

The Amazing Electric Mountain!



Geography, Science – Renewable energy

Snowdonia is the National Park of Wales. It has lots of mountains and lakes and thousands of tourists visit every year to enjoy walking, camping and climbing.

Hidden in a giant man-made cavern deep inside one of Snowdonia's mountains is an amazing hydroelectric power station. It has six massive turbines driven by water flowing down from a lake high up on the side of the mountain. You can visit the power station on a bus tour from the visitor centre in Llanberris. The mountain is called Mount Elidir, but local people call it Dinorwig, which is Welsh for the electric mountain!

The electric mountain is like a gigantic battery, storing energy until it's needed. There is no pollution because hydroelectric power is clean and doesn't release CO2.

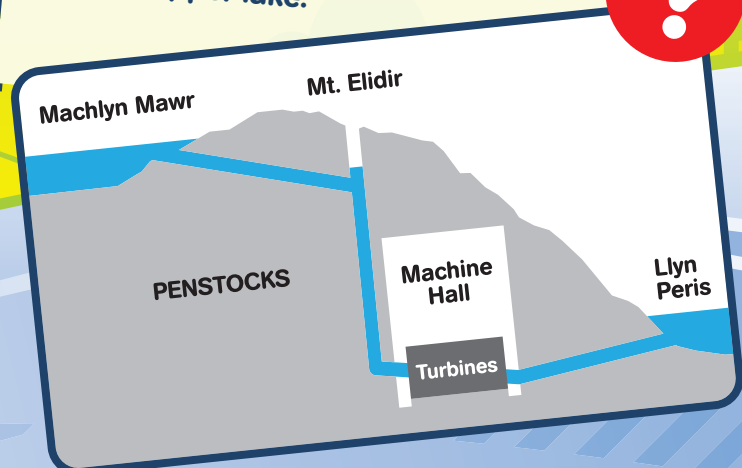
Electrifying facts!

- The cavern is bigger than Wembley Stadium.
- It took 15 years to build and the engineers had to dig out 12 million tonnes of rock to make the cavern.
- The builders used 1 million tonnes of concrete, 200,000 tonnes of cement and 4,500 tonnes of steel.
- The power station can be switched on and start generating electricity in just 16 seconds.
- It can generate enough electricity for the whole of Wales.
- Although the cavern is really huge, there is very little to see on the outside of the mountain apart from a big door and grazing sheep!



How the electric mountain works

Rainwater collects in the upper lake, Machlyn Mawr. When people need electricity, usually in the evening, the penstocks open and water pours down into the turbines, making them spin. The turbines generate lots of energy and the water continues to flow for about 5 hours until all of it has collected in the lower lake, Llyn Peris, down in the valley. At night, when people are asleep, the water is pumped back up into Machlyn Mawr, ready to be used again. It takes about 7 hours to refill the upper lake.



Why do people need electricity?

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Name some different ways that people use electricity.

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2

3

Why do people need more electricity in the evening?

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Your electrical Eco-Traveller mission!

Now that you're an Eco-Traveller, try to cut down on your electricity use because it causes pollution and contributes to climate change. Energy bills are rising, so we all need to be more careful with our electricity. Here are some useful tips:

- Try switching off televisions, computers and electric fires when they are not being used. TVs are often left on 'standby', which wastes energy.
- Lots of people have switched to low-energy light bulbs, but you can save even more power by remembering to switch the light off when you leave the room!
- Instead of turning up the heating, save energy by popping on a jumper instead!
- Many people fill the kettle to the top, even when they just want one cup of tea! They could half-fill the kettle instead, so that it uses half the amount of power.

Can you think of another way to save electricity?

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