energy sector has undergone major changes in the past twenty years, and the rate of change is not likely to abate over the next twenty years. The Strategy will be subject to ongoing review during further investigation and implementation phases, to ensure that the actions continue to meet the overarching vision into the future. For this reason, most of the actions proposed have an initial timeframe for the next five years.

This does not mean, however, that the Strategy has only a five-year life. The initial round of actions is designed to underpin the development of a flexible and customer focused energy supply industry to meet the needs of a vibrant and dynamic economy. These actions will position the Government, and Tasmania, to be able to respond to changing circumstances, emerging technologies, and new demands of the economy and the customers of the future.



I. Introduction

For decades the energy supply industry was accustomed to continuous growth in demand. This predictable demand growth made it easier for businesses and Government to make decisions regarding infrastructure investment. Electricity, in particular, was a key driver of Tasmania's industrialisation and modernisation through the 20th century, with hydro industrialisation giving Tasmania an advantage in attracting new industries to the State and increasing our living standards.

However, the maturing of the economy over the course of the last century, along with energy market changes, means that how energy is used and its role in growing the economy has changed and is likely to change even more rapidly in the years ahead. Unfortunately, Tasmania until now has not had a clear strategy to navigate through these changes and as a consequence our traditional comparative advantage in energy is not what it once was.

The traditional supply model of the energy industry, particularly the electricity industry, is facing challenges. Australia's energy landscape is changing with consumers becoming more active in managing how their energy needs are met. The challenges include:

- distributed generation is playing an increasing role in the supply of electricity;
- emerging technologies are opening up the products and providers that a consumer can choose from;
- globalisation of gas is challenging how gas is priced and used in the Australian context;
- structural changes in the economy are impacting on energy demand, including the growth of the services sector relative to traditional, more energy intensive industries; and
- finding a long term solution to managing carbon emissions.

Due to the structure of the Tasmanian energy market, the uncertainties encompassed in potential changes present risks and opportunities. It is vital that Tasmania has an energy strategy to position the State to capture the benefits and effectively manage the risks of these changes, and once again make energy a competitive advantage. The 20 year horizon of the Tasmanian Energy Strategy is designed to ensure actions taken over the short term position Tasmania to respond to the long term changes that are occurring.

Since 2008, electricity consumption growth has flattened in Australia and begun to decline. At the same time new generation continued to be encouraged, particularly as a result of favourable policy settings.

As a result, as in any over-supplied market, commodity prices have declined and wholesale electricity prices are at levels not seen for almost twenty years.

Despite this, consumers have been exposed to ever increasing prices largely driven by significant investment in networks and additional policy related charges. Increased prices have incentivised customers to reduce consumption through energy efficiency measures and the installation of solar photovoltaics (PV). Emerging technologies and innovative product offerings will continue to change the energy landscape – developments in battery storage and electric vehicles could be a game changer, including creating the potential for a large number of customers to go 'off grid'.

These trends are challenging governments and market participants across Australia. In Tasmania, the situation is particularly significant given the Government's involvement in the industry as owner of retail, network and generation businesses.

This Strategy seeks to reposition Tasmania and its State-owned energy businesses so that the Tasmanian public, as ultimate owner of the businesses, can benefit from the lowest possible sustainable power prices while ensuring appropriate returns on our investments.

The Strategy aims to put downward pressure on prices through efficiencies driven by competitive tension where possible, improved governance arrangements, better price signals, and better utilisation of existing assets.

By paying a competitive price for delivered energy, existing consumers, large and small, will benefit and Tasmania will be better placed to attract investment in new industries.

On-island load growth will maximise opportunities for the private sector to develop new generation assets and position Tasmania to maximise its contribution of renewable energy into the National Electricity Market.

The Strategy recognises that the world is beginning the transition to a low carbon future in response to the challenge of climate change. Accordingly, the Strategy positions Tasmania to take further advantage of our significant renewable energy resources as the push for a lower emissions future becomes stronger and the market conditions and signals for investment strengthen.

New on-island economic activity will also grow the potential market for the gas industry and may in time create opportunities for other fuel sources such as bio-fuel.

The Energy Strategy recognises Tasmania's energy market characteristics and where these may differ from other jurisdictions (for example the small size of Tasmania's customer base; Hydro Tasmania's wholesale market dominance; more



than half of Tasmania's electricity load being consumed by four large industrial businesses; and relatively high household electricity bills due to a combination of a relatively cold climate, poor housing stock and low penetration of alternative fuels such as natural gas). The Strategy focuses on achieving the best outcome for Tasmanian customers and businesses in this environment.

Importantly for Tasmania, the Strategy lays out a plan that will once again make energy our competitive advantage and help drive our future prosperity.

The Government has considered the views of energy consumers through an Energy Working Group consisting of representatives of different customer sectors. The Energy Working Group commenced work in May 2014 soon after the election of the Government, and its considerations and advice to Government is summarised in its report to the Minister for Energy, which can be found on the Department of State Growth's website at www.stategrowth.tas.gov.au.

In August 2014, an Energy Strategy Issues Paper was released for broader consultation with interested stakeholders and members of the public generally. Thirty submissions were received. The Issues Paper and the submissions are also available on the Department of State Growth's website.

The input from both the Energy Working Group, and contributions from the public submissions, has helped shape the Government's considerations of this Energy Strategy and is greatly appreciated. The Energy Strategy does not include detailed information and data on Tasmania's energy markets and industry, as this information was outlined in the Issues Paper. Readers should refer to both documents to gain a complete picture of the basis upon which the Government has developed the Strategy. Further detailed background material is also available from the previous Electricity Supply Industry Expert Panel (the Expert Panel) process.

The Energy Strategy also does not explicitly address Tasmania's climate change policies and current legislative requirements. This is subject to a separate action plan to be released by Government. The Department of State Growth is working closely with the Tasmanian Climate Change Office to ensure the vision, outcomes and actions contained in the Energy Strategy will be consistent with, and complementary to, that action plan.

The Energy Strategy will be used by Government to guide its future policy decisions and actions by Government agencies and the Government's energy businesses.

The Government welcomes stakeholder and community views on the Energy Strategy and will take them into account in the finalisation of the Strategy. Details of how to provide feedback are contained in the Next steps section at the end of the Strategy.

2. Vision and outcomes

The Government's election commitment was for the Energy Strategy to *"identify ways in which energy can once again be utilised as an economic driver, including by securing a stable and sustainable price path for power that can provide relief to consumers and help grow the economy and attract new investment."*

Consistent with this commitment, and taking into account the views and input of the Energy Working Group, stakeholders and members of the public, the Government has determined the Tasmanian Energy Strategy will support the following policy vision:

"Restore energy as a competitive advantage for Tasmania by:

- delivering affordable energy at competitive and predictable prices that are amongst the lowest in Australia;*
- empowering consumer choice;*
- ensuring an efficient energy sector that is customer focussed;*
- utilising energy to facilitate State growth; and*
- maximising Tasmania's renewable energy opportunities."*



The following outcomes will indicate success against this vision:

1. Tasmanian electricity prices will be amongst the lowest in Australia.
2. Tasmania's State-owned energy businesses will be more cost efficient thereby contributing to the lowest possible energy prices.
3. Consumers will have greater choice about how to meet their energy supply needs and will pay competitive, fair and predictable prices for those choices.
4. Consumers' energy needs will be met through a safe, secure, and reliable supply, supported by the minimum necessary regulatory arrangements.
5. Tasmanian businesses will secure increased productivity and reduced cost pressure through affordable and predictable power prices and improved energy efficiency.
6. Tasmanian households will experience less household budget pressure through affordable and predictable power prices and improved energy efficiency.
7. The contribution of energy to cost of living pressure for the most vulnerable customers will be reduced.
8. Tasmania will be attractive for energy intensive industry through the provision of competitive, predictable long term power offerings.
9. Tasmania will continue to contribute significantly to renewable energy nationally reinforcing its reputation as the renewable energy State.

The Government recognises that some of these outcomes will be challenging and hard to measure and may take time to achieve. For this reason the timeframe for the Energy Strategy is 20 years.

Section three of the Energy Strategy briefly discusses the context and circumstances that exist in Tasmania's energy markets relevant to progressing our vision.

