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Committee Secretariat  
Joint Select Committee on Northern Australian  
P O Box 6021  
Parliament House  
**CANBERRA ACT 2600**

Dear Sir/Madam

## **DEVELOPMENT OF NORTHERN AUSTRALIA**

### **ERGON ENERGY**

Ergon Energy is a Queensland Government-owned corporation, supplying electricity to around 700,000 customers across a vast operating area of over one million square kilometres – around 97 per cent of Queensland. Ergon Energy services extend from the expanding coastal and rural population centres to the remote communities of outback Queensland and the Torres Strait.

We are all about delivering on our purpose – ‘to provide safe, reliable, efficient and sustainable energy solutions to support our customers and the Queensland economy’. To make this happen, Ergon Energy has around 4600 employees and a \$10.6 billion asset base.

Ergon Energy's electricity network consists of approximately 150,000 kilometres of power lines and one million power poles, along with associated infrastructure such as major substations and power transformers. We also own and operate 33 stand-alone power stations that provide supply to isolated communities across Queensland which are not connected to the main electricity grid. Since August 2007, Ergon Energy has owned and operated the Barcaldine gas-fired power station along with its associated infrastructure, which supplies power to the main grid.

Ergon Energy is actively involved in alternative energy generation solutions and is one of Australia's largest purchasers of renewable energy.

We're also a major contributor to the development of skills across regional Queensland. And we take our social responsibility seriously through numerous partnerships with the communities we serve.

Ergon Energy has a distribution business (poles and wires), retail business and a subsidiary telecommunications business (Nexium). Ergon Energy's strategy is to become a “market enabler” bringing together participants who can provide electricity services to our customers, moving away from the approach of a traditional government monopoly.

## **JOINT SELECT COMMITTEE ON NORTHERN AUSTRALIA**

Referring to the Terms of Reference for the Joint Select Committee, Ergon Energy feels there is significant opportunity for energy and demand-based future industries in the northern Australia area.

As the Queensland distributor responsible for the area north of the Tropic of Capricorn, including the Torres Strait, Ergon Energy has first-hand experience that can be of assistance to the committee in its review.

### **Responding specifically to the Terms of Reference below:**

- Examine the potential for development of the region's mineral, energy, agricultural, tourism, defence and other industries;

Ergon Energy believes there is significant scope for expansion of energy-based industries, with opportunities in generation, and retail sectors. The transition to more renewable energy sources may require significant industry around research, application and commercialisation of a range of products and technologies. Smart-grids in particular are an area of significant opportunity. The application of renewable energy in tropical locations is an area where northern Australia can develop specific expertise.

In addition, Ergon Energy believes there is significant opportunity for demand-based industries to grow, providing opportunities for third party participants to take part in the facilitation of extra demand and capacity into the electricity supply market.

Ergon Energy has significant experience in demand management and the development of demand markets.

Ergon Energy has conducted the following key projects:

### **Townsville Queensland Solar City (refer to Case Study 1)**

The iconic Townsville Queensland Solar City project showcased the future of sustainable living in Australia – with a 'Solar Suburb' on Magnetic Island central to its success.

By engaging the community in the energy efficiency challenge, it provided a model of how solar energy and energy efficiency can deliver environmental and economic benefits. Magnetic Islanders, driven by the desire to reduce carbon emissions and defer the need for an additional undersea electricity cable in the World Heritage marine environment, reduced peak electricity usage by 16 per cent (in real terms). It slashed overall consumption by the same amount, bringing usage and peak consumption back down to 2005 levels, where they remain today, two years after direct project engagement was completed.

Greenhouse gases have been reduced by over 64,000 tonnes, over the original target of 50,000 tonnes by the end of the seven year project. Importantly, the third electricity supply cable to the island has been deferred by more than 10 years, four years more than the project targeted.

The project also included hosting solar arrays for community rather than personal benefit, and it enlisted local support to change customer behaviour and deliver a formidable assault on traditional models for energy use. A part of the Australian Government's Solar Cities program, the Ergon Energy-led Townsville-based consortium also included the Townsville City Council, local developers and funding from the Queensland Government.



### **Energy Sense Community (ESC) program**

The Energy Sense Community (ESC) program aims to develop, implement and measure the effectiveness of innovative and non-network alternatives at key Townsville locations in a way that may inform Ergon Energy's 2015 regulatory submission to the Australian Energy Regulator (AER). The program includes technical initiatives, enhanced asset management practices and customer engagement initiatives across residential, business, and commercial and industrial segments. Its location in the key Townsville market means the program may influence (positively or negatively) Ergon Energy's corporate brand and reputation and therefore must operate in support of corporate guidelines and processes.

Developing the business case for smarter, more interactive energy network investment and energy management mechanisms requires confirmation from a network operator perspective that alternatives to traditional network solutions are commercial and sustainable. It also requires endorsement from end energy users, the community and stakeholders that the applied solutions are consistent with their expectations of energy delivery, affordability and availability.

International pilots and trials have already shown that failure to engage and educate consumers, stakeholders and community in the merits of new technology leads to a lack of buy-in at all levels. At the consumer level this leads to a low level of market demand for technology and services. At the stakeholder level it leads to a lack of support for necessary regulatory and policy change and at the community level it reduces the potential for embedding long term sustainable behavioural change arising from action as a 'community issue'.

