NORMANTON SOLAR FARM

Normanton Solar Farm

COMMUNITY INFORMATION PACK

Lyn Heath- Solar Futures Australia – September 2016

Introduction

Construction of the Normanton Solar Farm commenced in May 2016. The Normanton Solar Farm partners Scoulller Energy and Canadian Solar (Australia), will utilise proven solar technology and efficient construction practices, while also delivering seamless integration into Ergon Energy's Electricity grid.

The Normanton Solar Farm is based at Lilyvale, a degraded ex-grazing property 5 km south of Normanton in Queensland's Gulf Savannah region. The local council of Carpentaria Shire has sold Lilyvale to the Normanton Solar Farm. The Council is very supportive of this project, as it will provide local employment, utilise currently unproductive land, and reinforce the Gulf Savannah's 'clean, green' brand associated with wild-caught fisheries and grass-fed cattle industry.

The project partners believe that this iconic Northern Queensland project will be of great interest to members of the Carpentaria Shire community and members of the general public visiting Normanton as tourists.

The Normanton Solar Farm Team

The Normanton Solar Farm team will develop, design, construct, own, operate and maintain the Normanton Solar Farm. A long term power off-taker contract has been signed with Ergon Energy retail under a Power Purchase Agreement (PPA).

Scoulller Energy is a private developer of Renewable Energy Power Generation Infrastructure

www.scoullerenergy.com.au

Canadian Solar (Australia) will undertake the key Solar Farm Engineering, Procurement, Design, Construct & Operation activities

www.canadiansolar.com/au

The Scoulller Energy crew assembling the racking on site in Normanton

The 16,000 solar panels were supplied by Canadian Solar

Key stakeholders identified include:

- The local community (residents and businesses);
- Land owners and project neighbors;
- The local Council – Carpentaria Shire;
- Chamber of Commerce, Gulf Savannah Development;
- Local Indigenous representatives;
- QLD State Department of Planning;
- QLD State Department of Environment (DSE);
- QLD State Department of Energy & Water Supply (DEWS);
- The Civil Aviation Safety Authority (CASA);
- Ergon Energy (the local electricity distributor);
- Australian Renewable Energy Agency (ARENA)
- Carpentaria Land Council

The Australian Renewable Energy Agency is providing $8.4 million funding support

The Existing Energy Supply to the Gulf

The existing arrangement for energy supply in this region is somewhat restricted, due to remoteness from the national grid networks on the east coast of Australia, and the existing economic arrangements for regional electricity supply supported by the Queensland Government.

The eastern part of the Gulf Savannah is connected to the Eastern Australia national electricity grid by a long single circuit transmission line which is a combination of 132kV & 66kV and which experiences high network losses. This 700km line commences in Townsville and terminates at a 66kV/22kV substation at Normanton. This transmission line is symptomatic of many long, lightly loaded lines that are spread across the length and breadth of Queensland, all supplied by large central coal or gas-fired generation sources in South-Eastern and Central Queensland, which leads to a network that has large losses built-in to supply far flung customers.

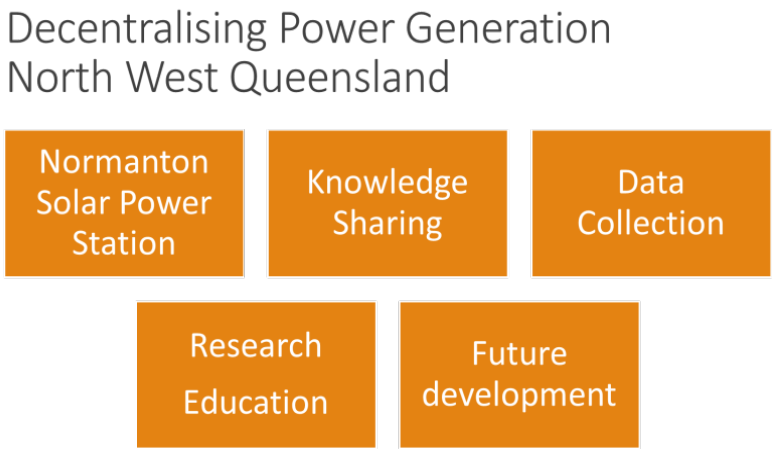

Figure 2 - The Normanton Solar Farm commitment to stakeholders

The capacity of the Normanton substation, and the 66kV transmission line that supplies it, is currently limited to around 5MW by Ergon Energy due to technical constraints. Furthermore, Ergon Energy cannot connect any new large loads due to the restrictions on the line capacity. This situation discourages further commercial and industrial investment in Normanton, Karumba and surrounds.

Regional Support

The region's excellent solar resource, role as a major regional hub, supportive regional council and community, and favourable attributes make it an excellent locality for a solar energy facility. The community has demonstrated continued and consistent support for this project that will develop a local skill base and create employment.

Key Messages

The Normanton Solar Farm aims to provide clear, open and honest communication with stakeholders. To avoid confusion, consistent communication will continue to be used across the different communication channels and the various stakeholders. Key messages will be clear, with the detail of those messages tailored to meet the needs of audience groups such as communities and other stakeholders.

