

## 7.2 Renewable sources of energy

**Renewable energy is energy generated from natural resources that cannot run out**, such as the **sun** and the **wind**. **BIOFUEL**, a liquid fuel, is another form of renewable energy derived from biological materials, or **BIOMASS**, such as dead trees, branches or wood chippings.

### Wind Energy

The wind blows, this turns wind turbines. These have become more efficient recently and are found where the wind is strongest such as in the sea or on top of hills.

Wind energy advantage	Wind energy disadvantage
Does not create greenhouse gas during operation Long term potential suggests wind power could produce five times total current global energy demand	High initial installation costs Unsightly Noisy Large amount of land required

### Solar Energy

Solar energy refers to the whole concept of harnessing sunlight using the sun's energy. This can then be used to generate electricity, heat water and buildings and even cook in solar ovens. A solar cell converts the sun's energy into electricity using the photovoltaic effect, which creates a voltage due to the cell being directly exposed to the sun's radiation.

Solar energy advantage	Solar energy disadvantage
Can be placed out of sight on roof tops Once installed and paid for all energy is free Requires little maintenance Can be installed along roadsides acting as a noise barrier	Expensive to install Supply can be reduced by cloud cover Less useful in countries with fewer sunshine hours

### Biomass

Biomass is generally used in power plants as a combustible fuel. Wood is a biomass material and has been used for thousands of years as a heat source for cooking. Biomass also includes biodegradable wastes that can be burnt as fuel.

Biomass advantage	Biomass disadvantage
Leftover parts of food crop can be used	Large amount of land required to produce sufficient crops Not ideally suited for fuel Burning wood produces soot