



Tasmanian Energy Security Taskforce

Interim Report | December 2016
Executive Summary

Front Cover Photography:
Cape Grim – Richard Bennett
Nyrstar panorama – Brent Pearson
Gordon Dam – Sandessa Foster
Tarraleah Penstock – Sandessa Foster



Tasmanian Energy Security Taskforce
Interim Report Executive Summary | December 2016



Contents

Foreword	4
Executive Summary	5
Key Findings and Recommendations	8
Key findings	8
Priority Actions and Recommendations	12

Foreword

During 2015-16 Tasmania experienced one of the most significant energy security challenges in its history. The combined impact of two extreme events – record low rainfall during spring, combined with the Basslink interconnector being out of service – resulted in Hydro Tasmania’s water storage levels falling to historically low levels. An Energy Supply Plan (the Plan) was implemented that included the rapid commissioning of more than 200 MW of temporary diesel generation capacity. The Plan slowed the rate of decline in water storages through the dry period. Since May 2016 there has been heavy rainfall and water storages have risen to the mid 40 per cent range at the end of November 2016, from a low point of 12.5 per cent in late April 2016.

As a result of these events, and in parallel with the Plan, the Tasmanian Government established the Tasmanian Energy Security Taskforce (the Taskforce) to advise Government on how it can better prepare for and mitigate against the risk of future energy security threats.

The Taskforce has adopted an evidence-based approach to undertaking its energy security risk assessment. The findings and recommendations contained within the Interim Report have been developed on the basis of information made available to the Taskforce. While much of the Taskforce’s thinking has been guided by analysis undertaken by the Secretariat and the Taskforce’s external expert advisors, information provided by stakeholders has also played an important role.

The Taskforce released a Consultation Paper on 3 August 2016 seeking the views of stakeholders interested in the energy supply security challenges for Tasmania. Submissions were provided by large and small customer representatives, industry bodies and key energy sector participants. Across the 32 submissions received there have been useful insights and consistent messages against the Taskforce’s Terms of Reference that the Taskforce has taken into consideration when developing its assessments. The Taskforce is grateful to all who took the time to prepare a submission.

The Taskforce has also actively met with relevant stakeholders (including industry participants and customers or their representative organisations) and this has provided important information and context additional to what the Taskforce has learnt through the Consultation Paper process. The Taskforce appreciates the time and input that stakeholders have put into these meetings.

As required under its Terms of Reference, the Taskforce has provided the Interim Report to the Minister for Energy. It contains the Taskforce’s preliminary assessment of energy security now and into the future, having regard to the specific issues that its Terms of Reference require it to investigate, and includes initial findings and recommendations to the Tasmanian Government for actions to support Tasmania’s energy security, particularly focused on the short term. The Final Report, which is to be presented to the Minister for Energy within 12 months of the Taskforce’s establishment, will present the Taskforce’s final energy security assessment for Tasmania and recommend evidence-based solutions to strengthen Tasmania’s energy security in the medium to long term.

Executive Summary

From the outset the Taskforce makes it clear that energy security is the responsibility of the Tasmanian Government. The assessments and recommendations in the Interim Report are all provided within that context and they aim to strengthen the frameworks and more clearly articulate the roles of those charged with delivering the Government's responsibility to the community to maintain energy security.

The Taskforce's overall assessment of the current situation is that there are no immediate threats to energy security now that water storages have returned to higher levels and Basslink is back in service.

However, an examination of recent history reveals four energy security threats this century, with the recent 2015-16 situation being the most significant energy security risk to Tasmania since 1968. The Taskforce concludes that the incidence and the severity of these events calls for more conservative energy security settings. The Taskforce's consultation process also revealed heightened community concern and an appetite for a higher level of insurance to improve the security of energy supply.

Tasmania's energy system is unique in the National Electricity Market (NEM). It is characterised by having high capacity relative to peak demand, but being energy constrained. Hydro generation, Basslink, wind generation and the Tamar Valley Power Station (TVPS) are all options that Tasmania is afforded as to how it meets current and future energy demands, but due to the variability of rainfall, water storages prevail as the most important factor in setting Tasmania's energy security.