### **Powersavvy (refer to Case Studies 2-3-4 and 5)**

Powersavvy began as an initiative initially funded by the Queensland Government. It aims to reduce electricity consumption, greenhouse gas emissions, and the overall cost of electricity supply in Queensland's 33 isolated communities, supplied by Ergon Energy diesel-fuelled power station. Powersavvy is a comprehensive energy efficiency and community engagement program, working with residents, businesses and government agencies to better manage energy use. As a direct result of powersavvy participating customers have achieved savings to date are estimated at 10.457GWh, with an annual saving rate of estimated at 5.5312GWh/year.

While opportunities for energy and cost savings have been identified in private sector commercial enterprises and government operations, many projects have not been implemented. One identified issue that continues to be a barrier is the lack of qualified trade's people in remote communities. This causes delays in work being undertaken and/or results in unrealistic quotes given to customers. Another related issue is government contracting requirements at both the Commonwealth and State levels. For example, a much needed upgrade to the water heating at a hostel (Commonwealth-owned) sat idle for over a year because of the difficulty getting three quotes for the work. Two companies quoted – including the one local plumber, but there were significant delays in attracting a third contractor.



### **EmPower South Mackay**

EmPower Mackay is a project which aims to facilitate market-based solutions for managing demand in an important commercial location. The project will demonstrate that lower cost opportunities can be implemented on customer properties. A key factor of this project is the high level of engagement with the energy services sector, for example Ergon Energy is establishing a Trade Ally Network (TAN). The TAN is a group of service providers who already provide products and services to business. Ergon has trained the TAN in our needs and Ergon Energy has also established a range of incentives to support the implementation of identified projects. The model is for the existing service provider to engage with the customer and develop a demand management option which enhances the customers' business and for which Ergon Energy will contract to provide incentives. Beyond the Mackay region this is a model that Ergon Energy intends to extend to areas of interest.

The Joint Committee may seek to visit the Ergon Energy home page which demonstrates the information provided by the market through the Demand Response Incentive Map; and the range of opportunities for customers and energy service providers. While these currently focus on Mackay the model will be applied to further focus areas over time.

### **Doomadgee Solar Farm**

Ergon Energy commissioned the 264kW Doomadgee Solar Farm in August 2013. The solar farm is capable of achieving 50 per cent instantaneous penetration in the daytime in winter months, and will supply 432MWh/annum which is 8 per cent of total energy used in Doomadgee each year. The solar farm adds to the portfolio of renewable technologies helping to reduce diesel usage at Ergon's isolated grids, which includes wind turbines at Thursday Island, geothermal at Birdsville and concentrating solar photovoltaic at Windorah.

*Note: Each of these projects has been based in the northern Australia area and has had to cater for the variations encountered in tropical environments.*

Provide recommendations to:

- **Enhance trade and other investment links with the Asia-Pacific:**

As above, there is already a significant base of expertise in the areas of energy and demand specific to tropical environments that could be applied and expanded into a broader Asia-Pacific context.

With the growing demand of the Chinese middle-class as well as the growing international focus on carbon reduction, the integration of renewable generation and application of energy efficiency and demand management are key service-based industries that could be used to enhance trade and investment in the Asia-Pacific region.

- **Address impediments to growth:**

A key impediment to growth, but conversely a key enabler, is ready-access to affordable energy to support production and industry.

With northern Australia, and in particular the Ergon Energy supply area, having some of the lowest network customer densities in the western world, these challenges have already been overcome in a range of locations and as our customers' needs and expectations grow and develop we are focused on deriving more and more from our existing asset.



Effective use of demand management, energy efficiency and renewable generation can be used to support the availability and cost of energy supply.

- **Asset Utilisation**

To ensure that cost of electrical infrastructure does not become a barrier it will be critical that existing and new infrastructure is used efficiently. Lack of appropriate price signalling has resulted in electricity demand peaks that have traditionally been met by building capacity resulting in an underutilisation of the network at other times. By implementing appropriate time of use tariffs and advance meter infrastructure more can be extracted for the existing assets and capital costs can be lowered.

- **Identify the critical economic and social infrastructure needed to support the long term growth of the region, and ways to support planning and investment in that infrastructure.**

Ergon Energy's infrastructure requirements are submitted and regulated by the Australian Energy Regulator (AER). These submission detail all network expansion and business requirements for each of the relevant regulatory periods. The submission to the AER for 2015-2020 is currently under compilation and includes a focus on the aforementioned areas around demand and energy markets as well as Smart Grid. Opportunity exists to accelerate work in some of the areas and programs identified if additional funding were made available.

Ergon Energy is willing to further discuss and explain its regulatory proposal and how it may support the aims of the Northern Australia committee.

## **Summary**

Ergon Energy is supportive of the government's Joint Select Committee on Northern Australia and is willing to provide further information as relevant. In particular, Ergon Energy sees opportunity in demand and energy markets that could be translated into a broader Asia-Pacific context.

## **CASE STUDIES**

Please find 11 sample case studies showcasing some of the successful partnerships that have been established to deliver benefits to both business customers and Ergon Energy in North Queensland.

- Case Study 1: James Cook University
- Case Study 2: IBIS Douglas St TI Case Study
- Case Study 3: Star of the Seas Case Study
- Case Study 4 Sunwater Case Study
- Case Study 5: IBIS Dauan Case Study
- Case Study 6: Queensland Health Bohle Store
- Case Study 7: Queensland Health District Store
- Case Study 8: Queensland Health Kirwan, Townsville
- Case Study 9: Queensland Health North Ward
- Case Study 10: Royal Flying Doctors Service
- Case Study 11: Good Shepherd

If you have any queries or require further information, please do not hesitate to contact  
Mr Dave Heberlein, Group Manager Energy Conservation and Demand Management

Yours sincerely

Ian McLeod  
**CHIEF EXECUTIVE**