Section four of the Energy Strategy describes the actions that Government will pursue to achieve the vision and its associated outcomes. The majority of these actions are short to medium term. The Strategy will be reviewed at five year intervals as a minimum, to add to and update its actions.

3. Tasmanian energy issues – now and into the future

When Tasmanians think of energy they generally think of 'the Hydro'. This era commenced 100 years ago and since then the history of the Hydro has been inextricably linked with Tasmania's industrial, economic, geographic and cultural development. In essence, Tasmania's renewable hydro-electricity provided a competitive advantage that helped drive our past prosperity, through creating the energy system to support the attraction and growth of industries.

The Hydro is an important part of Tasmania's energy story – but it is not the only part. For example, many people are surprised to hear that they probably spend more on fuel to run their car than for electricity to power their home. Wood and LPG are also an important heating fuel for many Tasmanian households. Tasmania also has a long history in mining and the use of coal, with cement, smelting and paper manufacturing industries still using local and imported coal.

More recently Tasmania was interconnected with the national gas network with the commissioning of the Tasmanian Gas Pipeline in 2002 and today around a quarter of premises that have access to the gas pipeline have adopted natural gas as a fuel choice, including more than 12 000 customers.

Tasmania's electricity sector has been through periods of significant reform over the past two decades. The implementation of national competition policy reforms in the mid-1990s established the framework for competitive energy markets and led to the disaggregation of the Hydro-Electric Corporation in 1998. Tasmania joined the National Electricity Market (NEM) in 2005 and Basslink was commissioned in 2006, interconnecting Tasmania with the national electricity grid.

More recently the previous Government initiated reforms based on the recommendations of the Expert Panel established by Parliament that resulted in the formation of TasNetworks as a single network entity with responsibility for both transmission and distribution, and a fully contestable retail market from 1 July 2014. These are very significant changes and it is important that they be given time to be fully implemented to achieve their intended benefits, prior to consideration of any further structural reforms.

Despite the increased diversity in fuel choice and these recent reforms to the electricity market, the energy industry in Tasmania is facing a number of key issues. Addressing the current challenges and seizing future opportunities will position our energy sector to drive Tasmania's prosperity into the future and define the way in which energy can once again be a competitive advantage for the State.

3.1. Electricity price rises have been a key concern for all customers.

Electricity prices across Australia rose significantly above inflation from 2007 to 2012 and this same trend has occurred in Tasmania. The price rises were driven by a number of factors including increased network charges and environmental charges. In Tasmania, drought through 2007 to 2010 also contributed to higher prices. While wholesale prices increased over the period from 2000 to 2010-11 and were a focus of attention during the Expert Panel's work, they have since decreased significantly and are now back at levels not seen since the early 2000s.

Electricity prices have recently plateaued and in some instances declined due to falling electricity demand and the repeal of the carbon tax. In Tasmania, the economy was more exposed than other states to these price rises, as we have more vulnerable customers, a greater proportion of electricity intensive industries, and greater reliance on electricity due to low penetration of gas.

3.2. Electricity consumption has been declining and is forecast to remain relatively flat.

The traditional electricity supply model has been fundamentally challenged in recent years. Consumption has been declining since 2008 but at the same time generation capacity development (mainly wind and solar PV) has continued. Consumption is forecast to remain relatively flat in the coming years, and as a result, wholesale electricity prices are at the same level as when the National Electricity Market commenced twenty years ago.

At the same time, retail electricity prices have been rapidly escalating, largely as a result of significantly increased investment in networks. This is leading to concerns of a 'death spiral' - that is, high prices driving consumers to invest in solar PV and battery storage and to disconnect from the grid. To the extent that this occurs, it will leave fewer customers to pay for the maintenance of the grid, resulting in even higher prices and driving even more customers off the grid. The key to addressing this issue is to reform the network tariff settings and have more efficient energy businesses that can 'right size' to the markets in which they operate (recognising the challenges associated with long life assets).

3.3. Tasmanian households and businesses consume a relatively high amount of electricity

Tasmanians have a high dependence on electricity and comparatively use a lot of it. This is due to Tasmania's natural gas network not being as developed as most other Australian states and territories; and Tasmania's heating requirements being relatively high due to cooler climate and relatively old and inefficient building stock. In addition, a small number of electricity intensive large major industrial facilities consume more than half of Tasmania's electricity demand. Consequently, while prices are now the second lowest in the NEM (when comparing standing offer prices), bills are high by comparison to consumers interstate. Comparing Tasmanian prices with interstate markets is also difficult, given that in competitive markets where market offers exist, many consumers enjoy prices below standing offer prices.

3.4. The growth of solar PV

There has been a rapid increase in the amount of household solar PV systems installed in Tasmania in recent years, stimulated by decreasing solar PV prices, higher electricity prices and attractive incentive schemes. This trend has occurred across the country, with solar owners understandably investing in PV in response to these signals. The Australian Energy Market Operator forecasts continued strong growth in rooftop PV in Tasmania over the next decade, from the current installed capacity of approximately 70 MW to approximately 300 MW by 2024.

Electricity market and regulatory arrangements need to support consumers' rights to take up new technologies, while also ensuring there are no unintended cross-subsidies from other end users. Current largely consumption-based tariff arrangements allow households with solar PV to pay lower network charges without actually contributing to lower network costs. Tariff design needs to ensure all consumers are paying fairly for their use of the network, noting that it is not just households with solar PV that are being cross-subsidised by other end users under current arrangements. For example, households with above average electricity use at peak times also benefit.

Solar customers who receive the grandfathered solar feed-in tariff enjoy a significant benefit, with the subsidy paid by TasNetworks projected to cost more than \$13 million in 2014-15. High concentrations of solar PV can also cause network stability issues which involve a cost to overcome.

3.5. We are dependent on imported refined petroleum fuels to meet our transport needs

On average Tasmanians spend more on transport fuels than household energy. All petroleum fuels are imported, with the Australian economy being a price taker. Australia is vulnerable to oil price increases and has little influence over prices faced by consumers. Competition between transport fuel sources is in its infancy but could rapidly increase with technological developments such as electric vehicles and further penetration of transport gas products. Both opportunities could assist with improving the utilisation of the electricity and gas networks, ultimately assisting in lowering network costs for consumers, as well as reducing Tasmanians dependency on liquid fuel imports.

3.6. Tasmania's natural gas sector is slowly expanding, but faces future challenges

The limited roll-out of the natural gas distribution network has constrained the size of this market and resulted in a relatively narrow customer base from which the fixed costs of gas transportation must be supported. As in the rest of eastern Australia gas commodity prices in Tasmania are expected to rise, resulting in delivered gas price increases over the next five years that are expected to exceed inflation. Despite these forecast increases gas is expected to remain an attractive energy option.

This increasing price trend is being driven by the rapid expansion of the Liquefied Natural Gas market which is driving a move towards export parity pricing for gas. In the long term this means gas is becoming a global commodity, the value of which will be set through the influence of global and domestic supply and demand factors. As a consequence, gas generation across the NEM is likely to shift away from base-load toward peaking plant.

3.7. The energy sector faces an uncertain future

While increased electricity prices and declining consumption have been the two most apparent trends in recent years, the industry has also seen a significant increase by consumers of demand-side participation. In the coming years, most analysts expect that it is likely that electric vehicle uptake will increase as battery costs decrease. Another potential game changer for the industry is a move to off-grid systems as battery costs continue to decline and technology improves. While this has benefits in terms of remote power supplies helping to reduce network costs, it may also lead to higher network prices if urban consumers adopt such an option. These trends may necessitate some fundamental changes in the business model for all energy market participants.

4. Strategic actions

Energy is, and will continue to be, an essential service for Tasmanian households and businesses. Tasmanians want reliable energy supplied at an affordable, predictable and competitive price, and the ability to choose from a range of energy services that best suit their needs. We have the opportunity to once again make energy a competitive advantage for Tasmania and contribute to our prosperity: by ensuring our energy businesses are efficient and customer focussed; by improving the energy productivity of our households and businesses; by facilitating load growth; and by maximising the utilisation of our significant renewable energy resources.

