



# Tasmanian Renewable Energy Alliance

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## Submission to the Tasmanian Energy Security Taskforce

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### Overview

TREA welcomes the opportunity to comment on the important issues raised by the terms of reference and the Consultation Paper ('Paper') of August 2016 produced by the Tasmanian Energy Security Taskforce ('Taskforce').

The Taskforce process has the potential to contribute greatly to the understanding of the challenges of energy security in Tasmania. We urge the Taskforce to use its draft report to produce a challenging set of scenarios that can help illuminate the linked challenges of energy security and energy affordability in the context of both responding to the impacts of climate change and reducing future greenhouse gas emissions.

To cope with an increasingly unpredictable future Tasmania should be planning for a robust and decentralised energy system which has a diversity of renewable energy sources. Planning should emphasise energy efficiency and demand management to match supply and demand in the most cost effective way.

### Scope

We are aware that the Taskforce was set up as a response to the electricity supply challenges resulting from the coincidence of low dam levels and the extended Basslink outage. However as the Consultation Paper notes, consideration of electricity supply in Tasmania cannot be separated from the issues of gas supply and cost, the management of our water resources and consideration of the impact of climate change.

The Paper distinguishes stationary energy from transport energy but in fact the terms of references and the consultation paper focus almost exclusively on the electricity component of stationary energy, and exclude consideration of gas, coal and firewood as energy sources. These other sources make up approximately half of all primary energy use in industry. In the residential sector, more primary energy comes from wood than from electricity<sup>1</sup>.

The terms of reference include consideration of "the potential impact of climate change on energy security and supply" but the paper considers climate change only in relation to its effect on rainfall. As discussed in the section below, we think climate change has many other potential impacts on energy policy for Tasmania.

### Clarifying what we mean by energy security

We encourage the Taskforce to explore in more detail the various aspects of what is meant by "energy security" as we believe the various aspects are conflated in the Consultation Paper.

**Electricity reliability:** Localised electricity supply problems, typically caused by weather events impacting the distribution network are a significant problem in parts of Tasmania, however there are adequate existing frameworks in place to address the cost versus reliability trade-offs in addressing this problem.

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<sup>1</sup> Estimates based on Figure 1.2 on p.3 of Energy in Tasmania – Performance Report 2014-15.

**Physical supply:** As the Paper notes (p.6) the supply of electricity was maintained during the recent crisis. Objectively viewed we believe there are other scenarios that pose a bigger risk of absolute inability to meet energy supply. Our diversified hydro infrastructure and the potential to import via Basslink, as well as gas fired generation actually make our electricity supply quite robust, recent event notwithstanding. Tasmania's almost total reliance on imported transport fuels with long supply chains means that supply disruptions caused by technical failure or geo-political factors could have a much faster and more dramatic impact on the Tasmanian economy. Gas supplies a much smaller part of our total energy consumption, but is even more prone to a single technical failure which would have a major impact on those industrial users who cannot easily switch to an alternative fuel, as well as on household dependent on the gas network for cooking, heating or hot water.

**Affordability:** Energy security needs to be assessed in a social context as well as the technical aspect of supply certainty. The cost of energy supply is a fundamental concern to both households and businesses. While electricity supply was maintained during the crisis, the cost of doing so is ultimately borne by the consumer or the taxpayer. As we argued in our submission to the Public Accounts Committee (TREA 2016) a lack of public information about the costs of the government's Energy Supply Plan and the costs of alternative solutions means that there is no public accountability as to whether the crisis was dealt with in the most cost effective way.

**Public confidence:** Although physical supply was maintained during the recent crisis, it clearly had an impact on the public's faith in the reliability of supply and in confidence in the business community that a reliable, affordable supply of energy was assured. Active engagement of the public in energy policy development can help in rebuilding public confidence.

## Responses to questions in the consultation paper

**Q 1: What are the specific risks to Tasmanian energy security that you think the Taskforce should consider?**

- Physical failure or long term interruption to the gas supply infrastructure.
- Market failure of the gas industry. Reduced demand leads to increased prices which lead to a further downward spiral in consumption.
- Various threats to the reliable supply of transport fuel.
- Another extended Basslink failure.

