

TOWNSVILLE

Solar Capital of Queensland



BY LOUISE MATTHIESSON
Solar Citizens Qld Coordinator

“Townsville and the surrounding region is sitting on a gold mine of opportunities.”

- OLIVER YATES, FOUNDING CEO OF THE CLEAN ENERGY FINANCE CORPORATION*

* Interview with Renew Economy podcast, 26 May 2017.

AS the sunniest city on Australia's east coast, Townsville is fast becoming Queensland's renewable energy capital.

North Queensland is blessed with an abundance of solar, wind, hydro and biomass resources, which can be harnessed sustainably to generate affordable clean energy.

For many years local sugar mills have generated renewable electricity from sugarcane waste, and thousands of families have already put a solar system on their roof to cut power bills.

Now there's a boom in large-scale renewable energy projects across the Townsville and Dry Tropics region. Three new solar

farms have been switched on this year, and another 12 large power plants — driven by the wind, sun and water — are planned or under construction.

These clean energy power plants will be able to provide electricity for the local area and export it to the rest of the state. If all proceed, they could generate more than 15 per cent of Queensland's current electricity needs.

Instead of relying on electricity from the southeast of the state, North Queensland could become a clean energy powerhouse.

This region has some of the best solar energy resources in the world. Solar farms here generate 25 to 50 per cent more electricity per unit than the world average. This gives us a global competitive advantage, so in the future, North Queensland could even export electricity to neighbouring countries.

The renewable energy industry is already creating new jobs and supporting local businesses but more can be done to capture the full benefits for local communities.

By working together we can make Townsville the Solar Capital of Queensland.

Ross River Solar Farm jolts \$28m into local economy

A MAJOR renewable energy project near Kelso has provided a boost for jobs and the local economy since commencing construction late 2017.

The more than 413,000-panel Ross River Solar Farm, representing over 148MW of DC capacity, will produce enough power for 54,000 homes.

The company behind the project, Ross River Operations, says the project has injected more than \$28 million into the local economy through contracting of local suppliers and businesses.

Construction is at its peak, with 314 people working onsite; 70 per cent being local workers.

JCU Electrical Engineering student Ellen Sacilotto is completing an undergraduate placement at Ross River Solar Farm and said it's a great time to get involved in renewable energy.

“My placement has been really good for learning the ins and outs of how a solar farm works, and all the electrical elements.

“I see longevity in this career; solar will only get more efficient and with more power returning into the grid. As well as growth in the industry, there is personal satisfaction in working with an energy source that is good for the community and the environment.”

Construction is on schedule for completion later this year.



DAM FINE OPPORTUNITY: JCU Electrical Engineering student Ellen Sacilotto at the Ross River Solar Farm, near Kelso.



RECLAIMED POWER: Chipmunks Playland owners Ian and Chris Wattie have used solar to take control of their electricity bills.

Saving money on power bills is child's play

WHEN local business owner Ian Wattie received his monthly electricity bill for December 2017 of \$11,000, he knew something had to give and looked to solar as a solution. The former Ergon linesman owns and operates Chipmunks Playland in West End with his wife Michelle and son Chris. In January, the family invested in a 100kW solar system, and now their power

bills are down to around \$4,000 a month. "The guys at Super Green Solutions estimated how much we could save [with a solar system], and their calculations turned out to be spot on," Ian said. Ian calculates that it will take three years to pay back the upfront cost of installing the large solar array, but they will save more than \$400,000 on

power bills over six years. "It's simple maths," Ian said. "The difference the solar has made is huge, and it meant I could afford to leave my other job at Ergon. "I've now got a bit more time for my six young kids, so it's been good for the family, and a godsend for us. "If you live up here and you haven't got solar you've got rocks in your head."

Pacific health workers empowered by solar



LIGHT BULB MOMENT: YWAM's Jared Hoover on the roof of the charity's Walker Street campus, surrounded by the solar panels that save the organisation \$100,000 each year.



LIFE-CHANGING: PNG-based health worker Sister Antonia used to deliver babies at night using the light of her mobile phone, before YWAM's solar kit was installed at her rural aid post.

RURAL health workers in Papua New Guinea are able to do their jobs more easily, and more safely, thanks to charity organisation YWAM Medical Ships delivering and installing solar kits. Previously, midwives like Sister Antonia would use light from a mobile phone when delivering babies at night in rural PNG. Since 2013, the international medical program has installed solar lighting and power kits in nine rural health facilities in PNG with support from Townsville electrical wholesaler Haymans Electrical which has donated \$30,000 towards YWAM's solar projects.

