

EXTRA WEEKEND

Green hydro storage hub to boost energy mix in region

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A DERELICT mining settlement in the middle of nowhere is the unlikely site for an innovative renewable energy hub.

But it seems Kidston – also called Oaks Rush – is about to be rediscovered. I was fortunate to accompany Federal Northern Australia Minister Senator Matt Canavan and Genex Power representatives on a tour to Kidston to see and hear about what is happening in this sleepy part of Etheridge Shire between Greenvale, Forsyth and Mount Surprise.

We flew in on a small Hinterland Aviation Grand Caravan aircraft from Townsville, landing smoothly on a packed earth airstrip. From the air, though, you can begin to see what is interesting about this location: two round-shaped patches of cobalt blue water side-by-side in among some hills and disturbed earth (pictured right).

Those patches of blue – the former mining pits of the Kidston gold mine – form the basis of a pumped storage hydro-electricity power station.

Around it will stretch legions of solar panels slowly turning to track the path of the sun, while on a ridge line 40km away huge wind turbines are planned.

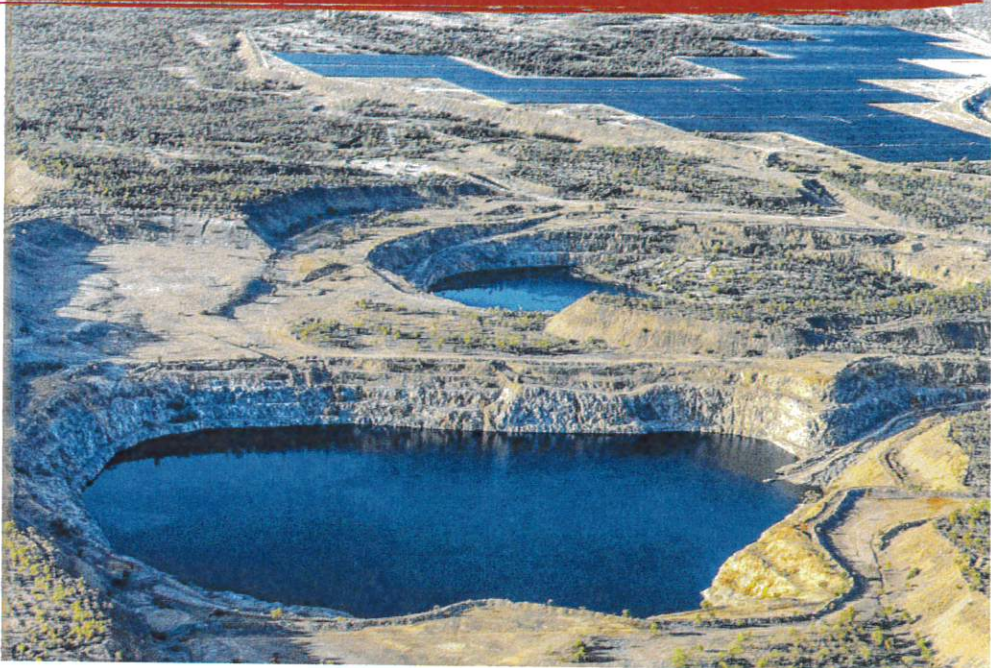
This is the Genex Renewable Energy Hub.

Already there is a 50mW solar farm beside the mine pits feeding electricity through a small 132kV power line back to the Ross substation near Townsville.

Genex Power CEO James Harding describes the hub's hydro centrepiece as "very much like a large battery".

"Pumped hydro is a scheme that acts very much like a large battery using water instead of electrons," Mr Harding says. "Effectively, you take an upper reservoir of water and a lower reservoir of water and you pump your water from the lower to the upper level using the electricity grid when prices are low. When prices are high, in the evening peak for example, you open the sluices and allow the water to run through your generator."

It's the arbitrage between the two electricity prices where the scheme will largely make its money, although Genex has plans to supplement its electricity needs by building a 160mW solar farm to power one of its two 125mW turbines.



PUMPED TO GO



Northern Australia Minister Senator Matt Canavan at the Kidston site with Genex CEO James Harding and chairman Ralph Craven.

The turbines are reversible, generating in one direction, pumping water back in the other.

Also, when the turbines are generating, they will produce enough electricity to power a city the size of Townsville, energy-hungry zinc refinery included, very, very quickly.

Within 30 seconds of flicking a switch, a whopping 250mW of electricity materialises with the ability to keep that on for six to eight hours, when the water has to be pumped back. No other kind of generator can do that.

Senator Canavan, a politician more inclined to promote coal-fired power than renewables, sees the ingenuity in the Kidston scheme.

He sees big benefits in not just providing stability and strength to an electricity grid disrupted by increasing intermittent wind and solar generation, but in a job creation scheme to help get Townsville back on its feet.

It is the biggest investment so far by the Federal Government's Northern Australian Infrastructure Facility, which will provide a \$610 million low-interest loan to largely fund the hydro scheme and an associated high-voltage transmission line that is planned to be built

and partly funded by the State Government's Powerlink corporation.

Senator Canavan says NAIF commissioned accounting group Deloitte to assess the hydro scheme, finding it will save North Queenslanders something in the order of \$500 million over the life of the project by helping to take the peaks off volatile electricity prices.

Mr Harding says the whole of the state benefits by strengthening the transmission network.

Townsville also stands to benefit, big time. It will be the fly-in fly-out employment hub and transport and logistics centre for what could be a \$1 billion project.

Mr Harding says the hydro project will create 350 construction jobs and the transmission line well over 200 jobs during a construction period of three-and-a-half years.

There are 300 jobs in construction of a second solar farm and another 200 jobs for the

150mW wind farm, if it goes ahead.

"If you add those together in construction, potentially over the next three to four-year period, you are looking at over 1000 direct jobs," Mr Harding says.

"The Townsville port will play a major role for all the deliveries to site for the project."

Mr Harding says their funding is largely in place and their contractor, a John Holland McConnell Dowell joint venture, is set to go.

The final "piece of the puzzle" is approval and agreement with Powerlink and the State Government on construction of the 180km high voltage power line needed between Kidston and Mount Fox to link the project to the State's northern transmission network.

When the State Government makes a final investment decision, likely in the coming weeks, Australia's fourth pumped hydro scheme can get under way.



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