The following actions will assist Tasmanian consumers, the market and Government to meet these needs and achieve the Strategy's vision. These strategic actions are grouped under three broad themes:

- making energy work for people;
- reducing the cost of delivering energy; and
- positioning Tasmania for the future.

The implementation of actions will be predicated on considering their expected costs and benefits, to ensure that they are likely to provide a positive outcome for Tasmanian consumers and businesses.

The actions have been formulated in recognition that, while the pace and extent of the trends discussed in section 3 cannot be accurately predicted, the direction of some key changes is already apparent.

4.1. Making energy work for people

Tasmania's significant investment in the energy sector has historically delivered great benefit to the Tasmanian people in the form of lower power prices, investment and jobs. Regrettably, more recently Tasmanians have experienced significant discontent in relation to energy matters. Most notable of all has been the impact of dramatically increasing power prices causing significant cost pressure on both households and businesses. The Government intends to use the Energy Strategy to emphasise the importance of ensuring that decision making in relation to the energy sector is focussed on ensuring improved outcomes for people. It is with this in mind that a core outcome of the Energy Strategy is to deliver power prices that are amongst the lowest in Australia.

Lower power prices are important for reducing cost pressure on households and businesses which in turn can help facilitate further spending and investment in the economy. It is also important that there be increased choice for people.

Consumers should have the ability to take control of their energy choices, in terms of energy use, information and sources of energy. Traditionally, a feature of the energy market has been limited choices and little information for consumers. However, this is beginning to change. The Government is determined to ensure Tasmanian consumers, both households and businesses, are able to take advantage of these changes. The following are the key areas and associated actions for ensuring that Tasmania's investment in energy delivers positive outcomes for the Tasmanian people.

4.1.1. Ensuring greater focus on customer outcomes

Over the course of the last decade there have been energy related decisions that have had significant price impacts for end consumers. Price increases of more than 65 per cent over seven years have been highly challenging for households and businesses to manage. While there can be argument as to the exact cause for such price increases there can be no doubting the significant stress they have caused for many people in our community and, in addition, the significant impact they have had on investment and job creation. The Government is of the view that decision making into the future must have proper regard for the impact on people, households, families and businesses in our community. If energy is to once again be an advantage for Tasmania it is incumbent on Government, as well as our energy businesses, to ensure that energy related decisions deliver good outcomes for customers and for people.

4.1.2. Improving competitive outcomes for electricity consumers

The electricity industry has undergone significant transformation over the past twenty years and whereas in the past consumers were only able to buy their electricity from state owned electricity commissions, in other states consumers now have the choice of many providers, each offering many different products.

This competitive environment drives efficiencies and leads to innovation as participants compete for market share. Retailers will often package electricity with other services such as gas and, more recently, solar panels, and consumers can buy a product that suits their needs. This may include weekly or monthly bills rather than a larger quarterly bill, access to smart phone apps that show daily usage, and energy audits. In the coming years, non-traditional energy retailers, internet service providers, technology companies and other new players are expected to enter this increasingly competitive sector.

The Government considers that a competitive retail market will provide the best outcomes for consumers in terms of choice of supply, choice of product, and lower prices in the long term.

While the commencement of full retail contestability on 1 July 2014 has the potential to enhance small customer competition in the Tasmanian market, at this stage competition only exists in the commercial and industrial sector. Also, customers in some embedded networks do not have a choice of retailer. Clearly, there is more work to do to enable effective competition.

Other NEM jurisdictions have facilitated competition by divestment of their retail businesses. The Government remains open to a sale of Aurora Energy's customer book, following the cessation of the previous sale process under the previous Government in 2013.

4.1.3. Improved energy efficiency

Price is one component of an energy bill, and consumption is the other. This section focusses on reducing consumption and/or increasing productivity through improving energy efficiency.

For residential customers, energy efficiency not only lowers bills; it can also increase levels of comfort and standards of living. This is particularly important in Tasmania given our climate, relatively older building stock, and relatively high proportion of vulnerable customer households.

For businesses, improved energy efficiency translates into improved productivity – for example through producing the same level of output with reduced costs, or a higher level of output without an increase in costs.

Governments need to tread carefully in implementing energy efficiency programs as poorly implemented programs may impose additional costs, which are inevitably paid for by consumers. Recent reviews of the Victorian 'white certificate' program led to it being considered for closure as it was becoming an increasingly expensive scheme, without commensurate economic benefits.

In a well-informed market, consumers will be incentivised to undertake energy efficiency measures as it makes financial sense. However, energy markets are not perfect, so Government has a role in helping to address market failures, such as information gaps, split incentives or lack of access to capital.

Information gaps exist where it is difficult for consumers to calculate the payback period on an energy efficiency upgrade.

Examples of energy efficiency payback periods ¹

Measure	Indicative cost	Indicative payback period
Lighting (household)	\$574	5.7 years
Draught sealing (household)	\$1 037	6.6 years
Ceiling insulation (household)	\$1 130	6.8 years
Installing heat-pump (household)	\$2 500	2.2 years
Repairing hot water service leakages (business)	\$250	2 years
Installing photo-sensors on lighting (business)	\$300	3 years
Ceiling insulation (business)	\$20 000	6 years

¹ First three household measures taken from Sustainability Victoria. Victorian Households Energy Report. May 2014.

Environmental Upgrade Agreements

Environmental Upgrade Agreements (EUAs) provide a mechanism for commercial building owners to invest in energy efficiency upgrades by providing the funds under low cost and long term agreements, and guarantees the financier more secure repayments. The EUA involves the building owner coming to an agreement with a financier on the cost and energy efficiency benefits of the upgrade, whereby the repayments by the owner become a payment through local council rates notices. The EUA effectively is a loan to the property, not the owner, and on change of ownership the payments become the responsibility of the new owner. The key benefits of the EUA structure are:

- financing is not the same as debt or equity and is on longer terms (>10 years) with no refinancing required;
- financiers have no recourse over the property the funds are lent to;
- repayments are more secure in case of default;
- an EUA commitment stays with the property rather than the owner; and
- they can stimulate building developments and create jobs and new industries.

EUAs have been operating in New South Wales and Victoria since 2011 and are being implemented in South Australia in 2015.

Businesses often have a clear understanding of the payback period but are cash and capital constrained. The Government is willing to explore with the private sector facilitating programs that would help businesses to access funds to undertake energy efficient upgrades.

Some smaller businesses, however, do not have the resources to either recognise or implement energy efficiency opportunities specific to their particular circumstances. More targeted delivery of accurate information, at a time and in a format that meets the needs of small business, could assist in addressing this information gap.

The Government as part of the Energy Strategy will examine implementing programs to improve energy efficiency and minimise power bills for vulnerable customers. Such programs will learn from the lessons of the past to deliver cost effective and value adding programs.

4.1.4. Regulation that delivers efficient outcomes while minimising red tape

The Government is committed to reducing regulatory red tape, which is hindering the ability of electricity businesses to operate efficiently (and results in unnecessary costs that are passed through to consumers), while recognising the crucial role of appropriate legislation to ensure the ongoing safe, reliable and efficient supply of an essential service.

Summary of regulatory arrangements

Tasmania is part of the NEM and operates under *National Electricity Law and National Energy Retail Law*. There has been steady transition from State to National regulation since Tasmania joined the NEM, but there are still some important components covered under State law – for example safety, reliability, the interrelationship with the planning system, and retail price regulation. Tasmanian electricity businesses also operate under the *Tasmanian Electricity Supply Industry Act 1995*.

Electricity networks are natural monopolies and are independently regulated by the Australian Energy Regulator (AER). Regulation aims to replicate the efficiency outcomes that a competitive business would achieve in delivering the service. This is a difficult challenge.

A significant component of electricity price rises observed over the past decade was due to large increases in network costs, and there has been criticism of the regulatory framework and its application by the AER in allowing network regulatory allowances that may have been higher than necessary. Recent reforms (notably the AER's Better Regulation program) have attempted to address this although it is too early to gauge the level of improvement.

In an attempt to better understand and benchmark network businesses, the AER's reforms place heavy reporting requirements on these businesses. In addition, at a State level there are additional requirements on the businesses to report to the Tasmanian Economic Regulator. Striking the correct balance to ensure regulation is sufficient to allow efficient outcomes, rather than excessive red tape simply adding to compliance costs, is a significant challenge.