The Taskforce recommends five priority actions for the Tasmanian Government.

1. Define energy security and responsibilities.

- Several recommendations are provided to make roles and responsibilities absolutely clear.

2. Strengthen independent energy security monitoring and assessment.

- Energy security risk should be monitored and assessed by a capable independent body, with transparent public communication of risk status.
- The Taskforce expects that this could be achieved with a modest cost impost on the sector with no material pass through to customer prices.
- The Taskforce expects the roles, responsibilities and frameworks for monitoring and assessing energy security to be in place before it completes the Final Report and will comment on implementation progress at that time.

3. Establish a more rigorous and more widely understood framework for the management of water storages.

- A strong fundamental basis that makes water storage levels a function of energy security risk should be established. The Taskforce has recommended an Energy Security Risk Response Framework, which is depicted in Figure 1.
- Planning should be conducted with more conservative assumptions for rainfall variability and Basslink availability.
- It should be made clear when Hydro Tasmania can operate freely within its commercial interests and any occasions where it needs to take steps to redress/avoid energy security risks that are inconsistent with Government policy.
- Right now, Hydro Tasmania's targeted water storage levels of 30 per cent at the end of June and 40 per cent at the end of spring are appropriate, and whilst still subject to a full examination before the Final Report, the Taskforce assesses that storages should not be allowed to fall below those levels.

4. Retain the TVPS as a backup power station for the present and provide clarity to the Tasmanian gas market.

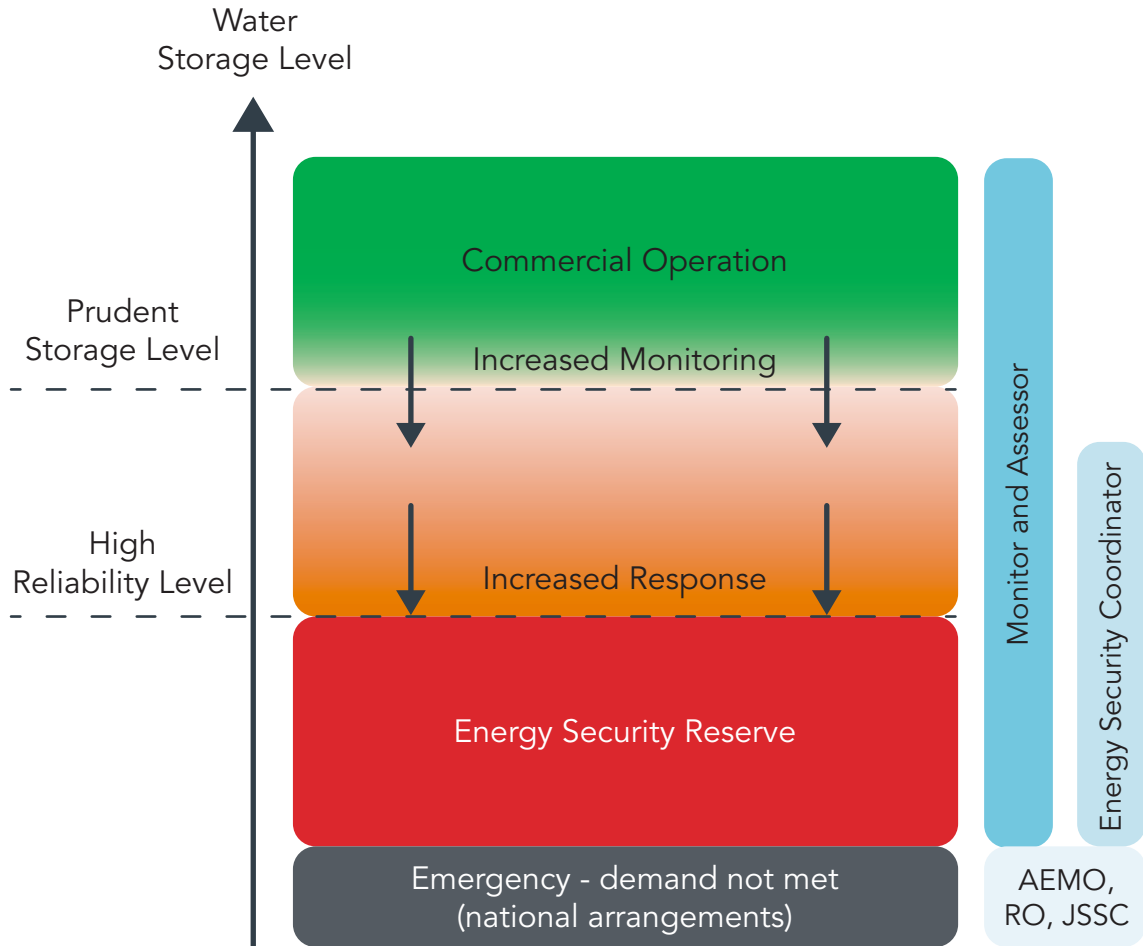
- The TVPS is currently required as a backup generator when Tasmania faces a prolonged low rainfall sequence and a six month Basslink outage. No matter that such concurrence is rare, from a risk management perspective, they are both credible scenarios.
- The transportation of gas to Tasmania is currently contracted until December 2017. Arrangements beyond that date are currently under negotiation. The Taskforce considers it important to see those arrangements in place before it completes the Final Report in June 2017, and usual commercial timeframes suggest this should be possible.
- Tasmania's other important gas users are most interested in this matter and it will be important to them that the direction this takes be known to the market before the end of March 2017.
- The long-term energy security need for the TVPS is less certain, especially where new generation is introduced, or a second interconnector is built, or there is a major downturn in demand. These scenarios will be modelled in the Final Report.

