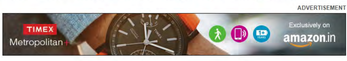
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'Store more energy in water', says Scottish Power

By Roger Harrabin
BBC environment analyst

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Scottish Power's Cruachan plant is a tourist attraction as well as an energy generator

Scottish Power is planning to double the size of its hydro-electric power plant which creates and stores energy.

It says the UK will need much more energy storage capacity as renewables increase on the National Grid.

It says it can add 400 megawatts (MW) of on-demand electricity by building a new dam in front of the existing dam.

But it says the £300-£400m cost is prohibitive unless it can get a guaranteed floor price for its use from the government.

In return, Scottish Power says it will accept a cap on profits.

The Cruachan plant near Oban in Scotland pumps water 400m uphill at night when energy prices from wind farms are cheap.

It then lets the water flow downhill in daytime in order to generate electricity when demand peaks and power prices are expensive.

Scottish Power's Neil Clitheroe told BBC News: "Pumped hydro is ideal because it's relatively cheap, it's virtually instant, and it provides power at scale. We will need much more of this sort of thing when we get more wind power on the system."

Ministers have recognised that energy storage in the UK needs to be radically improved as renewables produce more and more power.


Where's James Bond? The Cruachan plant is a tourist attraction

The Chancellor George Osborne's National Infrastructure Commission will soon offer its recommendations on the issue.

A Department of Energy & Climate Change (DECC) spokesperson told BBC News: "We recognise the potential for storage technologies, including pumped hydro storage, to help us use energy flexibly. Our priority is providing clean, secure energy at the lowest possible price for families and businesses."

Lights on

Scottish Power calculates that its pumped hydro system stores the same amount of energy as seven million car batteries.

Cruachan is the second biggest of four pumped hydro systems in the UK.

It was originally built in 1965 to keep the lights on if a nuclear power plant went down,

It can generate at full load for 14.5 hours, but is now being used more often to smooth peaks and troughs in demand. It can be up to full power in less than a minute.

When it's in operation, water flows from a man-made upland reservoir through turbines in a spectacular cathedral-sized cavern in the middle of the hill. The water exits to Loch Awe.

The firm is arguing that new pumped hydro is needed because of tightening electricity margins, the need for increased capacity and the need to maximise the efficiency of output from wind turbines.

The Cruachan plant is a tourist attraction which is said by Wikipedia to have been the setting for a Bond movie. Scottish Power says James Bond has never appeared in its power station, but it is happy with the publicity.

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