1. Community benefits and opportunities – short, medium and long term;
2. Project construction updates;
3. The Solar Farm development partners, their background and their commitment to deliver this project;
4. The Project details, location, proposed technology, and issues with the local power grid;

The Normanton Solar Farm approach to communications will be to provide two-way communication wherever possible with all stakeholders in order to encourage stakeholder input.

The Normanton Solar farm team is extremely grateful for the support the community has demonstrated for this project so far.

Project Benefits

For the Carpentaria Shire, and the local community, the likely local and regional development, employment, tourism and educational benefits include:

- Local employment during project development, project construction, and long term project operation, with the likely outcome that the development team will use the learnings from Normanton to develop projects in other Northern Australian locations, utilising the skills and experience of the Normanton staff in this broader project portfolio;
- Local and regional suppliers will be used for freight, civil construction, electrical contracting, IT systems and accommodation further benefiting the region's economy;

- Showcasing Carpentaria Shire and the Gulf Region throughout industries worldwide including, tourism, scientific, renewable energy, educational, research, and all levels of Australian Governments - Local, State and Federal;
- Training and development opportunities availability for Bynoe Tours and Savannah Guides in conjunction with future planned tourism programs. Note that there will be no tourism activities on site, as the focus is only on education, research, and knowledge sharing. A tourism display will be located at the Normanton Visitor Information Centre. Direct access to knowledge sharing data will be available through digital sources.
- Cultural opportunities for local indigenous groups.

Beneficiaries of the Normanton project development, and the longer term Knowledge Sharing plan include:

- Communities looking to improve their resilience and sustainability through the development of locational renewable energy solutions that lessen reliance on long, unreliable, and often expensive rural energy grids;
- Governments and electricity network providers receive the benefits arising from successful application of the Scouller solar farm model where renewable energy power stations are situated at the fringe of long, weak rural power grids to provide localised support, and over the longer term improve reliability, sustainability and financial outcomes (
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- Figure 3);

Figure 3 – Knowledge sharing will benefit future solar projects in North West Queensland

The key features of the project

- The unique and innovative nature of this project compared to other large Solar PV projects developed in Australia, where it will emphasise the ability to connect to “Fringe of Grid” locations in rural Australia, and provide real benefits to the electricity network and customers generally;
- The iconic nature of the project location - firmly embedded in the Gulf region of Northern Australia. Solar energy capture in this region is currently a clear focus of the federal Government, as it is an area with one of the best

solar energy resources available on the Australian mainland and yet it remains unexploited for energy production of this nature;

- The high utility value and practical nature of the knowledge to be gained from the project, and its potential to catalyse a wave of new renewable energy investment in fringe-of-grid applications across Australia;
- The land available within the project boundary, close to a main road, and close to the Normanton township, that is readily able to be developed into a significant project.

Data Monitoring, Education and Research

- Visitors will be invited to participate in interactive displays and data modelling concerning the facility and its attributes at the Normanton Visitor Information Centre.
- The Management Centre will also contain the operational office headquarters for the Normanton Solar Farm project.
- Tours for education or research will be conducted by appointment only. No admittance to the site is available without prior permission or organised appointment (Due to insurance and WH&S requirements, visitors are not permitted to roam the property without a qualified guide).

Key Knowledge Sharing Activities will include:

- A Project Knowledge Sharing display at the Normanton Visitor Information Centre which will develop further public awareness of renewable energy and how it can help improve the affordability and reliability of electricity in rural Australia;
- A community roadshow to councils, schools and interested stakeholders across Northern Australia to share the learnings gained by the project, and encourage the further development of renewable energy solutions for rural and remote energy supply;
- The land available within the project boundary, close to a main road, and close to the Normanton township, that is readily able to be developed into a significant project data collection centre.
- Data collection and storage facility: All data from the Normanton Solar Farm will be managed and stored within the Centre. Data will be monitored on a daily basis and climate and performance data will be streamed via the project website.
- An energy research facility: The Centre will have a philosophy of an 'open door' policy for researchers, providing opportunities for industry, academic institutions or other researchers to engage in on-site data collection, analysis and research.

Normanton Power History

It was expected that around 70 residents would take up the offer to have electricity installed when the scheme began operating in Normanton in October, 1955. When the electricity scheme was initially proposed, it was welcomed by the people of Normanton. The only power available to residents in the town had to be generated using a small, private plant.

Situated 320 miles west of Cairns in the far north of Queensland, Normanton was outside the Cairns Regional Electricity Board (CREB) area. However, CREB Manager, Mr. A.E. Sharman explained that assistance would be given

... to bring power to a township remote from the larger centres where electricity was more readily available and accepted as part of everyday life. The larger electric authorities often helped the smaller centres in such a way.

The new Powerhouse, with three 16kW alternators driven by diesel engines would supply electricity for domestic and street lighting, refrigerators and a few small commercial motors. Restrictions would be put in place for other applications, and stoves and wash boilers would not be allowed. The overhead wiring for the scheme was erected by staff from CREB.

All enquiries can be made direct to Communications Officer (Lyn Heath) Phone 0448776393

lyn@solarfuturesaustralia.com.au

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