4.1.5. Protecting vulnerable consumers

As a general principle, customers should make and be responsible for decisions about their energy use. There are, however, many examples where customers are not in a position to make an informed choice that will deliver optimum outcomes. They may lack sufficient information, or they may lack the financial resources to implement the best choices, or both. For vulnerable customers to achieve the best outcomes, and to enable them to participate in our society, successive Governments over a long period of time have acknowledged that assistance is needed for these customers. Assistance has been through the form of energy efficiency programs and information, and concession schemes.

The adoption of the National Energy Customer Framework in Tasmania on 1 July 2012 has strengthened provisions for customers facing hardship. Aurora Energy has a new hardship program, called Your Energy Support (YES), and has been making a concerted effort to ensure customers most in need are placed on this program. The YES program provides assistance through establishing tailored payment plans and providing free advice (including a free energy audit) to help reduce energy use.

In any transition to more cost reflective tariffs, the impacts on vulnerable customers will need to be considered and the role of Government assistance measures will need to be taken into account. Any changes to tariff arrangements in Tasmania will be matched with appropriate concession arrangements. Through the Energy Strategy the Government will ensure that vulnerable customers continue to be properly supported.

4.1.6. Active Tasmanian representation in national reform processes

It is important to note that the regulatory regime that applies to energy has been evolving over the past two decades towards a nationally consistent model, reflecting that jurisdictional boundaries can be an impediment to efficient operation of the energy market.

As part of this move, Tasmania has been an active participant in the reform process, which has seen the development of the agreed legislative frameworks for the National Electricity Law, the National Gas Law, and the National Energy Retail Law. These Laws, together with their supporting Rules, have all been developed jointly by all jurisdictions, enacted by South Australia as lead legislator, and adopted by each participating jurisdiction.

Accordingly, the legislation that applies in Tasmania, and that is administered within Tasmania, includes local legislation that is specific to Tasmania, as well as the national laws that apply in all jurisdictions. Tasmania has an ongoing role in ensuring that these agreed national regulatory arrangements are complemented by our local jurisdictional legislation and, in combination, continue to meet the needs of Tasmanian businesses and consumers. This includes continual monitoring, and participating in the ongoing reform that is taking place, particularly in relation to accommodating new technologies (such as smart meters), to ensure that the interests of Tasmanian customers are advanced.

As an example, a key issue for the NEM is the oversupply of generation capacity. Accordingly, governments should have a clear position on how this will be resolved. The Government believes it is important that governments do not intervene to hinder generation capacity exiting the market, to ensure the market can naturally rebalance supply and demand.

4.1.7. Competition and efficient use of transport fuels

The Government accepts there is only limited competition between transport fuel sources but acknowledges that a move away from our dependency on petroleum fuels will largely be as a result of technological innovation and market forces rather than regulatory intervention.

Non-petroleum fuel sources, such as transport gas and liquid biofuels, have created some fuel source competition, in particular for commercial vehicles. There is potential for these alternatives to increase their market share.

The biggest shift will be emergence of cost effective electric vehicles. While electric vehicles have been around for over 100 years, they have been hampered by battery technology that limited vehicle performance. As battery technology is rapidly evolving, it is a distinct possibility that electric vehicles will be cost and performance competitive within the term of this Strategy.

Not only will electric vehicles create competition with liquid fuels and, therefore, reduce reliance and vulnerability to oil prices and supply, they provide the opportunity to increase Tasmanian electricity load, reshape demand and improve network utilisation (with appropriate market signals), which should lower prices for all customers.

However, this outcome will only be achieved if the uptake is well managed and cost effective price signals are in place. The absence of cost effective price signals, could, for example, lead to an adverse outcome such as vehicles being charged during peak demand events that could lead to network upgrades and increased costs.

While there are limited opportunities for Government to significantly impact the Tasmanian economy's reliance on petroleum fuels, there is value in continuing to improve the efficiency of the transport fleet and promote the greater use of public transport. This focus will also allow Tasmania to further reduce its dependence on petroleum fuels, as well as reduce its greenhouse gas emissions.

4.1.8. Monitoring Tasmania's level of energy security

A secure energy supply is fundamental to both the well-being of Tasmanians and on-island economic activity, and maintaining energy security is a key responsibility for the Government.

Tasmania is fortunate in that it has a geographically diverse supply of hydro-electric and other power stations, and it is now interconnected to the NEM and so has a reduced exposure to hydrological risk. Gas has also given some consumers the choice of an alternative fuel source.

The ongoing challenge for Government is to provide an environment that balances security and reliability with affordability, and to attract investment as and when it is needed (noting that Australian Energy Market Operator (AEMO) modelling suggests that Tasmania will not require new generation for at least 10 years).

Another key energy security aspect for the Government is overseeing emergency management analysis and planning for disruptions to the electricity, gas and petroleum industries.

4.1.9 Actions – making energy work for people

Number	Action	Timeframe
1	Monitor the level of competition in the small customer segment of the Tasmanian electricity retail market with recommendations (including potential additional reforms) made where necessary to facilitate (further) development of a competitive market.	Ongoing
2	Advocate for greater efficiency in the national regulatory arrangements to improve outcomes and reduce costs for consumers and taxpayers.	Ongoing
3	Advocate for Tasmania's interests in national reform processes, principally through the COAG Energy Council (CEC).	Ongoing
4	Advocate for national reforms in areas where Tasmania considers reform is required, where such reforms are more appropriately and efficiently, or must be, addressed through national rather than state based processes.	Ongoing
5	Advocate for allowing market mechanisms to efficiently exit excess generation capacity to address the current oversupply in the NEM.	Ongoing
6	Review State regulatory instruments that apply to Tasmania's energy supply chain, and remove "unnecessary" red tape and complexity to reduce costs to consumers.	2016/17
7	Review reliability standards based on national reform principles.	2018/19
8	Identify any impediments to a customer led take-up of smart meters and other demand side enabling technologies by small customers in Tasmania (including assessing the impact on customers).	2015/16
9	Investigate the likely impacts in Tasmania associated with the introduction of various cost reflective tariffs in the small customer market, including impacts on the electricity supply system and on customers (particularly vulnerable customers).	2015/16
10	Monitor the effectiveness of energy concession arrangements to ensure that vulnerable Tasmanians continue to be properly supported.	Ongoing
11	Implement a program aimed at improving the energy efficiency of Tasmania's existing building stock and that reduces energy bills for Tasmanian vulnerable households.	2015/16
12	Provide information on the efficient management of energy for businesses and households.	2015/16
13	Improve customer information to assist customers in understanding what drives their energy bills and ensure they have the basic information required to evaluate retail product options.	2015/16
14	Investigate the case for introducing Environmental Upgrade Agreements to enable commercial building owners and tenants the opportunity to improve productivity through energy (and water) savings.	2015/16
15	Undertake a pilot program to reduce lighting costs for aged care facilities.	2015/16
16	Explore options to simplify energy procurement arrangements for Major Industrial customers.	2014/15
17	Monitor gas market developments and their impacts and work with the Australian Government and other jurisdictions to ensure supply constraints are addressed as quickly as possible, including through promoting capacity trading and price transparency in the market, to ameliorate forecast commodity price increases.	Ongoing
18	Evaluate the effectiveness of gas customer protections and consider the costs and benefits of regulatory and non-regulatory approaches to address any identified gaps.	2014/15-2017/18
19	Undertake a review of gas legislation in Tasmania to ensure it is contemporary with market conditions and ensures administrative overlaps are removed.	2015/16
20	Undertake a pilot program to help Government and private sector vehicle fleets reduce their fuel and operational costs.	2015/16
21	Increase the efficiency of public transport through system improvements.	2015/16

4.2. Reducing the cost of delivering energy

There is a diverse range of energy sources in Tasmania (both stationary and transport-related). The electricity market is the largest stationary energy sector in the State. Due to Government ownership of the supply chain and the regulated nature of the market, it is also the one that Government has relatively more influence over and which has the greatest impact for most consumers.