5. Support new on-island generation and customer innovation.

- Tasmania has a deficit of on-island hydro-electric and wind generation to on-island consumption of some 700 GWh to 1 000 GWh (approximately 7 per cent to 10 per cent) based on long-term average inflows. All other things being equal, a more secure setting would be created if this deficit was reduced or eliminated by new entrant renewable energy developments.
- New entrant developments should not face barriers to entry due to Tasmania's market structure and energy projects which are well progressed should not be delayed because of the Taskforce's work.
- Tasmania is an excellent test bed for energy innovation. The Taskforce considers that Tasmania's features make it ideal for private sector interests to partner with local businesses and researchers to trial new products and services, such as storage integration and electric vehicles.

Finally, the feasibility of a second interconnector is currently under review by a joint Australian and Tasmanian Government study and the outcome of that review will be available for inclusion in the Taskforce's Final Report. At this point, the Taskforce notes that a second interconnector would afford a substantial increase in Tasmania's energy security resilience and allow some other supply security measures to be set aside. However, these energy security attributes are unlikely to be the major commercial driver for a second interconnector, whereas the scope for a national impact from Tasmania's hydro-electric system and its renewable energy development potential is likely to be relatively more important.

Figure 1. Proposed Energy Security Risk Response Framework



Key Findings and Recommendations

KEY FINDINGS

Energy security in Tasmania

- As an island that is small in population and isolated from major markets, Tasmania needs to place additional emphasis on ensuring its energy security.
- Tasmanian demand is unusual in the NEM due to the substantial requirements of four large major industrial customers, who account for around 55 per cent of the State's electricity load.
- Because of the importance of energy security to households and businesses, the responsibility for energy security ultimately rests with Government.
- Energy security comes at a cost which is ultimately borne by Tasmanian consumers, either through the prices they pay or through the impact on the financial returns of Government businesses.
- Tasmania has experienced four energy security events this century that have been classed as low probability. This recent history indicates that two or more separate low probability events can occur within a short period.