On home soil, YWAM is also using solar to further the charity's work. YWAM's premises at Walker Street uses a 100kW solar system and a 132kW solar system. YWAM Medical Ships' Property Development Manager Jared Hoover said the decision to install solar has enabled YWAM to enhance its charitable impact. "These systems combined save electricity in excess of \$100,000 every year," Jared said. "Those savings mean more of our resources are able to be invested in providing valuable services to our community and beyond into North Queensland and Papua New Guinea."



ON THE JOB: Nilsen (Qld) electricians Hayden Bertello and Max Williams working at the Ross River Solar Farm.

Solar generates job opportunities in the north

ROSS River Solar Farm will have delivered more than just solar energy once it is completed later this year, with solar generating employment opportunities for workers in the north. The electrical team installing the Ross River Solar Farm alone comprises up to 70 staff, which includes 45 full-time Townsville staff and additional temporary workers, many of whom are

also Townsville locals. Nilsen (Qld) project manager Matt Lewis relocated to Townsville at the start of 2018, lured by Townsville's lifestyle and the opportunity to work on the Ross River project. "Queensland as a state has really embraced the opportunities that solar can provide, not only in clean energy but also in employment and the

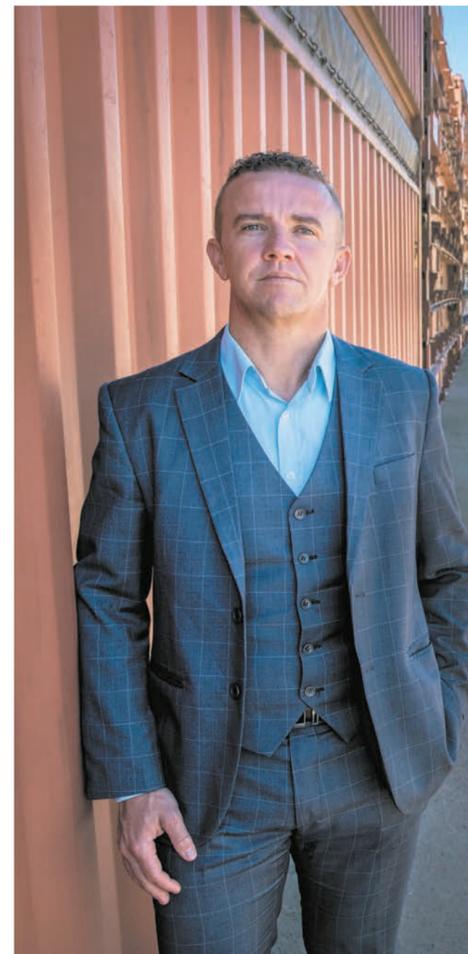
supporting industries around that," Matt said. "For trades people, school leavers or labourers looking for good work with good money, installing solar farms is solid work. Take the opportunity if it's there." The work won't dry up once the Ross River Solar Farm project is complete, with many projects in the pipeline all set to start in late 2018.

Bright sparks pursue careers in energy and solar



SEEING THE LIGHT: Qualified electrician Laura Priest and fourth year electrical apprentice Naomi Bourke have gained valuable hands-on solar experience during their apprenticeships at Horan & Bird. Photo: courtesy of Horan & Bird.

YOUNG people seeking careers in renewable energy now have more opportunity, thanks to energy specialist company Horan & Bird and Townsville's growing demand for rooftop solar. As well as electrical apprenticeships working with solar, the Townsville-founded company offers an Energy Consultant Program targeted at school leavers and sales professionals. Currently, the company employs numerous qualified tradespeople, 10 apprentices, puts on two new apprentices each year, and has five trainees in its Energy Consultant Program. Group manager John Horan said the program was developed three years ago to educate trainees about energy efficiency, solar, energy storage and sales. "Renewable energy is such a new industry and trying to find the right talent with the right core values has been challenging," John said. "There is a real gap in the market for people who don't go to university or do a trade. This [Energy Consultant Program] fills this gap for people who are passionate about the environment." After the program, consultants remain within the Horan & Bird network which now spans throughout Queensland, and a recently opened office in South Australia. John said finding qualified electricians with solar experience is also difficult, hence the company creates its own by training all Horan & Bird apprentices in solar.



GLOBAL SPOTLIGHT: Jinko Solar's Samuel Blackadder at Port of Townsville, welcoming a shipment of solar panels.

Townsville's sunshine attracts global business

THE lure of Townsville's sunshine and lifestyle has proven strong, with major international solar panel manufacturer Jinko Solar's Head of Utility and Projects for Australia choosing Townsville as his home base. Samuel Blackadder, who heads China-based Jinko Solar's projects in Australia, said the company expects to supply over 1GW of solar panel modules into the Australian utility market this year. Currently, Jinko Solar is supplying solar panels to various projects in North

Queensland, including the milestone Kennedy Energy Park at Hughenden, Australia's first solar, wind and storage hybrid renewables project, with plans to ship over a million panels into the region. Samuel said the economics of solar power has fuelled the market's exponential growth over the past decade. "The industry is poised to assume a larger role within Australia and globally as the economic conditions for constructing new solar farms are more beneficial than traditional power

generation." As a result of renewable energy projects in the region, Port of Townsville has experienced significant increase in imports including more than 200 containers carrying solar panels within recent weeks alone. Samuel said that with state and federal government support to update North Queensland's infrastructure, the region, with its abundant sunlight and available land space, could be well-positioned to become a flagship state for solar.

