Power Plants

Apparatus
set of diagrams showing different means of electricity generation, see examples below and on next page

Action
The students examine the diagrams and find similarities between them. They should try to follow the energy conversions involved. They should also try to think of examples of electricity production which do not use a generator.

The Physics
Virtually all commercial electricity production uses a generator. Usually water, either as liquid or as steam, is used to drive a turbine which spins a coil in a generator to produce an emf. Examples include wind power, coal and other fossil fuel power plants, geothermal power and nuclear power plants. Solar cells do not use a generator, they use the photoelectric effect to produce a current. See the demonstration materials for the electricity generator for details on how the emf is produced.

Accompanying sheet

Power Plants

Compare the different means of generating electricity shown.
Which process or processes are used to produce electricity for your home?

What do you notice is similar about all these processes?

Can you think of a means of generating electricity which does not use a generator?
Power generation diagrams to go with Power Plants Activity.

**Hydro-electric power production**

- dam
- river
- turbine
- generator
- to power grid

**Coal power production**

- steam
- coal burner
- water
- turbine
- generator
- to power grid
- cold water
- condenser
- cooling tower