Tasmania's energy system

- Tasmania's energy system is diverse, though dominated by hydro-electric generation (which represents three quarters of stationary energy use) and liquid fuels (for non-stationary/transport energy use).
- Tasmania's electrical energy system is energy constrained rather than capacity constrained – this means that Tasmania has sufficient generators to meet peak demand, but that the fuel sources (principally water) for these generators to operate can sometimes be in short (and even critically low) supply.
- The Taskforce estimates that Tasmania currently has an annual energy deficit between on-island generation and Tasmanian consumption of between 700 GWh and 1 000 GWh, based on long-term averages. This means Tasmania relies on interconnection with the mainland, though variability in inflows provides opportunities to export energy.
- While the risk of low inflows into Hydro Tasmania's dams can be managed in most instances (through drawing down the 'stock' of water held in storage, Basslink imports, gas generation and wind generation) the 2015-16 energy security event demonstrates that Tasmania's energy security is severely tested by concurrent events.

Definition and assessment of energy security in Tasmania

- Energy security definitions exhibit common features focussing on 'adequacy', 'reliability' and 'competitiveness/affordability'.
- Existing frameworks for assessing energy security use both quantitative and qualitative data and generally look across different time horizons.
- A transparent assessment of Tasmania's energy security risks would help promote business and household confidence in the Tasmanian economy and society.

- Tasmania's electricity energy security in the short term is assessed as Managed. Tasmania's electricity reliability is Resilient due to the number and diversity of generators, and a network that generally performs well against independent assessments. However, Tasmania lacks some competitiveness features and its on-island energy deficit is a less secure state than if local supply and demand were in balance.
- Tasmania's electricity energy security in the medium and long term is indicatively assessed as Managed. Tasmania has opportunities to strengthen this assessment over time, and this will depend on how: the on-island energy deficit is addressed; the network adapts to new generation forms and how customers manage their demand; and the realisation of consumer benefits that innovation in technology and services has the potential to deliver.
- Tasmania's gas energy security in the short term is assessed as being Susceptible. While the reliability of gas infrastructure is assessed as Managed, there is considerable uncertainty currently facing the market with respect to the adequacy of gas supply and its competitiveness.
- Tasmania's gas energy security in the medium and long term is indicatively assessed as being Susceptible, based on the current outlook for gas prices and supply.

Energy security oversight

- State and national arrangements for managing energy emergency situations, in particular capacity risks arising from sudden weather events, are well understood, practiced and implemented when necessary. Significant reforms are not needed for these emergency arrangements, but rather continuous improvement should be pursued through engagement, practice and learning amongst the key bodies and persons involved.
- Frameworks to monitor, assess and respond to avoid energy supply security threats becoming an emergency situation do not appear as defined as for emergencies resulting from capacity events.
- Existing arrangements are based on legislation that is two decades old and have not been updated for major changes in the energy market.
- Tasmania's energy security oversight would be improved by enhancing independent oversight of water storages in the context of all energy supplies and demand. This is a common feature of the hydro systems that the Taskforce examined, including Norway, New Zealand, Manitoba and Iceland.
- When energy supply threats increase, but before they become an emergency situation, there is a need for a clear authority in the State to coordinate and manage the situation from a State perspective.
- Clearer roles and responsibilities would also enhance independent oversight, create transparency and public confidence, and provide Hydro Tasmania with clarity and reduce perceptions of it being conflicted between commercial drivers and its role in maintaining energy security.
- Gas oversight arrangements could be strengthened through greater clarity between the Department of State Growth and the Director of Gas Safety.
- Regular assessments and communication of energy security risks would enhance public confidence.

Management of Tasmania's hydro-electric storages

- Additional generation sources outside the existing hydro and wind generation are required to prevent an annual reduction in storages under average, or below average, inflow conditions. In most cases, Basslink alone is a sufficient source of energy to maintain annual energy storage levels in times of low inflow. Thermal generation is currently depended upon if Basslink is unavailable.