**Q.4: How well are Tasmania's energy security risks understood and communicated to the community?**

As argued above, there is not sufficient understanding in the general public of the various aspects of energy security risks. The Taskforce could play an important role in explaining these issues so that the public is better able to be involved in the decisions about acceptable risk and the most effective ways to minimise risk.

**Q.6: Which potential energy security solutions should the Taskforce consider?**

The history of the energy industry in Tasmania contains many examples of the risks of relying on large infrastructure investments to deal with energy supply. Projects such as the original Basslink, the Bell Bay oil-fired power station, and the Tasmanian Gas Pipeline have often involved greater expenditure than expected, a significant level of underwriting by government and GBEs and have delivered less benefit than were claimed when they were instigated. There is a danger of this pattern being repeated with the proposed second interconnector and the calls for more support from the government to underwrite the gas market.

The Taskforce should develop and cost a scenario which meets the need to ensure affordable and reliable electricity supply through a combination of:

- Encouraging private investment in wind farm development through reverse auctions.
- Supporting private residential and commercial investment in solar PV and storage, with mechanisms such as locational feed-in tariffs and grid support payments which encourage additional generation in locations in which it benefits both the owner and the grid.
- Policies which actively encourage energy efficiency and demand management.

**Q.9: What economic opportunities and risks are there for Tasmania associated with a second Bass Strait interconnector, and how would it improve Tasmania's energy security?**

A second interconnector is likely to be cost effective only under one or a combination of the following circumstances:

- Strong national incentives are put in place to increase renewable energy generation which have bipartisan support and are guaranteed to remain in place for several decades. Large scale wind development in Tasmania supported by a second interconnector to allow additional export may then be viable. This would still require that the cost of the interconnector was more than offset by the benefits of locating wind farms in Tasmania rather than the mainland.
- One or more major industrial customers cease operation and there is surplus generating capacity which exceeds the capacity of the existing Basslink cable to export.

If a second interconnector was viable for the above reasons, it would have a side benefit of increasing security of electricity supply. However these circumstances are largely unpredictable and outside the control of the Tasmanian government. On current evidence we do not believe that support for a second interconnector is an effective way for Tasmania to increase its energy security.

We look forward to the final report of the Commonwealth/Tasmanian feasibility study in the hope that it will provide more information on these issues. The Taskforce could contribute to this investigation by modelling what level of additional export could be managed by the existing Basslink cable in the context of either an energy surplus from new renewable energy generation, or a major reduction in demand as a result of closure of a major industrial customer.

**Q.12: How could the potential expansion of renewable energy generation in Tasmania help long term energy security without creating increased costs for consumers?**

Reverse auctions for wholesale electricity supply ensure that additional renewable electricity supply is brought on-line at the cheapest available price. It has the additional benefit that capital cost and risk is borne by the private developers rather than the taxpayer or the electricity consumer. In the recent ACT reverse auctions (Parkinson 2016), wholesale contract prices were fixed for 20 years which provides an additional benefit for consumers in reducing future price rises.

The combination of solar and local storage has the potential to increase generation and reduce costs for all customers if it is implemented in locations in which it can reduce the need for network upgrades.

**Q.13: Which renewable energy technologies and products present the best opportunity for Tasmania and why?**

In the short term the emphasis should be on wind farms to increase centralised supply and build up dam levels, and reduce reliance on Basslink. Solar plus storage should be encouraged where it has benefits to the network.

The Taskforce should liaise with ARENA to understand and explore the likely prospects and costs for wave and tidal energy for which we believe Tasmania is well placed.

**Q.14: Is there a limit on the level of intermittent renewable generation that Tasmania can sustain without affecting the reliability of the network, or requiring significant cost to strengthen the network?**

The operating flexibility provided by Tasmania's hydro system means that Tasmania is better placed than other states and territories to incorporate additional non-scheduled generation.

