Pumped hydro in Queensland ready in 2021

A pumped hydro project that reuses an old gold mine in north Queensland is close to securing federal funding.

The combined solar and pumped hydro generator is set to provide a quarter of the power needed to cover the shortfall from the closure of the Liddell coal-fired power station in NSW and can do it before 2021.

Experts have also identified more than 22,000 prime sites around Australia where more pumped hydro storage could be quickly built.

The Kidston mine project, being built by Genex Power with some assistance from the Australian Renewable Energy Agency, starts with a solar farm that will be ready to send power to households during the coming summer.

Genex executive director Simon Kidston says is first electricity will be generated in the first week of December and it will be brought up to the full 50 megawatts capacity by early February.

The company is finalising its finance to build the second phase of the project, including being close to receiving approval for a loan from the federal government's Northern Australia Infrastructure Facility.

The plan is to build a world-first integration of solar generation and pumped hydro storage, repurposing the two 300m-deep disused mine pits to create 250MW capacity and that can run for six hours continuously.

"It really makes intermittent energy reliable and dispatchable - and that's really the holy grail of the renewable energy industry," Mr Kidston told AAP.

His company had no connection to the goldmine before purchasing the site.

The nearby town was named for his great-great-grandfather, early-1900s Queensland premier William Kidston.

The Finkel review recommended all renewables be backed up with storage, whether batteries or pumped hydro.

Genex has been working on the project for three years, long before the current energy debate blew up or Prime Minister Malcolm Turnbull thought of building Snowy Hydro 2.0.

It hopes to be able to have the full system running by early 2021 - a speedy build partly made possible by the level of infrastructure already in place at the mine site.

It's anticipated the scale of tunnel building involved in Snowy Hydro 2.0 would take about six years to build, meaning it wouldn't be up and running until the mid-2020s.

Meanwhile, a joint ARENA-Australian National University study has listed thousands of sites where other pumped hydro storage could be built, with a total capacity of a massive 67,000 gigawatt hours.

"Australia needs only a tiny fraction of these sites for pumped hydro storage - about 450GWh of storage - to support a 100 per cent renewable electricity system," lead researcher Professor Andrew Blakers said.

Fast-tracking a few of the best sites could mean they would be ready by 2022, when Liddell is scheduled to close.