- Hydro Tasmania's interim storage targets of between 30 and 40 per cent, together with the return of Basslink and higher inflows, have improved Tasmania's energy security at least over the next year.
- The establishment of a prudent storage level (PSL) profile, below which operation should be minimised or avoided and above which would allow Hydro Tasmania the freedom to operate commercially, would clearly articulate the Tasmanian Government's risk appetite to Hydro Tasmania.
- Hydro Tasmania's High Reliability Line concept of the unserved energy (USE) measure is based on a national standard that is accepted and well understood in the energy industry.
- The use of extreme low inflow sequences in modelling and planning will result in improved prudent planning for energy supply risks.
- Further work is required to set High Reliability Level (HRL) and PSL profiles to appropriately secure storage levels.
- The energy stored below Great Lake's Environmental Extreme Risk Zone (EERZ) may not be accessed even in high energy security risk situations.
- Other jurisdictions with a dominant hydro generation profile offer good examples of planning, communication and regulator involvement that can be leveraged for the Tasmanian energy system.
- Escalation of communication and responses is required when energy security risks increase to ensure that the public are aware of the risks involved and the actions being taken to mitigate these risks.

Impact of climate change

- Tasmania has experienced a downward trend in total annual rainfall and runoff since 1970, with the largest changes being observed in autumn. Concurrent with these decreases, a significant reduction in inflows to hydro-electric catchments has been observed in Tasmania since the mid 1970s, with an acceleration of the trend since the mid 1990s.
- Climate change is projected to decrease inflows in the central plateau catchments, which may have a significant impact on power generation as these feed into the major storage of Great Lake. Projected changes to the seasonality of inflows in the western catchments may also reduce power generation.
- These changes have implications for Hydro Tasmania's long-term average yield assumptions and management of water storages over the next 10 to 20 years, particularly Great Lake and Lake Gordon/Pedder.
- Seasonal and inter-annual rainfall variability will continue to pose the largest hydrological risks over the short to medium term, rather than long-term climate change impacts.
- Other climate change projections relevant to energy security include decreased summer and autumn wind speeds that may reduce wind generation capacity (and coincide with projected declines in inflows during these months), and an increase in extreme events that may affect electricity infrastructure (e.g. bushfires, intense rainfall events and flooding).

Role of gas for energy security

- The viability of the Tasmanian gas market appears susceptible given its scale and increasing supply and price risks associated with both gas commodity and pipeline access. The TVPS is currently an important factor in helping to support the viability of Tasmania's gas market.
- Gas generation is a common feature of hydro-electric systems across the world as a backup generation source to manage hydrological risk. However, gas generation has become increasingly uneconomic to operate in the NEM (particularly as base load generation) due to increased fuel and operational costs.

- In the absence of reliable alternatives, gas generation remains important to Tasmania to mitigate against hydrological and Basslink failure risks. As such, the TVPS provides a 'back-up' energy generation source for Tasmania.
- The contractual arrangements to support standby gas generation at the TVPS could be made on an as-needed basis. While this may be the most cost effective approach for Hydro Tasmania, it may result in greater transportation price increases for non-TVPS customers.
- There is also a risk that in a tight east coast gas market, contracting gas and pipeline access on an as-needed basis could be difficult, if gas commodity becomes fully (or near fully) contracted and pipeline storage becomes a valuable product in the Victorian gas market.
- Locking in long-term gas supply and transportation agreements in the current market comes with high costs and risks, and may forego the opportunity to add more cost effective energy supply options over the medium to long term.
- Transportation price increases to non-TVPS customers are limited by customers' capacity to pay, otherwise the risk of fuel switching or other actions will increase.
- In the medium to long term, the role of gas generation in Tasmania will depend on the competitiveness of gas relative to other energy sources. Similarly, gas will need to remain competitive to retain and attract gas consumers, or risk being transitioned out of the Tasmanian market through customer fuel switching.

