

Australia to refurbish abandoned mine

An Australian energy and environmental consultancy has plans to refurbish an abandoned mine in Kidston, converting it into a renewable energy power house.

The firm intends to reuse the craters left by the mining activities for the first pumped hydroelectric energy storage (PHES) system in the world, combined with an integrated [solar](#) farm, Climate Action reported.

Australia invests in RE

Simon Kidston, Executive Director of Genex, said: “We’re not aware of any examples anywhere else in the world where there is a large pumped storage system, or any efficient storage mechanism, with a renewable generation component attached to it – not on the scale we’re talking about.”

Climate Action reported that pumped hydroelectricity represents 99% of the industrial-scale energy storage market globally as it allows solar and wind energy to be stored and then redistributed.

With this in mind, the consultancy firm is seeking to develop a 50MW

solar farm, which is expected to be completed by end of 2017, that will generate enough power to electrify 27,500 homes.

Climate Action explained: *"A 300MW PHES will then be built – with two reservoirs at different heights to allow water pumping between them - and will work for seven-hour cycles every day.*

"The water flows from the higher reservoir – where electricity is sourced from the grid pump water – to the lower when energy demand is more important, driving a turbine in an underground powerhouse, which converts it to electricity."

Pumped hydro storage

According to Climate Action, this system will be the first large-scale 'off-river' system, allowing the cycles to consistently run in a closed loop and minimise environmental impact.

Kidston said: *"We realised environmental issues would prevent damming of rivers in mountains, where most hydro is located... And we also wanted to pursue a low-cost development strategy."*

The company is saving hundreds of millions thanks to the reuse of the existing mining site infrastructure and permits, Climate Action reported.

Prof Andrew Blakers, director of the Centre for Sustainable Energy Systems at the Australian National University, said: “Pumped hydro is by

far the cheapest and most mature storage technology... [Genex' PHEs is] a good model, particularly when combined with co-located PV and wind... However, there are hundreds of sites with much larger height differences between top and bottom reservoirs throughout settled Australia, so it's not the only model.”