An efficient electricity market will deliver the lowest possible electricity prices. The following are the key areas and actions the Government will take to improve efficiencies in the electricity sector and place downward pressure on electricity prices.

4.2.1. Sustainable network pricing and performance

One key issue raised continually by consumers and stakeholders is the significant increase in network charges over the past decade. Prices for both transmission and distribution customers have increased well above the rates of inflation. Nominal increases of over 50 per cent for the distribution network and over 100 per cent for the transmission network are due to extensive upgrades and replacement investments, and meeting reliability standards, putting continued upward pressure on customer prices.

While TasNetworks has started to address this issue, stakeholders feel there is room to consider adjustment of past spending to better reflect a significantly lower demand than previously anticipated and alignment with the actual utilisation of the network. This also needs to consider the reliability and security benefits of the network system that customers are willing to pay for.

Under the regulatory framework, network pricing is the responsibility of the Australian Energy Regulator (AER). Hence it is appropriate that this issue be investigated and addressed through the national network pricing framework. The Government will continue to monitor this issue to ensure that there are fair outcomes for all Tasmanians.

At the commencement of each pricing investigation undertaken by the AER, a critical issue is assessing what the asset base of the business should be. It has been the AER's usual practice to assess whether expenditure has been prudent, and then adjust the asset base of the business by depreciating assets according to standard accounting practice and then adding in new capital expenditure each year.

Given the significant change in the outlook for demand that is occurring nationally and that many network businesses may not have anticipated this in pricing proposals, it may be that the AER needs to consider whether this method remains

appropriate, or whether a more thorough assessment of the optimisation of the asset base needs to be considered. For instance, more attention may need to be paid to ensuring that stranded assets, or assets replaced before the end of their useful life, are appropriately valued.

A common issue raised with the recent increase in network costs was the role demand forecasting played in driving significant network investment. Typically the network business provides its own forecast to then plan its replacement and augmentation works. The AER is then required to approve the demand forecasts and the capital program proposed to meet demand as part of the investigation process. There have been suggestions that demand forecasting and planning should be done by an independent third party. To this end the Australian Energy Market Operator (AEMO), as the national transmission planner, is already undertaking state (regional) load forecasts and connection point load forecasts. These are being used by network businesses, including TasNetworks, when planning the network.

A model has been adopted in Victoria with the AEMO providing the forecasting and planning service. At a high level this seems to be successful with network spending in the Victorian region over the past 10 years being lower than most other regions. However, there are questions over the veracity of this comparison and the drivers of the different outcomes (due to ownership arrangements, comparative age, capacity and condition of networks). Furthermore, recent reviews investigating this approach by the Australian Energy Market Commission (AEMC) and the Productivity Commission have found issues with the approach. Notwithstanding this, there is merit in exploring the risks and costs and ultimate customer value in adopting a similar model in Tasmania.

Reliability standards are another key driver of network costs. Tasmanian reliability standards are defined based on local requirements. Over the past two years the AEMC has undertaken a review of the transmission and distribution reliability frameworks (but not the standards themselves). The current Tasmanian reliability standards were set in 2006 with minor changes since. A key issue going forward is that consumers, particularly larger industrial customers, have choices about the cost of networks solutions and the level of reliability they receive.

One issue raised by stakeholders is the perception that the distribution connection process is costly, lacks transparency and is not effective in terms of response time. These charges are regulated under the National Energy Customer Framework and associated guidelines from the Australian Energy Regulator. TasNetworks does not offer different prices to different customers for specific actions or items, although the connection cost for each development or requirement

may differ depending on particular circumstances. Developers in particular would like to see some flexibility in the ability to accelerate connection works and better understand quotes for work. TasNetworks is considering options to improve connection services, including making connection services contestable.

The COAG Energy Council (CEC) is currently looking at building a 'national contestability framework for electricity and gas distribution network connections'. Contestability is available in New South Wales with other states exploring the option. This could help create greater competition for these services, including greater private sector activity in Tasmania. Some contestability is already available for transmission assets in Tasmania, with further reforms being considered nationally to further increase contestability.

Another issue in terms of network pricing is the introduction of Inter-regional transmission use of system charges which commence from 1 July 2015. These charges will create some volatility in network charges depending on the net import or export of energy. In the case where Tasmania is a net importer, an inter-regional charge will be paid to Victoria. Conversely net exports from Tasmania will result in Victoria paying an inter-regional charge for the use of Tasmania's transmission assets. While price uncertainty may increase, the outcome should be a fairer sharing of the costs by customers across NEM regions.

Recently TasNetworks has decided to begin the process to align the distribution and transmission businesses regulatory reset period from 2019. This alignment will allow TasNetworks to concentrate on a single reset and allow greater focus on managing strategic projects outside the reset period, which should create efficiencies that can be passed onto customers. Further, the reclassification of some transmission infrastructure as distribution infrastructure may allow for efficiencies to be found in terms of the application of reliability standards. This may best be considered by TasNetworks once the transmission and distribution revenue periods are aligned.

4.2.2. Cost reflective pricing

Network tariff arrangements for residential and most small business electricity consumers do not provide a price signal that adequately reflects the costs of supply. This results in distortions with some consumer groups subsidising others, and inappropriate signals being sent to consumers. The main cost for networks is not the total power consumed but how much power is consumed at peak times. The national market is making the transition to more cost reflective tariffs, which may in part address some of these anomalies.

There is a strong push nationally toward the greater use of cost reflective tariffs to improve the efficiency of the electricity supply chain (ultimately resulting in downward pressure on prices) and minimise unfair cross subsidies between consumers.

The AEMC is currently finalising rules to ensure distributors provide tariffs that reflect the cost of the networks and also provide price signals to assist in lowering future network costs. The Government is supportive of the case for cost reflective tariffs and believe this will help reduce prices in the longer term, as well as ensure all customers pay an equitable amount for their electricity supply.

Cost reflective tariffs

Existing electricity prices comprise of a fixed daily charge and a variable energy charge. The variable energy charge is applied at a flat rate so customers pay the same amount for the electricity regardless of when they are using that energy. This provides the customer with no incentive to shift usage to periods of low demand as a customer using electricity at peak prices will pay the same as someone using it on weekends or late at night. Cost reflective tariffs such as 'time of use' or 'capacity' tariffs will have different prices depending on the time of day that electricity is used. This sends a price signal to consumers to shift their usage from peak periods. As a significant cost of energy is associated with building networks to cope with relatively small periods of peak demand, spreading load reduces the need for network upgrades.

A common concern associated with time of use tariffs is that they disadvantage low income households. Economists at AGL Energy recently examined data from 160 000 smart meter households in Victoria and found that households in financial hardship are the most adversely affected by flat tariffs structures by comparison to more cost -reflective tariffs.

Cost reflective tariffs can be more effective when coupled with more sophisticated meters (smart meters) than are currently installed, as well as effective consumer education. Victoria had a mandated roll-out of smart meters but most other jurisdictions have adopted a market-led approach. The Government is supportive of any take up of smart meters being consumer-led and driven by customer demand, and will be closely monitoring national developments relating to this issue in the coming years.

Smart meters

Smart meters record energy consumption on a near real time interval basis (every half hour) and have communication technology that allows this data to be retrieved remotely. Depending on its functionality, a smart meter system can provide other services to the customer such as new tariffs, information on electricity usage and pre-payment (PAYG). Similarly smart meters can assist in managing the network through functions such as quality of supply detection, neutral safety detection and outage notification.

There are examples of successful market-driven roll outs of smart meters, such as in New Zealand. The business case was based on achieving the savings from unaccounted for energy loss, manual meter read, meter leasing, automated disconnection/ reconnection, reduced administrative costs, reduced call centre volume from fewer errors and reduced nontechnical losses. These savings equated to the costs of the new smart metering installation.

4.2.3. Ensuring State-owned electricity businesses are efficient

The Government owns a diverse portfolio of businesses that are expected to operate on a commercial basis, including three State-owned electricity businesses. The Government owns the businesses for a range of reasons, including the need to ensure the continued provision of important or essential services to the Tasmanian community and to deliver on particular policy objectives. While it is vital that these services are delivered at the lowest sustainable cost and in an efficient and effective manner, an appropriate financial return should also be provided to the Government.

