

The Eco-Traveller Notes for Teachers – Snowdonia

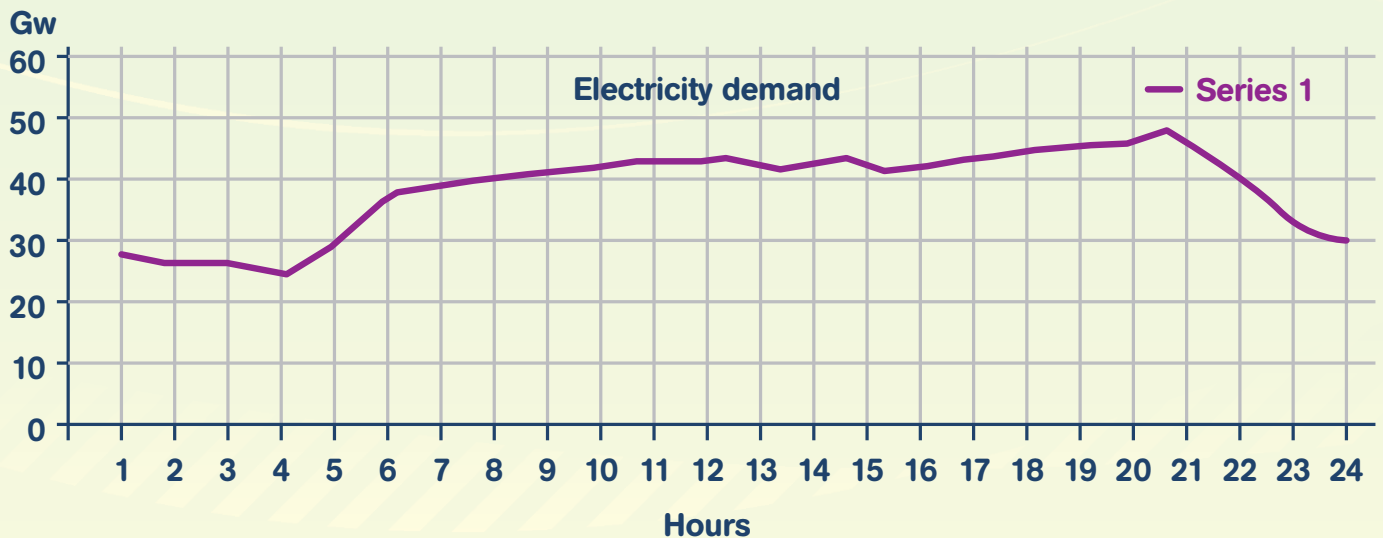


Snowdonia is the largest National Park in Wales. Traditional industries have declined in recent years: Dinorwig once held the largest slate quarry in the world, but it now holds the largest pumped-storage hydro electric power scheme in Europe and generates enough energy for the whole of Wales.

Water is used to generate electricity when people need it the most. In the chart shown below, demand for energy slips down to less than 30 Gigawatts (Gw) after midnight, when most people are in bed and asleep.

When everyone starts to get up in the morning, turning on lights, switching on the kettle and their central heating, demand begins to surge. It rises even higher during the day due to the running of trains, powering factories and offices. Demand reaches a peak nearly 50 Gw. because people are cooking dinner, watching television, heating bathwater, washing clothes and so on.

This is the point at which Dinorwig suddenly opens the penstocks and starts to generate electricity.

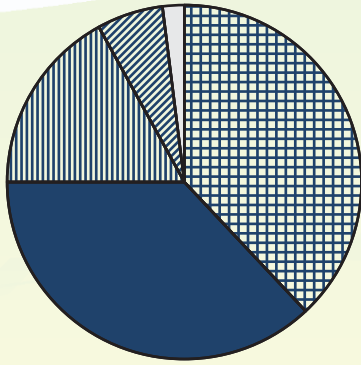


Demand for electricity

| | |
|-------------------------------|-----|
| Transport | 35% |
| Heating | 26% |
| Industrial | 10% |
| Water heating | 8% |
| Lighting and small appliances | 6% |
| Other | 15% |

Where do we get our electricity?

Britain has a National Grid to supply electricity to every home, shop, office and address in the UK. Most of our energy comes from a Thermal Power Station where we burn fossil fuels to create heat and boil the water that drives the turbo-generators in more than 180 large power stations. We burn oil, natural gas and coal to generate 92% of the power we use. The rest comes from Nuclear power stations (6%) and renewable power (2%) such as Hydro Electric Power and wind turbines



UK Energy supply



Energy and the environment.

It is very important for everyone to cut down on the use of energy so that we reduce CO₂ emissions and help to protect the planet from all the harmful effects of pollution. The UK government has promised to cut down on CO₂ by 60% by the year 2050. They want to build more nuclear reactors and increase Nuclear Electric Power (NEP) from 6% to 20% but this will be difficult. There will have to be more Wind Farms and more Tidal Power as well.

Dinorwig and energy demand.

The huge turbines inside Mt. Elidir generate Hydro Electric Power without any CO₂ emissions to pollute the beautiful landscape of Snowdonia. They use energy from other power stations to recharge the upper lake after midnight, but this is cheap off peak energy, the excess base load from thermal power stations just ticking over at night.

Encourage your pupils to do some research either from books or the internet. As a bonus, your pupils can go into their local First Choice store and request more information to complete the activity sheets. Your First Choice store will have some fact sheets and any brochures available on the various destinations for your pupils to cut out pictures if need be. If your pupils go into the stores with their families they can expect to walk away with an Eco-Traveller certificate just for asking for more information.