

PUMPED STORAGE FACILITY FOR THE PENTLAND FIRTH TIDAL ENERGY RESOURCE

A suitable site close to the Pentland Firth has been found which would allow the tidal energy to be stored so that the output can be smoothed out before sending it as base load to the inter-connector.

An area of about 4km² on the eastern side of Ben Hope at an altitude of 500m provides the upper reservoir while the Kyle of Tongue 3km further east would provide the lower reservoir. The system could use either fresh water with an efficiency of 75% or sea water with an 80% efficiency. This efficiency increase is accomplished by changing the water level with the tides, pumping up when the reservoir is filled to the higher tide level and generating with a lower tide level in the reservoir. This single scheme may also be able to store some or all of the surplus energy from the wind farms in the Moray Firth.

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