In this regard, the Government recognises that the past performance of its Government businesses portfolio has generally been mixed. This has been an issue for the wider Government businesses portfolio and is not limited to the electricity businesses. The returns from the Government business portfolio have been well below the returns that could be expected from commercial businesses, which have generally provided a return on equity that is below the risk free rate.

There has also been significant confusion within the businesses as to their objectives, focus and an understanding of an appropriate risk appetite for a Government-owned business. Many of the businesses have pursued activities outside of their core business or outside of the activities for which they were established.

Accordingly, in the 2014-15 Budget, the performance of Government businesses was explicitly identified in the Fiscal Strategy with the aim of creating efficiencies and better allocating public resources to gain the maximum community benefit. The Government has introduced a number of measures to improve the reporting and public transparency of Government business decisions and to ensure that boards and management teams are held more accountable for their decisions. The Government has written to the boards of each Government business to provide clear directions and clarity on the Government's expectations, as Shareholder, particularly in relation to the expected returns from the businesses, as well as ensuring that any non-commercial expectations are clearly defined.

A number of recommendations of the Electricity Supply Industry Expert Panel in relation to Governance issues have also been taken into account in development of the Energy Strategy. The Expert Panel's recommendations were:

- clearer Shareholder ownership objectives;
- stronger Shareholder focus on business performance;
- effective Shareholder oversight and strategic energy policy functions;
- enhanced public reporting and accountability;
- transparent identification, delivery and funding of all non-commercial activities; and
- confidence in the independence of regulatory processes.²

Government has a particularly important role to play as shareholder in setting expectations for the businesses, including in relation to cost, service and rates of return.

In relation to the State-owned electricity businesses, a number of initiatives have been implemented in recent times, both at an industry level and within each business, to improve their financial performance and deliver benefits to the Tasmanian community.

At a national level, in response to significant public concerns in relation to electricity price increases over a sustained period, the AER in 2013 undertook a better regulation program to enhance its approach to network regulation, guided by the principles that economic regulation should be incentive-based and necessary and efficient investment should be encouraged. As part of this program, a number of important measures have been established, including a revised approach for determining the return that network businesses can earn on their investments, annual reporting on network

² Electricity Supply Industry Expert Panel. An Independent Review of the Tasmanian Electricity Supply Industry Final Report Volume 1 (page 45). March 2012.



business efficiency, new tools for assessing business forecasts of required expenditure, stronger incentives on businesses to spend efficiently, and implementation of a strengthened performance benchmarking framework.

While section 4.1.2 notes that regulation comes at a price and should be maintained at the minimum necessary level, the recent performance of network businesses and the price outcomes for customers would appear to warrant improved reporting and disclosure obligations on network businesses.

A number of efficiency programs have been implemented within the State-owned electricity businesses themselves. For example, Aurora Energy has recently transformed itself into a low-cost retailer that has a strong focus on cost management to ensure competitiveness with new entrant retailers.

Similarly, TasNetworks is currently preparing a transformation plan that, amongst other things, is expected to realise the operational and financial benefits of the synergies gained from being a single network business. This will be in addition to the operating efficiencies previously implemented in the distribution business when it was part of Aurora Energy. TasNetworks' recent submission to the AER has forecast total transmission capital expenditure over the current regulatory control period (2014-15 to 2018-19) which is expected to be 57 per cent less than the five year average over the previous period (2009-10 to 2013-14). The submission also proposed a material deferral of depreciation costs to manage price impacts and continued reductions in operating costs. This follows on from a substantial reduction in capital expenditure in

2012-13 and 2013-14 which saw Transend under recover revenue by \$37 million, and the withdrawal of a cost pass through application to recover \$34 million for full retail contestability costs.

Hydro Tasmania has been rapidly expanding over the past few years with increases in operating costs and employment numbers, with some of this attributable to the growth in Momentum Energy. Hydro Tasmania announced in June this year that it would reduce its workforce by nine per cent and pursue additional strategies to further reduce costs.

Despite these recent and encouraging improvements, the Government recognises that each business can further improve efficiency and performance. In addition to the measures being implemented for the broader Government business portfolio, a number of specific expectations have been established for each State-owned electricity business. For example, Aurora Energy and TasNetworks are expected to continue to find and implement operating efficiencies.

The Government has also committed to work with Hydro Tasmania to review its strategic direction and ensure a stronger and efficient focus on its generation business in Tasmania and that it is in a position to deliver returns to Government over the Budget and Forward Estimates period. Given the significant debt in both TasNetworks and Hydro Tasmania, a capital structure review is being undertaken by the Government to ensure that the businesses have the most appropriate capital structures to deliver on the Government's vision.

4.2.4. Actions – reducing the cost of delivering energy

Number	Action	Timeframe
22	Government-owned energy businesses will adopt 2014-15 Budget policies, as outlined in the Fiscal Strategy Chapter of Budget Paper no. 1, for all Government owned businesses.	Immediate
23	Government will work closely with the three electricity businesses to drive ongoing efficiency improvements. Targeted efficiency frameworks and measures, including cost, service and rates of return for each business will be established through the annual SCI process.	2015/16
24	Strengthen the oversight of energy business Board performance by Ministers.	Immediate
25	Clearly set out roles and expectations of the Government's energy businesses, with capital structures and risk appetite statements set accordingly.	2015/16
26	Ensure that Government Departmental arrangements allow for effective, efficient and consistent development and delivery of energy policy, including reviewing Electricity Supply Industry legislation to ensure it remains contemporary.	2015/16
27	Review the current network planning and demand forecast arrangements and consider potential alternatives in an effort to ensure efficient network costs while ensuring reliability is not compromised.	2015/16
28	Review network customer connection outcomes to identify opportunities for reform.	2016/17
29	Align transmission and distribution regulatory periods.	2018/19

4.3. Positioning Tasmania for the future

The Government is committed to an energy sector that is an enabler for the Tasmanian economy. Historically, energy development was dominated by the hydro-industrialisation era which supported the growth of the Tasmanian economy into a 'modern' economy, in the post Second World War era in particular. However, the maturity of the Tasmanian economy and its structure (with a growing services sector) means that the role of energy in supporting economic development is different from what it once was.

In particular in the current market environment, ensuring our existing energy assets are optimised is likely to create better economic outcomes for the State compared with significant new investments. That is not to say there is no case for new investments and, in particular, this should predominantly be the role of the private sector to drive. Put simply, the role of Government was once 'builder', but today it is a 'facilitator' or 'enabler'.

The following are the key areas and actions the Government will take to use energy to position the State for the future and enable economic development.

4.3.1. Retaining existing businesses and attracting new load

Around 55 per cent of the State's electricity is consumed by just four large industrial customers. The closure of one of these industrial facilities would have an adverse impact on all

Hydro-industrialisation

This year Hydro Tasmania is celebrating its 100th year of operation. The history of 'the Hydro' is intertwined with Tasmania's industrial, economic, geographic and cultural development. Many fondly recall the days of 'hydro-industrialisation' when industry boomed, attracted to Tasmania by 'cheap power' and yearn for a return to the 'good old days'. The mythologising of this era inevitably leads to calls to "dam the Franklin" whenever power prices increase. The truth is more complex. Up until relatively recent times, the old Hydro-Electric Commission was essentially run as a Government department and, unlike today as found by the Expert Panel, the power provided to industrial customers was subsidised rather than cheap. This approach was accepted as a way to encourage modernisation of the economy and was not unique to Tasmania. The State is now inter-connected with the National Electricity Market and exposed to market forces. This connection has ensured that customer prices are reflective of market prices and are not subsidised. To attract new industries Tasmania will likely need a combination of factors rather than simply the lure of artificially cheap prices.

consumers as costs would need to be recovered from fewer users. Due to the significant value of these customers to the Tasmanian economy, the Government will continue to work with them to simplify their energy procurement arrangements and create the environment to retain, and where possible, encourage expansion of these customers for the longer term.