Interconnection with the National Electricity Market

- Basslink represents the single largest alternative energy source for Tasmania after hydro-electric inflows and storages, meaning that it is also an important mitigation asset for hydrological risk. It can import up to 40 per cent of Tasmania's consumption needs and meet around a quarter of Tasmania's peak demand.
- In the absence of specific information or independent assessments since the outage, the Taskforce is currently not in a position to assess the reliability of Basslink into the future.
- However, based on how interconnectors (particularly subsea interconnectors) have performed historically in other jurisdictions, and having now experienced a six month outage, there is sufficient evidence to consider a six month outage of Basslink to be a scenario that should be planned for.
- In most scenarios, Tasmania can manage its hydrological risk without there being a challenge to energy security through Basslink imports alone. However, Tasmania should not solely rely on Basslink being available to ensure energy security and, hence, other contingencies are required in addition to Basslink.
- The future energy mix in the NEM and how it will be managed to maintain adequate and reliable supply is uncertain, meaning the implications for energy imports to Tasmania in the medium to long term are also presently unclear.
- The case for a second electricity interconnector appears to be more strongly linked to the potential benefits it may provide to the NEM in terms of maximising the role of hydro-electric generation in supporting greater renewable energy development both in Tasmania and on the mainland. Whether these benefits can be realised relative to the costs and technical issues that require resolving is a matter currently the focus of a joint Australian and Tasmanian Government feasibility study.
- Interconnection with the NEM is perhaps the most significant strategic issue facing Tasmania over the medium to long term. Greater interconnection could create more revenue opportunities for Tasmania from a higher priced NEM but could increase prices and load risk in Tasmania.

Renewable energy, emerging technologies and consumer participation

- During the 2015-16 energy security event, wind made an important contribution to meeting Tasmanian electricity demand. Without this contribution, additional draw down of hydro storages and/or additional load reductions would have been required to meet demand until sufficient temporary diesel generation was commissioned.
- Tasmania's current on-island energy deficit can be addressed by building additional renewable energy projects, which will also serve to diversify the State's generation mix and reduce its dependence on energy imports.
- Tasmania has a world class wind resource, but the cost competitiveness of wind could be challenged over time as the cost of other technologies decline. Large scale solar development should not be dismissed, despite Tasmania's resource being relatively more limited than mainland Australia.
- The potential role of other renewable energy sources such as wave, tidal, biomass and geothermal will depend on their competitiveness relative to other technologies and investor interest.
- Small scale renewable energy, such as household integrated solar photovoltaic (PV) and storage, has the potential to make a small contribution to reducing Tasmania's on-island energy deficit, but provides 'consumer-level energy security', whereby consumers perceive they have greater energy security when they are able to control some of their supply and demand.
- A more technologically advanced network could also improve the reliability of the network (particularly in the face of future challenges) and minimise the impact of emergency power restrictions if they were ever needed.
- There may be aggregate energy security benefits in the form of network optimisation when embedded storage technologies are combined with new products and services (e.g. time-of-use tariffs, advanced meters) that allow consumers greater control and choice over their own energy use.
- Greater consumer control and choice can also enable improved energy efficiency. Tasmania's building stock is relatively old and there is an opportunity to improve the energy efficiency in residential homes and commercial premises.
- While there are a range of predictions regarding the rate of take-up of new technologies and services, changes in other sectors have occurred more rapidly and differently than thought possible.
- Electric vehicles may assist in reducing Tasmania's dependence on liquid fuels in the non-stationary energy sector in the longer term and provide other benefits to the State.

Priority Actions and Recommendations

Table 1 presents the Taskforce's five priority actions and the recommendations to the Tasmanian Government that support those actions. The recommendations are organised logically with each of the priority actions rather than presented sequentially in recommendation number order, as presented through the body of the Interim Report. Readers should refer to the recommendations in the chapters to understand the context in which they have been made.