DOLLARS AND SENSE: Clean Energy Finance Corporation's Director of Reef Development Tracey Lines enjoying the sunshine from Castle Hill.



Clean energy makes good economic sense

GROWING up in Innisfail, Tracey Lines didn't expect to be working on a billion-dollar investment program, but today she's doing just that to bring the benefits of clean energy technologies to the Great Barrier Reef catchment area.

From her base in Townsville, Tracey is the local representative for the Clean Energy Finance Corporation's \$1 billion Reef Funding Program — an Australian Government initiative which invests in renewable energy projects, energy efficiency and low emissions technology.

Tracey said clean energy is essential to North Queensland because it reduces emissions and negative impact on the Great Barrier Reef while supporting economic development.

"What I'm really excited about is the potential benefit for agriculture, aquaculture,

tourism and other sectors where reducing energy consumption and energy costs helps businesses improve their operations and competitiveness.

"After all, cost-competitive sustainable businesses support the development of the North Queensland economy."

The CEFC has invested a total of \$320 million in finance to seven large-scale farms in northern Queensland — Ross River, Collinsville, Whitsundays, Hamilton, Clermont, Daydream and Hayman solar farms — valued at over \$1.18 billion.

This is in addition to \$94 million the CEFC has invested in Kennedy Energy Park and \$54 million in the Kidston Renewable Energy Hub. The CEFC has also invested \$28 million in 310 smaller-scale projects throughout the reef catchment area.

Council charges ahead with renewable energy projects

PLANS for the \$2b lithium-ion battery gigafactory proposed for Woodstock in Townsville are charging ahead, with the potential for the modern manufacturing plant to light up Townsville's economy.

Townsville City Councillor Paul Jacob said plans for the proposed battery plant are moving forward, following Mayor Jenny Hill's successful dealings at the recent BIO Convention in Boston.

"The lithium-ion battery factory would mean over 1000 jobs for this town. When in full production of batteries for domestic use and vehicular transport, it will be the largest lithium-ion battery plant in the Southern Hemisphere."

Townsville City Council has

demonstrated its support of renewable energy projects with many completed or underway, including the solar farm supplying Korea Zinc, the under-construction Ross River Solar Farm at Kelso and a new solar farm at Rollingstone.

An early supporter of solar, Paul purchased his first solar kit from the US in the 1980s and built and installed it himself. Today, he is one of many Townsville residents benefiting by selling solar power back into the electricity grid from his home solar system.

"I recommend residents install solar; the systems are a lot cheaper today, and items like pool filters are much cheaper to run using solar during the day," Paul said.



SOLAR KICKING GOALS: Townsville City Councillor Paul Jacob at Tony Ireland Stadium at Riverway, which uses one of the first solar and battery-storage systems installed in Northern Australia.

LARGE-SCALE RENEWABLES IN TOWNSVILLE & DRY TROPICS

3 solar farms already operating

If they all proceed, these new renewable energy projects will deliver:

12 more renewable power stations planned or underway

ELECTRICITY	JOBS & INVESTMENT	RELIEF FOR THE REEF
<p>8.2 megawatt hours of electricity.</p> <p>That's enough to power 1.6 million of Qld's 1.98 million homes.</p>	<p>8000 jobs during construction.</p> <p>380 ongoing full-time jobs.</p> <p>An estimated \$6.4 billion investment.</p>	<p>Climate pollution reductions of 6.5 mega-tonnes per year.</p> <p>That's like taking 1.4 million of Qld's 3.8 million cars off the road.</p>

ROOFTOP SOLAR IN TOWNSVILLE & DRY TROPICS

That's over

28%

of homes have rooftop solar.

Each saves around

\$720

a year on electricity.

\$19m

NOT spent on power bills!

THANKS TO ...

Photography by Rosana Kersh. Stories by Rachel Licciardello.

Solar Citizens wishes to thank everyone who gave their time for this liftout including: the team at Ross River Solar Farm (Palisade Investments, Downer & Nilsen's Electrical); local solar installers Green Energy Solutions and Horan & Bird; Port of Townsville and Northern Stevedoring Services; and many more.

The facts and figures highlighted here are from the report 'Renewable Energy across Queensland's regions' commissioned by Solar Citizens and written by industry analysts Green Energy Markets. Details current at June 2018.