Renewable resources

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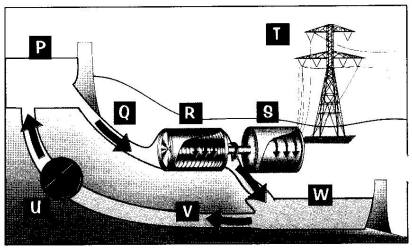
1. The diagram below shows a pumped storage hydroelectric system. Copy out the labels, and match them to the appropriate letters.

generator
national grid
pump
direction during peak demand



turbines
lower reservoir
upper reservoir
direction at night

2. A power-generating company are trying to predict the power requirements for a city during a sporting event. They are using figures for the same event four years previously. The figures that are used are:

Time	1900	1930	2000	2030	2100	2130	2200	2230
Power usage / MW	23	28	35	50	36	34	65	26

   (a) Use the figures to sketch a graph (into your book) of the power usage against time
   (b) About what time did the event finish?
   (c) When was half time?
   The company had a choice of how to deal with the surge in demand. It can switch on an extra boiler at the coal-fired power station, or it can use the pumped storage at the local reservoir.
   (d) Why would the coal-fired option be wasteful?
   (e) When would you advise the company to run water down through the pumped storage station?
   (f) When would it be best to pump water back up through it?

3. Which of the following points are: **advantages**, **disadvantages** or **neither** when deciding where to place a hydroelectric power station?

   (a) consistent and high rainfall
   (b) high population in valley
   (c) steep sided valley
   (d) remote location
   (e) site of rare species of plant
   (f) nearby quarry
   (g) rocks showing evidence of recent earthquake