Table 1 Priority actions and recommendations

Priority Actions	Recommendations	Number in Report
1. Define energy security and responsibilities	The following definition of energy security should be adopted for Tasmania: <i>Energy security is the adequate, reliable and competitive supply of low carbon emissions energy across short, medium and long-term timeframes that supports the efficient use of energy by Tasmanians for their economic and social activities.</i>	1
	Responsibility for developing an energy security policy that clearly articulates Tasmania's approach to energy security should rest with the Department responsible for the energy portfolio.	2
	Responsibility for monitoring and assessing energy security should rest with an external body with pre-established market monitoring capabilities. A new Monitor and Assessor role should be established to provide independent oversight and transparent public reporting. The Tasmanian Economic Regulator (TER), the Australian Energy Market Operator (AEMO) and the Director of Energy Planning are identified as potential authorities to undertake the Monitor and Assessor role.	3
	An Energy Security Coordinator role should be established to coordinate responses across market participants to manage electricity supply risks when water storages are near or below an identified 'energy security reserve' level. TasNetworks (preferably the Responsible Officer) or AEMO are identified as potential options for the Energy Security Coordinator role.	6
	Where necessary, legislation should be enacted or amended to ensure relevant officers or bodies have the appropriate functions and powers to support the roles and responsibilities. More efficient organisation of policy and regulatory resources across Government should also be investigated, to improve role clarity and the critical mass of existing small resources spread across several agencies.	7
	A review of the Director of Energy Planning's role, the <i>Energy Planning and Coordination Act 1995</i> and the <i>Electricity Supply Industry Act 1995</i> (at least as it relates to energy security matters) should be undertaken to modernise and streamline arrangements with the other reform considerations.	8
	The Department of State Growth should limit itself to a policy role with respect to gas energy security, with the Monitor and Assessor role considering forward gas supply and demand risks as part of its broader consideration of energy security. The Director of Gas Safety should be responsible for engaging and coordinating responses with industry and gas customers on potential or actual emergency gas supply risks as they emerge.	10
	The Tasmanian Government should explore whether AEMO should have a role in the Tasmanian gas market, given the Tasmanian Gas Pipeline (TGP) is now connected to the Victorian Declared Wholesale Gas Market.	11

Priority Actions	Recommendations	Number in Report
2. Strengthen independent energy security monitoring and assessment	<p>Additional resources of sufficient size to maintain capability should be provided for the monitoring and assessing function. Funding for these resources could initially come via a Budget appropriation, though a regulatory charge on relevant market participants to ensure the function is sustainable would appear appropriate as a permanent funding source.</p>	4
	<p>The Monitor and Assessor role should utilise existing expertise where possible, such as within TasNetworks (particularly its modelling capacity).</p>	5
	<p>The Monitor and Assessor role should publish an annual assessment of Tasmania's energy security status and make available on a website a dynamic (at least monthly) forecast of energy supplies relative to forecast Tasmanian consumption, as well as an assessment of hydrological risk.</p>	9
3. Establish a more rigorous and widely understood framework for the management of water storages	<p>Hydro Tasmania should undertake an annual review and forecasting process in October each year, near the end of the high inflow season between May and October. This should provide sufficient time to implement measures, if required, to maintain energy security over the dry period from November to April and beyond if dry conditions continue into May, as has historically occurred. The annual review should be independently verified by the Monitor and Assessor and the outcomes transparently made publicly available as part of the annual assessment.</p>	18
	<p>A High Reliability Level (HRL) should be adopted as the threshold to which reserve water is held for energy security purposes, where the reserve is sufficient to withstand a six month Basslink outage coinciding with a very low inflow sequence, and avoid extreme environmental risk in Great Lake.</p>	12
	<p>A prudent storage level (PSL) should be set to create a 'storage buffer' from the HRL that is sufficiently conservative that the likelihood of storages falling below the HRL is very low.</p>	13
	<p>While the Taskforce will engage further with Hydro Tasmania before recommending in its Final Report the PSL and HRL profiles, the PSL should be no lower than the interim storage targets Hydro Tasmania has put in place (40 per cent by the end of spring and 30 per cent by the end of June 2016).</p>	14
	<p>Future changes to the HRL and PSL should only be considered when there are material changes to supply and/or demand, and require endorsement by the Monitor and Assessor.</p>	15
	<p>Energy stored in Great Lake below the Environmental Extreme Risk Zone (EERZ) should be clearly identified as constrained when communicating total energy in storage levels.</p>	17

