

8 September 2014

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



**ENGINEERS
AUSTRALIA**
Tasmania Division

energystrategy@stategrowth.tas.gov.au

– BY EMAIL –

Dear Sir/Madam

Re: Engineers Australia Submission to Tasmania Energy Strategy Issues Paper

Engineers Australia is the peak body for the engineering profession in Australia. With over 100,000 members across Australia, we represent all disciplines and branches of engineering. Engineers Australia is constituted by Royal Charter to advance the science and practice of engineering for the benefit of the community.

Energy generation and transmission has been critical to the development of Tasmania's economy. It was a bold energy strategy that led to the establishment of four major industrials that have been operational for 50 to 100 years and have a multiplier effect of three to four on the Tasmanian economy.

Engineers provide critical advice for decision-makers who are transforming the economy. Tasmania needs to build a strong engineering profession to support Tasmania's economic growth plans. Engineering innovation is essential to transform our economy for a high-value, high-tech future.

Tasmanian Engineering Workforce

Between 2006 and 2011, employment of qualified engineers in Tasmania increased from 2,343 to 2,833. This was equivalent to annual compound growth of 3.9 percent, compared to 5.5 percent per year nationally.

In 2006, 1610 or 68.7 percent of qualified engineers were employed in engineering occupations, compared to 62.8 percent at national level. By 2011, the number had increased to 1,936 but the proportion had fallen slightly to 68.3 percent of employment, but still higher than an increased national figure of 64.4 percent. It is important to note that since the 2011 Census, engineering has experienced a downturn.

From about November 2012, there was a rapid deterioration in the state's engineering labour market and since about June 2014 there have been proportionally fewer vacancies for engineers in the state than nationally and, more importantly, proportionally fewer vacancies for engineers than vacancies in general. As at July 2014, there has been 30 successive monthly falls in vacancies for engineers at the national level (since December 2011).

Level 8, 188 Collins Street
HOBART 7000
P: 1300 653 113

tasmania@engineersaustralia.org.au
www.engineersaustralia.org.au

Tasmanian engineers were employed in every industry in the ABS classification system in 2011. The two largest employers of engineers in 2011 were professional, scientific and technical services, engineering consulting for short (24.4 percent), and manufacturing (14.7 percent). In the manufacturing industry, most engineers were employed in primary metal and metal product manufacturing, machinery and equipment manufacturing and food product manufacturing.

The electricity, gas, water and waste services industries employed 12.1 percent of Tasmania's qualified engineers, with engineering generation, transmission and distribution employing over 75 percent of those in this broader industry group.

The decrease in employment vacancies in Tasmania and the breakdown of industry distribution of employment for engineers demonstrates the potential impact on the State's engineering capacity from changes to the manufacturing sector due to the potential implications of the energy strategy.

Engineers Australia's Infrastructure Report Cards

The quantum, quality and condition of economic infrastructure are key determinants of productivity growth and economic growth. These connections and the critical importance of productivity growth to Australia's future were articulated in the Australian Treasury's Intergenerational Report.

While effective infrastructure delivery is critical to Australia, we also need to be realistic in terms of our capability to deliver benefits from infrastructure. Political, business and community expectations about new or improved infrastructure are often raised to unrealistic levels, resulting in unnecessary public criticism and blame when projects do not achieve their expected outcomes. New projects are often described in transformative terms and claimed that they can be delivered in short time frames. However, in reality, the vast majority of these projects provide only incremental improvements and all have lengthy design, construct and commissioning phases.

Progress towards optimising Australia's economic infrastructure has been slow and uneven. This has been the message from Engineers Australia's Infrastructure Report Cards (IRC), first released in 1999, with updated national reports in 2001, 2005 and the latest in 2010. In 2010, Infrastructure Report Cards were also released for each state and territory.

Engineers Australia's IRCs are complex documents that synthesise qualitative and quantitative information about the nation's infrastructure into a form useful for policy analysis and policy deliberations.

Documents examined include regional development plans, infrastructure strategic plans, documents relating to specific infrastructure projects, government reports and government budgets and budget statements. Statistics examined included financial statistics made available by state and territory governments and the Commonwealth Government on funding for infrastructure, the progress of these commitments and funding of and progress of maintenance of existing infrastructure assets. Background statistics from a range of agencies on population and population growth, traffic volumes, freight volumes, water supplies and use, waste water collections and volumes recycled, energy supplies and demands and other statistics that influence the demand for, and supply of, infrastructure services are also examined.

The synthesis includes the considered views of engineers with expertise and experience in infrastructure matters in all states and territories. The final outcomes of the process are

assessments about the suitability of existing infrastructure for current and planned future uses. The scale used for the assessments is as follows:

- A** (Very Good); Infrastructure is fit for its current and anticipated future purposes.
- B** (Good); Minor changes are required to enable infrastructure to be fit for its current and anticipated future purposes.
- C** (Adequate); Major changes are required to enable infrastructure to be fit for its current and anticipated future purposes.
- D** (Poor); Critical changes are required to enable infrastructure to be fit for its current and anticipated future purposes.
- F** (Inadequate); Inadequate for current and anticipated future purposes.

In the 2010 IRC, Tasmania's electricity infrastructure was assessed as B⁻ recognising high supply security and reliability, and gas infrastructure was assessed as C with the main caveats relating to the risks of a single pipeline and cessation of system expansion.

