

Lifestyle

SKY'S THE LIMIT HARNESSING SUN'S ENERGY

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The great-great-grandson of a Queensland political pioneer is carving out big dreams on a modern-day frontier – the quest to capture and store vast amounts of solar energy

Simon Kidston has the name to start his own revolution in Queensland. It won't have the same consequences as his great-great-grandfather, William Kidston, who was a key figure in the great shearer's strike that led to the formation of the ALP and went on to a rocky career in politics, twice becoming Queensland premier in the early 1900s.

But Kidston Jr, an executive director with **Genex Power**, is certainly up-ending the mainstream with a project at the disused Kidston gold mine inland from Cairns. The mine, named after his ancestor, sits in what is recognised as the best zone in the country for solar radiation by the weather bureau.

His plan is one of about 20 major renewable schemes in varying stages of development that could change the energy sector forever.

Everything from chicken litter to algae to biomass to solar is vying for offtake agreements, with retailers under a scheme to have 20 per cent of Australia's energy generated by renewables. In Queensland, the push is for 50 per cent by 2030.

The march of renewables is impressive and in what would have been considered heretical thinking a generation ago, Kidston says the progress of projects such as **Genex**'s means there will not be a need for another coal-fired power station in Queensland.

Energy Minister Mark Bailey says the Palaszczuk Government had no plans to build any new coal, base load power stations.

"We are determinedly moving Queensland towards obtaining more of its power from renewable energy sources," Bailey says.

That's a huge ask considering the dominance of coal and gas but the first large-scale solar plant, a \$400 million solar farm, near Ayr, recently struck an underwriting deal with Origin, which will take all the power as well as the renewable energy certificates from the project (to prove a company is meeting the renewable energy target, it is issued one certificate for every one megawatt of clean energy it buys). The 100 megawatt project will create about 200 jobs during construction and power up to 65,000 homes when fully operational. There are already 72 renewable energy projects in Queensland, mostly biomass using sugarcane waste. Only 10 are solar, 11 are hydro, two are wind-powered and there is one geothermal project at Birdsville.

If you consider Australia has the highest average solar radiation of any continent, the lack of large-scale solar is remarkable.

But the public has certainly embraced it. Just last month the State Government released figures showing that rooftop solar panels now had a similar capacity to the Gladstone power station, the state's biggest power plant.

Queensland has one of the highest penetration rates of rooftop photovoltaic panels in the world, with almost 30 per cent of all houses having a system installed (473,000 installations). In the Glasshouse region, north of Caboolture, 56.7 per cent of dwellings have solar PV.

But large scale, commercial solar seems to be lagging and an issues paper commissioned by the State Government says policy intervention would be needed to meet the objective of 50 per cent of the state's energy generated by renewables by 2030.

The difference between renewables and traditional fossil fuels is that solar cannot operate all day, every day and works when the sun is out and only then at a peak efficiency in the afternoon. And that's where projects such as the Kidston scheme show its value.

It is effectively two projects in one. First, there is a 50 megawatt solar project which will use existing transmission lines to feed into the grid. **Genex** is aiming for financial close on that project around September with an expected capital cost of about \$130 million.

A second phase is what is known as pump storage. It will use a 100Mw solar farm to pump water from a low pit of the old mine to a higher pit and when it is needed that then becomes a hydro electricity scheme.

It effectively stores the energy of the 100Mw solar farm to be used when demand is high, in the evenings. A similar project exists at Wivenhoe Dam. Kidston says the elevation of Malcolm Turnbull to Prime Minister changed the game while there had been enormous support from the State Government.

"When we started this company there was a different prime minister and I guess the environment for renewables was very difficult, but now that the renewable energy target has been confirmed and it has bipartisan support, we have seen a very big change in sentiment," Kidston says. And that is reflected in the price for renewable energy certificates, which he says has doubled in a year.

"There is no doubt stronger interest from bankers for projects with power purchase agreements," Kidston says.

"That is one of the key drivers. We are very advanced in concluding a transaction on that but we haven't yet finalised it." The evolution of storage batteries will also change the dynamics but, as Kidston says, at \$17,000 each, they are too expensive.

"They would need to halve and halve again and halve again," Kidston says. A trial of the batteries is under way.