

Renewable Energy Solutions for Tropical North Queensland

Our region currently imports over 90% of its power needs from Central Queensland coal fired stations through transmission lines that lose up to 40% of the power on the way, and which currently forces the state to pay millions in subsidies so our power prices are reasonably similar to the SE corner of the state. The biggest increase in electricity prices in the future for the Cairns Region will likely come from upgrading transmission networks. Further, the region is not independent in its energy production and the transmission lines are vulnerable in times of crisis. There are opportunities on the table now and in the future, in local renewable energy projects to create a much greater level of energy self-reliance, and to limit potential cost increases borne by residents and businesses.

If these opportunities are not grasped by our region, the opportunity costs are likely to include:

- continuing reliance on imported power
- power insecurity
- increasing costs associated with transmission
- jobs in this industry sector
- further diversification of our economy.

As well as the intangible benefits associated with a reputation associated with being an innovative, investment friendly, renewable energy driven tropical region.

Cairns and the surrounding region has abundant renewable energy resources such as solar, wind and biomass. As a result of this resource the region has over 100 businesses operating in the renewable energy sector providing employment for over 700 people and turnover of over \$100m per year. The renewable energy industry includes household, commercial and industrial and utility scale project expertise.

Specialist businesses have capability in:

- solar photovoltaic - design, installation, maintenance
- large scale wind generation - project development, project and asset management
- biomass - feedstock handling, electricity generation, system operation and maintenance
- biodiesel production
- remote and isolated generation - hybrid systems integrating with diesel
- professional services - engineering, consulting, community engagement, project management.

Many businesses export renewable energy services, technology and hardware to the Asia Pacific region and beyond to markets in Europe. Businesses have developed unique capability in delivering renewable energy solutions to challenging, remote locations such as isolated communities and mine sites.

Significant work is underway in renewable energy research and development including energy storage, bio-har, solar photovoltaic roofing material, and remote power stations. Research and development collaborations are very strong with partnerships between business and James Cook University and Ergon Energy.

There are several large scale renewable energy projects planned in the region and the sector has the potential to grow and achieve revenue in excess of \$750m and over 2,500 employees by 2020.

Key projects currently in development include:

- Infigen Energy - Forsayth Wind Farm \$150m
- Ratch Australia and Port Bajool - Mount Emerald Wind Farm \$540m
- Ratch Australia - High Road Wind Farm \$90m
- Polepower - \$17.9m
- Asia Pacific Energy Innovation Centre \$10m
- Ergon Energy R&D Test Facility

WHERE ARE WE NOW AND WHERE TO NEXT FOR ENERGY IN TNQ?

The current situation with electricity supply in the TNQ region is:

- The majority of electricity supplied to the region is provided from power stations (fossil fuelled) located in the southern parts of the state, incurring large transmission and distribution costs and losses.
- The electricity price in Queensland consists of generation costs 42%, transmission and distribution costs 49% and retail costs 9%.
- Electricity prices in Queensland have risen by approximately 80% in the last 5 years and will increase by approximately 22% in July. This price increase is heavily influenced by electricity distribution infrastructure investment (poles and wires).
- Electricity prices in regional Queensland are heavily subsidised (2012 – 2013 \$620M and expected to be \$700M in 2013-14). So the actual cost to provide electricity to the TNQ region is significantly higher than the retail price indicates.
- The rise in electricity costs is having a negative impact on local residents, businesses and industry (i.e. farmers, tourism, retailers, etc.). The uncertainty in pricing is also reducing the ability to attract new business to the region and provides uncertainty for existing businesses.

The region has the potential to change how electricity is supplied to the region:

- Tropical North Queensland has abundant natural energy resources in the areas of solar, wind and biomass which are and can be used to supply electricity to the region into the future.
- The cost of renewable energy technologies have reduced significantly in the last 5 years making it economically viable compared to traditional forms of electricity generation and distribution.
- Renewable energy investment provides a fixed cost of electricity for the life of the asset. Renewable energy technologies are not subject to fuel price volatility which other forms of electricity generation are exposed to (i.e. coal, gas, nuclear) which are heavily influenced by international market pricing. Iceland has been able to attract

aluminium smelters which are energy intensive because of electricity price certainty from geothermal generation even though they have no bauxite deposits.

- The idea that renewables cannot provide base load power has been demonstrated as a myth. With diversified and distributed generation and smart energy storage solutions (smart use of the grid, molten salt, Lithium batteries etc.) renewables can provide cost effective base load generation.
- It makes economic sense to utilise the natural resources available to the region.

Links to the TNQ Renewable Energy commissioned reports on Industry Profile and Plan:

<http://www.tradelinked-cairns-png.com/img/TNQ-RenewableEnergyIndustryProfile.pdf>

<http://www.thinktnq.com.au/research/11/16/doc-181/474.download>