There is little evidence to date of significant network costs being incurred as a result of distributed generation anywhere in Australia. Tasmania has a lower penetration of distributed generation than Qld and we do not foresee significant problems in the short term.

Changes to inverter standards are already addressing some of the potential power quality issues associated with high penetrations of solar. Well designed incentives for grid connected distributed generation with storage will assist in making this a reliable and predictable source of generation.

**Q.15: Are there material barriers to the take up of emerging energy products and services in Tasmania?**

Under current NEM rules, some emerging energy products and services require the participation of an energy retailer to be implemented effectively. Despite the fact that legislative barriers to the entry of retailers have been removed, there remain significant market barriers to the entry of new retailers in Tasmania, particularly the small size of the market, the quasi-monopoly of Hydro Tasmania as a large scale generator and the relatively poor customer base. Despite these limitations, more encouragement from the state government might facilitate the entry of new retailers, particularly those offering niche services.

**Q.16: Is there a timeframe where renewable energy developments could be more favoured in Tasmania than elsewhere?**

Wind is currently more cost effective than solar for large scale generation, however costs are dropping more rapidly for solar than wind. Tasmania's wind resources makes it a prime location for new investment in renewable energy generation. However once solar farms become more cost effective than wind farms, investment in new generation will move to more northerly locations. The CEO of Infigen has recently stated that large-scale solar PV was not yet competitive with wind in Australia, but he expected this would change in the not-too-distant future (Vorrath 2016). This view has also been expressed by ACT Environment and Climate Change Minister Simon Corbell on the basis of the most recent ACT reverse auctions. He is quoted (Parkinson 2016) as saying that "Large scale solar prices have come [down] significantly, they are very close to wind prices and that is a very encouraging movement. There is no doubt that it is just a matter of time before large scale solar will match wind prices."

**Q.17: What impact will the national commitment to reduce carbon emissions have on renewable energy development in Tasmania and in the wider NEM?**

As argued in the Climate Change Authority Special Review: Minority Report (Hamilton & Karoly 2016), the current Commonwealth Government's commitment to reduce carbon emissions by 26-28% on 2005 levels is not consistent with the Paris Agreement to limit global warming to well below 2°C. An additional problem with the Commonwealth Government objective is that it does not set sector specific reductions for the electricity industry and the RET does not increase after 2020. It is therefore clear that current federal government policy will provide no incentive for renewable energy development in Tasmania.

However the need for serious action on climate change is overwhelming and the longer the delay in setting in place policies to meet this objective the more drastic the action will need to be. We therefore believe that the Taskforce should actively consider a scenario in which emergency action is taken to dramatically reduce carbon emissions, including a rapid shift to renewable electricity generation.

## **Energy efficiency and demand management**

The Consultation Paper is seriously deficient in not taking into account policies which reduce demand for electricity as a way of increasing energy security. As a result the discussion implies that energy security requires increasing supply to meet demand growth.

Energy efficiency and demand management are far more cost effective than increasing generation capacity and network capacity. This will become even more so as both the grid and customer installed infrastructure becomes smarter.

We acknowledge that the largest industrial customers are a major determinant of electricity demand in Tasmania but we believe the Taskforce should acknowledge and model the potential for policies that support energy efficiency and demand management to contribute to our energy security.

It is widely acknowledged that Tasmanian housing stock has poor energy efficiency. Programs to increase the efficiency of existing and new housing stock can contribute to reduced electricity demand, lower household energy costs as well as having additional health benefits for some of Tasmania's most vulnerable energy consumers.

The Taskforce's modelling of future demand should take as a baseline the demand reductions implied by the National Energy Productivity Plan (COAG EC 2015) objective of a 40% increase in energy productivity by 2030.

## The role of electricity tariffs

As a result of current NEM reforms there are moves to change electricity tariff structures to be more 'cost reflective'. This is encouraging moves to tariff structures that:

- increase fixed charges
- reduce energy charges
- base variable charges on demand rather than consumption.