Transformational changes by major energy customers

In recent years the price paid by Tasmania's energy intensive industrial customers for delivered electricity increased materially. Coupled with depressed commodity prices and a high exchange rate, most of these customers have had 'near death' experiences and have been required to make transformational changes to stave off the threat of closure. These businesses were able to survive by working with supportive employees and suppliers to make some very difficult choices in order to survive. These choices included pay freezes, workforce restructuring, employee reductions (in some cases up to 20 per cent of employees), asset rationalisation, and significant cost and capital productivity gains with existing assets. Transformation was not an option but a necessary business response to realign cost structures and efficiencies to volatile market and macro-economic conditions in order to support a sustainable future.

To help mitigate the risk of a loss of industrial load and create an environment which is more conducive to the development of more on-island generation, Tasmania needs to also attract new load and grow the energy productivity of existing customers.

In recent years, prospective developers of new industry have struggled to understand the complexities of the Tasmanian market and this has affected our competitiveness with other jurisdictions (both nationally and internationally). As more businesses see a strategic advantage in sourcing their energy from renewable sources, Tasmania should be more active in pursuing customers that value this attribute. Energy intensive industries that may be attracted to Tasmania could include data centres, silica smelters, food processing, and irrigated cropping, to name but a few. Emerging technologies such as electric vehicles may also create future opportunities for load growth.

The Government has established the Office of Coordinator-General as a 'one stop shop' to reduce the complexity of doing business in Tasmania, and this includes dealing with electricity market and other planning factors in Tasmania. This Office

will actively target industries by developing a prospectus for each industry rather than adopting a passive approach, and will be well placed to coordinate efforts with local planning requirements, transport infrastructure and resource supply.

New customers and load growth can be facilitated through the provision of better information regarding available network capacity and improved planning processes. This also has the benefit of improving the overall efficiency of electricity supply and, therefore, the costs to all consumers. Furthermore, providing predictable energy prices for delivered energy (both wholesale energy and network components – a 'block' of delivered energy) could enhance Tasmania's attractiveness.

4.3.2. Renewable energy – future on-island generation and export opportunities

The Government sees value in the current renewable energy capability in Tasmania and the potential for this capability to be valued more highly in the future. However, the current market conditions associated with oversupply in the NEM make the business case for more generation in Tasmania challenging. The Government is a strong supporter of the Renewable Energy Target as a policy to allow Tasmania to take advantage of its renewable energy capabilities.

In time, the pre-conditions for more on-island generation and possibly a second interconnector may eventuate, and Tasmania should be prepared to quickly take advantage of rapid changes in the market as and when they eventuate. A key part of this strategic planning is ensuring Tasmania is well placed to take advantage of global trends toward less emissions intensive electricity generation. Any future development must be predicated on sound commercial business cases based on the underlying market conditions. For this reason, the Government will undertake preliminary work on the development of a second interconnector, to enable prompt action when the underlying market conditions arise. Further generation, including development of additional wind generation, will need to be in response to market needs, and be funded by the beneficiaries.

Tasmania needs to learn from past experiences and avoid building infrastructure that does not deliver an appropriate return to its shareholders, or create long term economic benefits for the community. Given there are numerous private companies that are capable of developing new generation projects and the already high participation by the Government sector in the Tasmanian economy, it is questionable whether Tasmania's State-owned energy businesses should be competing against the private sector to develop new projects, particularly where there is considerable exposure to regulatory and market risk.

While currently the case for more on-island generation is difficult, Tasmania has built up a wealth of expertise in renewable energy developments and innovation. As the world transitions toward less emissions intensive electricity generation, this expertise and the associated skills will increasingly be valued and sought after. This could create a growing export market for Tasmania, and particularly for businesses that can offer renewable energy services.

One prospect for on-island development may be bio-fuel, taking advantage of Tasmania's forest, cropping and weed residues. The Government is already supporting investigations of bio-fuel prospects (these are discussed in section 4.3.4).

An issue for Government to consider is the technical ability of the Tasmanian electricity system to manage some of the anticipated changes, such as the continued uptake of solar PV and other forms of embedded generation, and the emergence of battery technology and electric vehicles. While these technologies and associated opportunities create an exciting future in terms of consumer choice and potential lower bills, understanding the issues in interconnecting these technologies to the existing energy system is a challenge that will need to be managed. Developments in metering arrangements and new technologies should also support new innovations in electric vehicles.

4.3.3. Gas

Gas is an important part of the fuel mix in Tasmania and has been adopted as a fuel of choice by many households and businesses, large and small. It can have a cost advantage over other fuel sources where a commercial or industrial heat load is required. As a result, almost all large customers that require a heat load have been connected. Notwithstanding this, the gas network is underutilised and it has the capacity to serve many more customers (it was originally envisaged that the distribution network would pass 100 000 premises rather than the 50 000 it currently passes). The initial roll-out was supported by Government funding and as Tasmania has very limited capacity to underwrite a further large scale roll-out, the immediate opportunities for growing the network is to assist the gas industry to identify and support local extensions so more households and businesses have access to this fuel source.

It is in the interests of all customers and market participants to sustainably grow Tasmania's gas industry as this spreads the fixed costs of operating the system over a bigger customer base.

Achieving further significant growth may be challenging as the gas industry faces future challenges, including the forecast increase in gas commodity prices. However, the impact of commodity price increases needs to be properly understood. Furthermore, gas access, particularly competitive terms and conditions, is likely to be a higher priority in Tasmania than gas hub trading is in other states and, if addressed, should assist the competitiveness of gas as a fuel choice.

When the regulatory regime for gas was developed early last decade, it was presumed that it would be a product of choice, and that a 'light-handed' regulatory model would be appropriate. Important protections for small customers were included, but some issues have arisen in relation to vulnerable customers (particularly the ability to obtain supply).

Gas pricing for residential customers

Historically Australia's eastern and southern states have enjoyed an abundance of gas with a very low and stable commodity price. The rapid development of the LNG industry in Queensland has led to a significant increase in demand for gas and has put significant upward pressure on gas commodity pricing, and the media often refer to a doubling or more of gas prices. This does not mean that gas pricing for residential customers is likely to dramatically increase, as the commodity component of a typical gas bill for residential users is only about 20 per cent of the overall cost. Transmission, distribution and retail costs make up 80 per cent of the bill. Therefore in a scenario of a 100 per cent increase in the commodity price, retail prices would only increase by 20 per cent, if all other components stayed the same. For Tasmanian households and small to medium businesses, gas prices are expected to increase moderately over the next four years. Despite these increases gas is expected to remain an attractive energy option.



4.3.4. Bio-fuel

Although liquid fuels, hydro-electricity and gas are the dominant fuel sources, bio-fuels are becoming an increasingly viable alternative fuel sources. The bioenergy sector includes a range of rapidly expanding technologies for transforming biomass into energy. Biomass comes in a wide variety of forms, including wood residues from forestry processing and by-products from agricultural cropping and processing. As Tasmania has a large forest resource, including both native forest and plantations (and has challenges commercially utilising forest residues), along with a well-established and growing agricultural sector, there are a number of potential opportunities for Tasmania in the bioenergy sector.

Bioenergy generally falls into two main sectors. The first is the burning of solid biomass for energy production, including heating and electricity, which generally involves the processing of biomass into more concentrated forms, such as wood pellets or torrefied pellets. The second is the rapidly expanding sector of bio-fuels, which produces liquid fuels from biomass. There are a number of technologies currently available, producing a range of bio-fuels, including bio-diesel, ethanol and pyrolysis oil. One particular emerging technology is fast pyrolysis, which is capable of producing hydrocarbon fuels substitutable for existing petrol or other transport fuels.

The Government is working with industry to investigate a number of opportunities for bioenergy in Tasmania. In partnership with industry and local government, the

Government has committed \$200 000 in funding to continue existing investigations of bio-fuels in the Dorset and Huon regions. Additionally, the Government is investigating the potential of a range of future markets for forest residues, including biomass for heating and energy purposes, as well as for biofuels. Specifically, \$550 000 has been committed to pursue the production of bioenergy and 'clean technology' materials from forestry and farm sourced biomass residues as part of the Government's AgriVision 2050 plan.

Turning environmental weeds into briquettes

Some local entrepreneurs have been investigating how to harvest the invasive gorse bush from Tasmanian farms and turning this into a product that can be used to heat homes. Early indications suggest that this product will comply with environmental guidelines and operate on a commercial basis.