There have been two distinct phases in Tasmania's energy infrastructure activity; prior to 1998 activity trended very low and generally below the level for 1988-89 of \$111.3 million in real terms. Since then there has been a lift in activity but with extraordinarily large annual variation. Average growth prior to the 2010 IRC was 38.3 percent per annum. Since the IRC average growth has been negative 9.3 percent per annum.

Tasmania Context

The Tasmanian electricity sector is unique. The utilisation of hydro-generated power gave the state a competitive advantage to attract major industrial companies that have been in the state for almost 100 years. Not only do major industrials contribute up to a four-fold multiplier effect to the economy, but they have also led to innovation and the establishment of supporting industries.

Government needs to be clear as to whether the electricity utilities are commercially-driven or service-driven and to whom the service is being provided. The answer to this question will serve the underlying objectives of any future energy strategy. It is recognised that the Tasmanian electricity utilities will remain in state hands and that it is expected that a dividend will be returned to the Government. Engineers Australia advocates for the long term planning of asset management, including upgrades, that is independent of the election cycle. Any long term plans need to take this, and a long term asset management strategy, into account.

Importantly, the utilities need to be run as efficiently as possible in order to contribute to electricity prices being as low as possible. Investment in energy generation and transmission/distribution capacity needs to be done on a cost-benefit basis. Using the example in the issues paper, investment to increase generation from existing hydro assets and the second Bass Strait Interconnector should be done based on clearly defined objectives. As indicated in the 2010 IRC, Engineers Australia has expressed concern that maintenance and rejuvenation of ageing assets needed to be funded on a more sustainable basis.

The activities that have been undertaken over the past five to seven years to secure the state's energy supply and reliability has strengthened the potential for developing future economic growth. However, as pointed out in the strategy issues paper, key issues need to be addressed.

The most important point that we wish to communicate is that it is important that any future energy strategy is prepared side-by-side with other state strategies, such as population or economic growth strategies, and these interdependencies clearly identified within the strategy.

The governance of the Tasmanian electricity sector is provided by multi-jurisdictional bodies and government agencies. Australia had, and still has, an extremely fragmented regulatory and planning framework. There are many federal bodies that are responsible for regulation, policy or investment in infrastructure, and there are dozens more at the state and territory level, each having different and often competing responsibilities and interests. This remains a major weakness in the Australian system, which requires a willingness to cooperate between the various spheres of government to deliver efficient outcomes for the community. Defining the roles and responsibilities of each agency will help to improve the efficiency of the system. This will also identify any duplicity across the agencies.

Reporting is a requirement to ensure transparency. While it is acknowledged that the Tasmanian electricity sector has unique qualities to mainland states, benchmarking to understand the performance of the sector is important. It has been identified that Iceland could possibly be used as a suitable benchmark and model for Tasmania.

An important aspect in the issues paper identified by Engineers Australia is the importance of any future strategy on increased state economic growth. It was noted that in Section that major industrials were not identified as a vulnerable customer.

Tasmania has previously had electricity policies that encouraged major industrials to invest in the state which has led to economic growth. However, these industries are vulnerable to electricity pricing regimes and service from the utilities.

As shown in Figure 3 on page 9 of the issues paper, approximately 60 percent of the forecast load is attributed to industrial consumption. Interestingly, the load forecast for this sector is predicted to increase slightly while that of residential and commercial sector is expected to decrease at a greater rate. This is, in part, due to the increased adoption of solar photovoltaic generation. A consequence of the declining demand is the increased pressure on recovering transmission costs from remaining users.

Electricity costs for the current major industrials can be in the range of 30 percent of total operating costs. There is a high risk of these companies not being able to afford electricity in Tasmania. If one of these major industrials were to leave the network, or as we have seen recently a decrease in the state's mining activity, prices are likely to be shared by the remainder and thus the price of service would increase further exposing the balance of major industrials.

The issues paper shows that the Transend 2008 forecast sales base scenario has not been realised. It also indicates that there is capacity to service additional high-energy industries within the state. Any future government policies, including energy, should be such that current major industrials increase their competitiveness to ensure their survival in the state. In addition, with the available capacity, government policy should be encouraging other major industrials to the state. This may include security in transmission prices.

Conclusion

Engineers Australia commends the State Government for developing a long-term energy strategy for Tasmania. However, the structure and mechanisms for developing and achieving the long-term plan must be open and transparent and must include wide consultation with industry, the professions and the community at large. We recommend

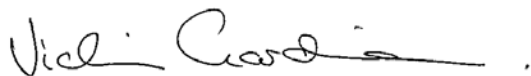
caution and highlight the need for flexibility to allow for unexpected changes in demand forecasts due to changing economic and political environments, as well as the advancement of new technologies.

The structure and mechanisms for developing and achieving the long-term plan must be open and transparent and must include wide consultation with industry, the professions and the community at large.

Private sector investment in Tasmania must be encouraged and any energy strategy is a major mechanism through which this can be achieved. Models that include the private sector must have the appropriate allocation of risk to deliver the best outcome.

Thank you for consideration of this submission.

Yours faithfully

A handwritten signature in black ink, appearing to read "Vicki Gardiner". The signature is fluid and cursive, with a long horizontal stroke at the end.

Dr Vicki Gardiner FRACI CChem CompIEAust
General Manager – Tasmania Division
Engineers Australia