While we understand the incentive to make tariffs more reflective of network costs, these changes have the potential to undermine the broader goals of reducing energy costs and increasing energy security. As we have argued in our submission to the TasNetworks Tariff Reform Working Group (TREA 2015), tariff structure changes have the potential to discourage energy efficiency and discourage investment in distributed generation including household and commercial PV.

The state government should instruct TasNetworks and Aurora Energy to ensure that moves to cost-reflective tariffs do not unintentionally reduce energy security by discouraging energy conservation and local generation.

## Scenario planning

Q.19: Are there other scenarios with energy security implications in Tasmania that the Taskforce should be considering?

We welcome the Taskforce's proposed consideration of scenarios as a way of scoping the potential range of situations that Tasmania might face in relation to energy security and energy policy in general.

We urge the Taskforce to work with groups in the community to develop a set of challenging scenarios that can be used for both public education and policy planning about the potential challenges that Tasmania might face.

The following examples are offered as a start on this process:

### A national emergency focus of reducing greenhouse gas emissions

Policies to meet the Paris Agreement objective of keeping global warming well below 2°C will require very dramatic cuts in emissions. If such policies were implemented in Australia, this could involve a rapid phase out of coal fired electricity generation. This in turn could lead to rapid expansion of wind power and the construction of a second interconnector. Tasmania acting as a 'battery' for the mainland grid could lead to much more aggressive operation of our hydro generation. This in turn may require work to ameliorate the environmental impact of more variable hydro flows and possibly the construction of pumped storage infrastructure.

### Collapse of the gas market

The recent report for the Tasmanian Small Business Council (Goanna 2016) describes the gas market in Tasmania as "potentially at risk of spiralling into failure" (p.4). The main problem faced by the gas market is small size of the market and the consequent fact that gas network costs are shared among a small number of customers. Distribution costs alone make up 48% of the small business retail gas price (Goanna 2016, p.10). Increasing gas commodity prices driven by international competition and policies to reduce fossil fuel use may contribute further to the non-viability of the gas market in Tasmania.

Hydro Tasmania and the state government have consistently stated that operation of the Tamar Valley Power Station (TVPS) is not the most cost effective way of generating electricity. However there is clearly pressure from major industrial customers for TVPS to be designated as a source of security of electricity supply which would help underpin the gas market.

Scenarios should explore the relative costs of the various proposals to prop up the gas market versus a planned move from gas to renewable sources for residential, commercial and industrial customers.

## Rapid transformative technological change

Costs for decentralised storage and electric vehicles are likely to drop rapidly in the next few years. The integration of solar PV, batteries in the home and in EVs, and home energy management systems may reach a point where it is cheaper for households to meet all their domestic and transport energy needs with little or no reliance on centralised generation and the distribution network. Significant numbers of households going off-grid would have major implications for the supply of affordable energy for those without the capacity to take up these options. Liebreich and McCrone (BNEF 2016) provide an explanation of how new technologies can interact and how the implications can lead to dramatic change in other aspects of society.

## Climate change

Q.18 Are there other climate change related implications for energy security in Tasmania?

### Population

The state government has a population target of 650,000 by 2050 and this should be factored into scenarios for future energy demand.

In addition current trajectories for the impact of climate change are likely to lead to significant population movements both nationally and internationally. Some of these will be forced as a result of climate driven extreme weather events, others will be more voluntary as many places become less desirable for human habitation. Tasmania is likely to become a relatively more desirable place to live as a result of these changes and the potential for very large population increases should also be factored into future scenarios.

### Resilience

Climate change has almost certainly contributed to recent extreme weather events in Tasmania including bushfires, floods and ocean warming. Climate change is likely to lead to greater unpredictability and disruption in the future.

Energy systems that are more decentralised and based on multiple energy sources can make communities more resilient and better able to cope with change and disruption.

It will become increasingly difficult to get long term (and bipartisan) stability that is necessary to finance and build big centralised investments in generation and transmission infrastructure.

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