Priority Actions	Recommendations	Number in Report
	<p>A transparent scale of escalating actions should be implemented as energy in storage approaches lower levels with higher energy security risk. The following response levels should be implemented.</p> <ul style="list-style-type: none"> • ‘Commercial operation’ - if storage levels are above the PSL, Hydro Tasmania operates commercially and with only routine reporting obligations. • ‘Increased monitoring’ - if Hydro Tasmania’s forecasts indicate plausible scenarios of falling below the PSL, or storages actually falling below the PSL, Hydro Tasmania would provide the Monitor and Assessor with a recovery plan that demonstrated how storages are intended to be returned above the PSL. • ‘Increased response’ - if Hydro Tasmania’s scenarios indicate plausible scenarios of needing to access storages below the HRL, Hydro Tasmania would be required to provide a recovery plan that demonstrated how storages will be maintained to avoid entering the HRL or, if deemed unavoidable, how storages will be returned above the HRL once entered. • ‘Energy security reserve’ – if operating storages under the HRL, Hydro Tasmania would be required to work with the Energy Security Coordinator to ensure the recovery plan is being implemented and is working as intended. 	19
	<p>Hydro Tasmania could be required to seek authorisation from the Energy Security Coordinator to access energy security reserve storage below the proposed HRL, and the authorisation would be subject to a clear plan to return storages above this level.</p>	16
	<p>Hydro Tasmania should be required, through an appropriately robust governance mechanism (legislation or through a ministerially directed mechanism), to comply with the proposed Energy Security Risk Response Framework.</p>	21
	<p>Contingency measures should be evaluated using a competitive process to determine the most effective supply and/or demand measures, with key criteria used to select preferred options. The criteria should include cost, reliability and environmental impact.</p>	20
	<p>More conservative assessments of hydro generation output and consideration of potential seasonal changes to average wind speeds should be included in energy security planning to account for the combination of climate change impact projections and historical rainfall variability. All historical low inflow sequences should be used to assess risks, not just those associated with more recent trends.</p>	22
	<p>Hydro Tasmania should specifically model lower inflows into Great Lake that are projected as a result of climate change, and advise the Monitor and Assessor of the implications for balancing storages across the hydro system and any increased dependence on one (particularly Lake Gordon) or more storages.</p>	23
	<p>Hydro Tasmania and TasNetworks should closely engage with the Bureau of Meteorology and other experts to fully understand the opportunities to use improved climate modelling and weather forecasting for underlying assumptions of historical and future rainfall, wind variability and extreme events.</p>	24
	<p>The TER should seek an independent appraisal of Basslink’s asset management plans (including its Marine Disaster Recovery Plan) as soon as possible.</p>	28
	<p>Energy security planning should include planning for at least a six month Basslink outage.</p>	29

Priority Actions	Recommendations	Number in Report
4. Retain the TVPS as a backup power station for the present and provide clarity to the Tasmanian gas market.	<p>The TVPS, particularly the combined cycle gas turbine (CCGT), should be retained at least until there is a reliable alternative in place to mitigate against hydrological and Basslink failure risk.</p>	25
	<p>Commercial negotiations currently underway to resolve the gas commodity and transportation arrangements to support the TVPS should be allowed every opportunity to be realised with an agreement to be in place before the Taskforce's Final Report is completed.</p>	26
	<p>Agreed key features to be included in a new contract between Hydro Tasmania and the TGP's owner should be communicated to the Tasmanian gas market by the end of first quarter of 2017.</p>	27
5. Support new on-island generation and customer innovation	<p>The Tasmanian Government should ensure that new entrant renewable energy development is able to establish in Tasmania where such an outcome is consistent with that which would be expected to be seen in a competitive market.</p>	30
	<p>Direct negotiations with new renewable energy projects that are already progressed and have a sound business case should not be delayed because of the Taskforce's work.</p>	31
	<p>The Tasmanian Government should prudently facilitate, enable and ensure there are no unnecessary barriers to consumer-controlled energy management opportunities and choices, as a contribution to reducing Tasmania's energy deficit, optimising network outcomes and improving competitiveness for consumers.</p>	32

