



EXCITING PUMPED STORAGE FUTURE FOR OPEN CAST COAL MINE

A possible new future for Glenmuckloch mine



2020 Renewables



BUCCLEUCH

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A former open cast coal mine could generate green energy in the future through an exciting proposal to develop an innovative pumped storage hydro scheme.

Bucleuch is working alongside partner organisation 2020 Renewables to develop a pumped storage hydro project at the Glenmuckloch Surface Coal Mine near Kirkconnel in Dumfries and Galloway.

Planning permission for a scheme of up to 400MW in electrical generating capacity

was granted by Scottish Ministers at the end of November 2016.

The Glenmuckloch Surface Coal Mine has ceased coaling and the restoration process is nearing completion.

The site already hosts two community-owned wind turbines. Bucleuch obtained planning approval in May 2017 to build an eight-turbine commercial wind farm at the site.

HOW IT WORKS

The scheme will consist of two reservoirs; one in the hole created as a result of the open cast mining activity, the other at the top of the hill. The approximate height difference between the two reservoirs being 200m.



The mine is now undergoing an extensive restoration process

“ The proposal would create significant local employment during construction and operation ”

Pumped storage hydro works by releasing water from the higher waterbody to the lower one and passing it through a turbine or series of turbines to generate electricity. Water is then pumped back uphill and stored in the upper reservoir until further electricity is required.

This type of hydro storage helps balance electricity supplies by using excess energy during periods of low demand (generated for example by wind farms on warm, windy days, or by nuclear generation at night) to pump water uphill.

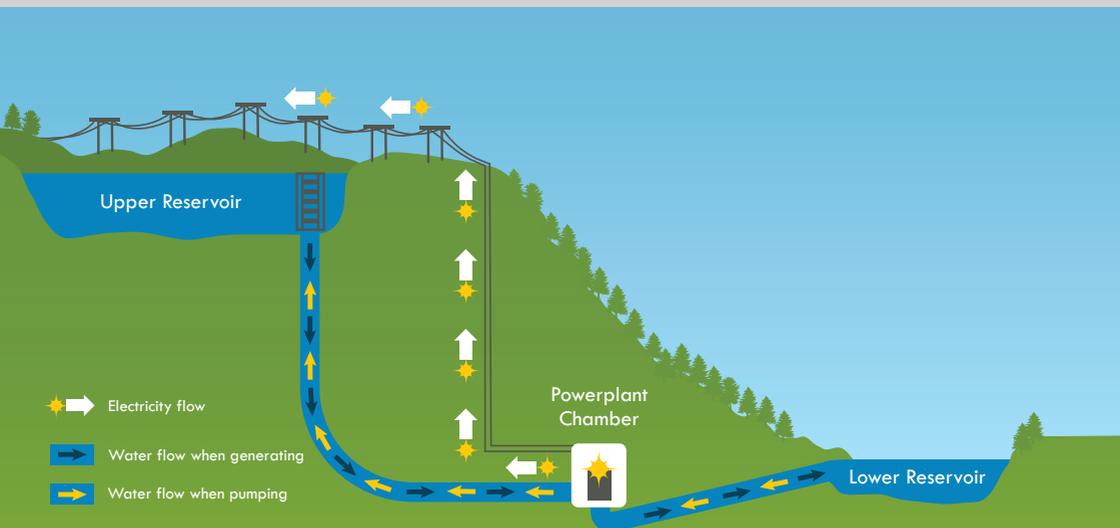
This energy is then stored in the upper reservoir, ready to be released whenever required – particularly at times of peak demand, for example when the nation flicks

the kettle on after Bake Off!

Major pumped storage schemes already exist in Scotland – for example at Foyers and Ben Cruachan – but no new projects have been built in over 30 years.

The Glenmuckloch project is still at an early stage of technical development, however obtaining the planning consent was a significant project hurdle. Work is ongoing to further define the scope of the project, including attributable revenue streams.

The project will create significant employment with around 270 construction jobs over a period of four to five years, plus long term operation and maintenance roles as well.





PROPEL

The Glenmuckloch mine is already home to one successful energy project, known as Propel.

A team of eight S5 and S6 pupils at Sanquhar Academy are deciding how to invest the profits from the turbines at Glenmuckloch Community Energy Park for the benefit of the local area.

A first in Scotland, the community energy park has been designed to provide financial assistance for public groups and organisations across Upper Nithsdale using the revenue produced by the two 100kW turbines on a site adjacent to the Glenmuckloch surface mine.

The 30 meter high turbines have the potential to generate £2.5 million over the 25 year operational life of the site, which will remain with Glenmuckloch Community Energy Park until distributed to local causes.

This task falls to the Glenmuckloch charitable purposes committee – known as Propel – which is run entirely by pupils from the school. They are actively encouraging local groups to make applications for funding.

The Glenmuckloch park was officially launched by business, energy and tourism minister Fergus Ewing in July 2014. The wind turbines began operating in autumn 2015.

