

Tasmanian Energy Crisis – Resilience Case Study

Andrew Gissing

Risk Frontiers, Macquarie University, NSW 2109, Australia

Situation

On the 22nd of December 2015 it was announced that the Basslink interconnector had experienced a fault that had impacted the electricity cable, but had left the telecommunications cable providing broadband services operational. Prior to the disruption, Tasmania had been importing 40% of its energy requirements through the cable (Groom, 2016b).

The combined effect of the Interconnector disruption and contemporaneous reduced water levels in Tasmanian dams has left Tasmania with what the Tasmanian Energy Minister describes as “one of the most significant energy security challenges in our history”(Groom, 2016a; p.1). In what follows we discuss some of the risk management and energy security implications of this event.

Background and Governmental Response

The Basslink Interconnector is an undersea electricity cable that connects Victoria and Tasmania, providing electricity and high-speed telecommunications. The cable was commissioned in 2006, and was designed to provide energy security during times of drought to Tasmania, which is largely reliant on hydro-electric power. It also allows the trading of Tasmanian energy on the National Electricity Market. Concurrently, Tasmania has experienced drought conditions, with spring 2015 rainfalls said to be the lowest in 100 years of recorded history, and inflows into water storages continuing to be below average in January and February 2016 (Groom, 2016b).

In response to the crisis the Tasmanian Government has developed a contingency plan to ensure the continued energy security of the state. So far this plan includes:

- A commitment to bring up to 200MW of containerised diesel generation to Tasmania by the end of April. This provision comes at an estimated cost of \$44 million for installation and operating expenses, with the final cost conditional on the length of the outage and future rainfall (Groom, 2016a).
- Recommissioning gas-fired power generation at the Tamar Valley Power Station (Groom, 2016a).
- Negotiations with major energy users to voluntarily reduce energy demand. These reductions have been reported to include Rio Tinto’s Bell Bay Aluminium, with production disruption valued at \$22 million (Potter, 2016a).

- Reminders to households and businesses to conserve energy (Groom, 2016a).
- Formation of a Cabinet Energy Security Sub Committee (Groom, 2016a).

The additional generation mechanisms are claimed to more than replace the capacity of the Basslink Interconnector, and will provide energy security to Tasmania even if there is further disruption to power generation (Groom, 2016a). Further measures are also planned for consideration if the issue remains unresolved into the longer term.

All up disruption costs to Tasmania to date are estimated at over \$100 million (Potter, 2016b). In addition repair costs have been stated by Basslink as \$100,000 per day (ABC News, 2016c). Uncertainty still remains as to when the Basslink Interconnector will be fixed. Basslink have reported that they have refined the location of the fault but still don't know the cause of failure (Basslink, 2016).

The cable was cut as part of repair works on the 11th of March and which also took fibre-optic cables supplying broadband services offline. Tasmanians who had remained unaffected by the electricity outage to date reported disruption to some internet service providers, interrupting, thousands of households and businesses (ABC News, 2016a). iiNet had initially communicated to their customers that they had implemented an alternate solution for the duration of these repairs, though it would only provide limited capacity. Internet service providers are now negotiating additional capacity on other Bass Straight cables, after criticism they had underestimated the extent of customer frustration. Additional bandwidth is likely to be secured by the 17th of March, almost a week after the disruption commenced (ABC News, 2016b). In an upside, however, DVD sales have reported significant growth, as households look for alternate means of video content.

There have been negative public reactions to the use of diesel generators on the grounds of environmental pollution (Warren, 2016). There is an irony here as most of the Victorian electricity supply will be from coal-fuelled generation. There are calls for a second Basslink cable and wind farms to provide future redundancy and energy security (Warren, 2016). Movements are already underway to establish a parliamentary inquiry to examine the circumstances leading to the crisis (ABC News, 2016c).

The outcome of the crisis will largely depend upon the speed at which the Basslink interconnector can be restored to operation and the rainfall to top up dam levels. In good news for Tasmania, the Bureau of Meteorology is forecasting above average rainfall across most parts of state (Figure 1).

What lessons can we draw from this experience?

A number of lessons arise and which are common to many supply chain risks. In particular there is a need:

1. To think more broadly when identifying risks and not to ignore the likelihood of concurrent events. Crisis situations are also never one-dimensional and their cascading nature requires forward and dynamic thinking.
2. To maintain a diversity of supply such that there is redundancy in the system that can be drawn upon to meet service demands.
3. That both the supply and demand for a service can be manipulated to manage service continuity.
4. For strong leadership, risk management and a contingency plan to guide the response to disruptive events.
5. To coordinate and manage private sector responses to public risks. This requires close collaboration between the public and private sector in times of crisis and it is imperative that these relationships be already in place.



Figure 1: Chance of exceeding median rainfall (%) March to May 2016 (Bureau of Meteorology, 2016).

References

- ABC NEWS. 2016a. Basslink repairs hit internet users in Tasmania - 12 March 2016. Available: <http://www.abc.net.au/news/2016-03-12/basslink-repairs-hit-internet-users-in-tasmania/7241896> [Accessed 14 March 2016].
- ABC NEWS. 2016b. Basslink repairs: ACCC to look into concerns about ISP access to Telstra cables - 15 March 2016. Available: <http://www.abc.net.au/news/2016-03-14/accc-to-look-into-concerns-about-isp-access-to-telstra-cables/7244876> [Accessed 15 March 2016].
- ABC NEWS. 2016c. Tasmanian energy crisis: Basslink still unsure where cable fault is, facing 'phenomenal' repair costs - 15 March 2016. Available: <http://www.abc.net.au/news/2016-03-15/basslink-still-unsure-where-cable-fault-is/7247772> [Accessed 15 March 2016].
- BASSLINK. 2016. Basslink interconnector repair progress - 8 March 2016. Available: <http://www.basslink.com.au/> [Accessed 14 March 2016].
- BUREAU OF METEOROLOGY. 2016. Climate Outlooks. Available: <http://www.bom.gov.au/climate/outlooks/#/rainfall/median/seasonal/0> [Accessed 14 March 2016].
- GROOM, M. 2016a. Energy Supply Update - 22nd February 2016. Available: http://www.premier.tas.gov.au/releases/energy_supply_update [Accessed 14 March 2016].
- GROOM, M. 2016b. Ministerial Statement on Energy Security. Available: www.premier.tas.gov.au/releases [Accessed 14 March 2016].
- POTTER, B. 2016a. Hydro's diesel solution to Tasmanian electricity crisis to cost tens of millions of dollars. *Australian Financial Review* [Online]. Available: www.afr.com [Accessed 14 March 2016].
- POTTER, B. 2016b. Tasmania's electricity crisis won't be over until June. *Australian Financial Review* [Online]. Available: www.afr.com [Accessed 14 March 2016].
- WARREN, M. 2016. Talking Point: Calm heads now required to deal with Tasmania's energy crisis. *The Mercury* [Online]. Available: www.themercury.com.au [Accessed 14 March 2016].