One large Tasmanian consumer has recently started using wood waste in lieu of gas and another has substituted pyrethrum marc in lieu of imported coal briquettes. Other businesses are investigating recovering energy from old tyres and turning environmental weeds into briquettes.

4.3.5. Smart network solutions

The electricity network needs to have sufficient capacity to reliably supply electricity to consumers during periods of peak demand. Addressing areas of network constraint was a major driver of network investment and overall electricity costs faced by consumers. Traditionally any areas of constraint have been addressed by building additional poles and wires. However this is not always the most cost effective solution and other non-network solutions may be more appropriate. For example, TasNetworks have used an innovative system protection system, dynamic ratings of lines, smarter technologies and embedded generation to delay or avoid such investment.

Bruny Island as an example of non-network solution to network constraint

Bruny Island is serviced by two under-sea cables which were installed in the early 1950s and are unable to reliably supply electricity during the peak Christmas and Easter holiday periods. Replacing the cables would be very expensive and a more cost effective solution has been successfully used since 2012 where mobile generation units meet the peak holiday load requirements and prevent any over-load on the under-sea cables, thereby prolonging the life of the cables.

A smarter electricity network has the potential to significantly improve operational efficiency. For example, at present, faults in the network often need to be manually located and rectified. Smarter network technology can automate this process resulting in increased operational efficiency and improved customer reliability. Any expected network constraints can be managed by a range of options including battery storage, embedded generation and network upgrades to drive a lower cost outcome. Ultimately intelligent networks and solutions are expected to lower cost through addressing the paradigm of simply 'build more and bigger networks' to managing both supply and demand side options to deliver cost effective and reliable electricity supply.

4.3.6. The future of energy and positioning Tasmania for advantage

Until recent times, energy was something most people and many businesses did not have a strong interest in. Today, after a sustained period of electricity price increases almost everyone has a view on energy. Predicting the future is a challenge but some common themes are beginning to emerge about how the industry may look in the future.

The traditional utility model of electricity supply was a large power station located close to its fuel source connected to consumers by a network where energy flowed one way. This centralised model is being challenged as distributed generation, mainly in the form of solar PV, has placed this business model under pressure. It is likely to be under even more pressure as solar PV and other forms of embedded generation and battery technology continue to fall in price and become more efficient.

Other technological developments such as electric vehicles with storage capabilities, smart meters and smart grids will also transform the industry and attract new entrants. Data content and services will become increasingly important – AusNet Services in Victoria has 600 000 smart meters which feed 300 million rows of new data every day, enabling that company to better identify inefficiencies for customers and the network as a whole.

Consumers are embracing, and appear likely to continue to embrace, these new technologies that allow them to control supply, usage and costs. The retailer of the future will be many and varied, as telecommunication companies, internet service providers, insurance companies, major mainstream retailers such as grocery chains and department stores, and other technology players are expected to bundle product and service offerings in a very competitive market.

In short, it is a market experiencing and facing future, inherent risks that, in Tasmania under continued Government ownership, means those risks are borne by Tasmanian taxpayers. Governments now and into the future will need to closely monitor and be responsive to evolving markets, and strategically consider options that are in the best interests of taxpayers and consumers.

It is in this context that the Energy Strategy lays out a plan to once again make energy a competitive advantage for Tasmania. This will be pursued through making the most of future opportunities particularly where they are unique to Tasmania and provide market differentiation.

In summary, the key opportunities for Tasmania include:

- adopting additional measures to ensure that our State-owned energy businesses are being run as efficiently as possible in order to put further downward pressure on electricity prices;
- developing new policies that support and facilitate improved energy efficiency for Tasmanian households and businesses;
- monitoring pricing and regulatory frameworks to ensure that they are efficient and able to deliver affordable, predictable and sustainable outcomes that support State growth;
- identifying new opportunities to better utilise Tasmania's energy investments to retain existing industry as well to attract new businesses and industry to the State;
- enabling consumers, both households and businesses, to have greater choices of products and services, through encouraging competition within and between energy sources;
- removing impediments to the take up of emerging technologies and services; and
- positioning Tasmania to take further advantage of our significant renewable energy resources as the push for a lower emissions future becomes stronger, such as through prudent planning for a second Bass Strait interconnector and expansion of Tasmanian hydro generation output by 10 per cent.



4.3.7. Actions – positioning Tasmania for the future

Number	Action	Timeframe
30	Develop a heat map of Tasmania's electricity network which identifies areas of spare network capacity, for use as a planning tool by prospective developers.	2015/16
31	Identify target industries for load growth and develop a prospectus for each industry which includes provision of all key information in regard to energy (and other required services) and optimal site locations.	2015/16
32	Investigate improvement of local planning processes (in consultation with the Local Government Association of Tasmania and the Tasmanian Planning Commission) to include consideration of the impact of developments on energy networks. This could include greater information sharing and co-operation between local councils and network entities.	2016/17
33	Ensure Government has a contemporary retention of major businesses strategy which includes evaluating the merits of Government activity aimed at attracting new businesses versus retaining existing ones.	2014/15-2015/16
34	Evaluate the potential for Tasmania to offer major energy intensive businesses a block of delivered energy at certain long term prices, which could provide those businesses with the predictability of a major input cost to support current and new investments.	2014/15
35	Assess the impacts of additional renewable generation (wind, photovoltaics and other forms of renewables) on the Tasmanian electricity network.	Ongoing
36	Identify the necessary pre-conditions for increasing Tasmanian hydro generation output by 10 per cent (in collaboration with Hydro Tasmania).	2015/16
37	Identify the necessary pre-conditions for a second electricity interconnector across Bass Strait to be viable.	2015/16
38	Facilitate commercial development of forest residues through scoping and feasibility studies and seed funding (\$550 000 over four years) to deliver forest residue solutions, such as biofuels, as well as engineered wood and carbon products	2014/15-2018/19
39	Partner with industry and/or local government on a dollar-for-dollar basis to build on the work on bio-fuels that has already been undertaken in the Dorset and Huon municipalities (\$200 000 over two years).	2014/15-2015/16
40	Develop scenarios of possible energy futures and review strategy and actions against those scenarios, so that they can be adapted rapidly against actual market changes.	2015/16
41	Monitor Tasmania's level of energy security in regard to current and projected demand scenarios, considering all forms of energy supply and their existing and projected capacities.	Ongoing
42	Actively monitor and analyse potential future shifts in energy technologies and services that may impact on how energy is supplied and used, particularly in the context of what challenges and opportunities they may present for Tasmania including potential impacts on the enterprise value of Government-owned energy businesses.	2015/16-2017/18
43	Analyse the impacts of increasing levels of embedded generation, storage and demand side technologies on the electricity network and develop recommendations and plans to help ameliorate negative impacts and appropriately capture positive impacts.	2015/16
44	Design and implement a small-scale electric vehicle demonstration program	2015/16-2017/18
45	Review policy and regulatory settings to enable an effective market lead roll out of electric vehicles in Tasmania.	2018/19
46	Develop key performance indicators for the Energy Strategy to measure progress against the outcomes, to be reported for the first review of the Strategy.	2018-19

5. Next steps

The Government welcomes stakeholder and community views, and will take them into account in the finalisation of the Strategy.

Submissions will be published on the Department of State Growth website. The Department may decline to publish certain submissions (or parts of submissions) where there are issues concerning appropriateness or confidentiality. If the author of a submission wishes to exercise confidentiality in relation to a submission or a part of a submission, this should be clearly indicated, and will be respected. Where only parts of a submission are requested to be confidential, they should be submitted as an attachment to that part suitable for publication.

To facilitate the publication of submissions on the website, submissions should be electronic where possible.

Submissions should be lodged by Sunday, 15 February 2015, and may be emailed to:

energystrategy@stategrowth.tas.gov.au

or posted to:

Energy Strategy Submissions
Department of State Growth
GPO Box 536
Hobart TAS 7001

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Department of State Growth

GPO Box 536
Hobart TAS 7001 Australia

Phone: 1800 030 688

Fax: (03) 6233 5800

Email: info@stategrowth.tas.gov.au

Web: www.stategrowth.tas.gov.au