Energy & the Environment

The Children's University of Manchester

Advantages & Disadvantages

Coal

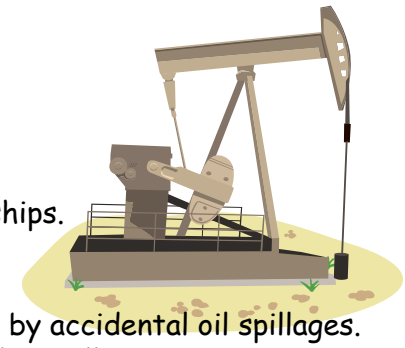
Advantages

Coal can be found in lots of places in the world and there is still plenty in the UK.
Coal can be easily transported to the power stations.
Coal is a relatively cheap energy source.

Disdvantages

To dig up coal, we have to create mines which can be dangerous and not very nice to look at.
Transporting coal by lorry and train from the mine to the power station causes pollution.
Burning coal produces polluting gases like sulphur dioxide which make acid rain.
Of all energy sources, burning coal releases the most greenhouse gases which may add to global warming.
Coal is a non-renewable source and will run out in about 100 years.
Coal miners can be affected by black lung disease or pneumoconiosis and also emphysema if they breathe in too much of the coal dust.

Oil and Natural Gas



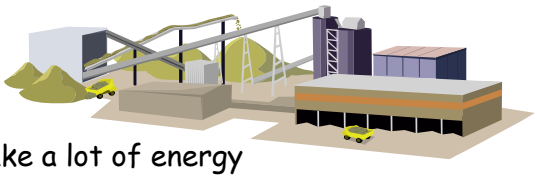
Advantages

Oil and natural gas are found in lots of places in the world.
We can transport oil and gas in pipes and by using tankers or ships.

Disdvantages

Environmental damage can be caused when building the rig and by accidental oil spillages.
Oil and gas are not renewable, so once the supplies are used, they will run out.
Burning these fuels releases greenhouse gases into the air. This may add to global warming.
The price of oil and gas will increase because supplies are running out and lots of people will want it
Working on an oil or gas rig can be dangerous due to the risk of explosions and bad weather.

Nuclear



Advantages

Nuclear fuel does not make harmful greenhouse gases.
You only need a very small amount of nuclear fuel to make a lot of energy

Disdvantages

The waste that is produced when using nuclear fuel is radioactive and very harmful. It needs to be disposed of carefully
Nuclear power stations are at risk from terrorist attack and sabotage.
World uranium supplies may run out in about 50 years.

Wind

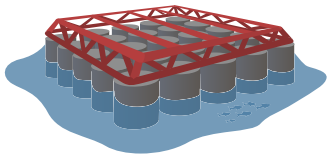
Advantages

Wind is free and will not run out so the cost is in building the wind turbine.
Wind power generation does not create greenhouse gases
There are very few safety risks with wind turbines.

Disdvantages

We can only use windmills in areas where there is a lot of wind. Sometimes there may be days where there is little wind.
We need a lot of turbines to make a lot of electricity.
Some people don't like the way wind turbines look, they think they spoil the countryside.

Wave



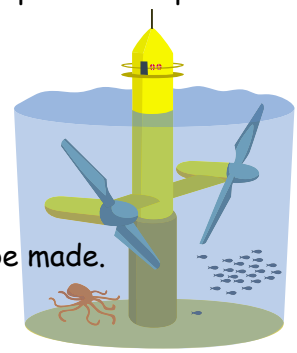
Advantages

Waves are free and will not run out so the cost is in building the power station.
Wave power does not produce greenhouse gases.
There are very few safety risks with wave power generation.

Disdvantages

Waves can be big or small so you may not always be able to generate electricity.
You need to find a way of transporting the electricity from the sea onto the land.
Not many people have tried to generate electricity this way yet so the equipment is expensive.

Tidal



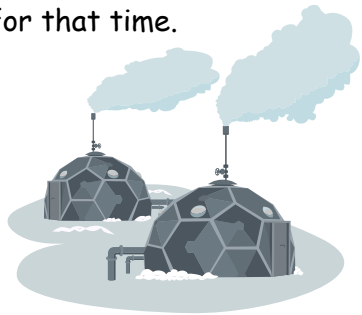
Advantages

Tides are free once the power station has been built and will not run out.
No greenhouse gases are produced when we make the electricity.
We know exactly when the tides happen so we know when electricity will be made.

Disdvantages

You may need to build a large wall called a dam to make the water flow through the generators. This may not be good for plants and animals that live nearby.
The tides only happen twice a day, so can only produce electricity for that time.

Geothermal



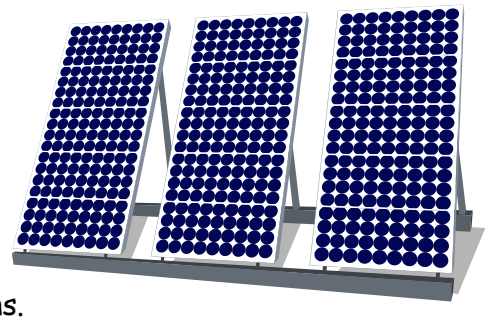
Advantages

Geothermal energy does not produce greenhouse gases
The energy source is free and will not run out

Disdvantages

There are not many places where we can build geothermal power stations
Harmful gases and minerals may occasionally come up from the ground below. These can be difficult to control.

Solar



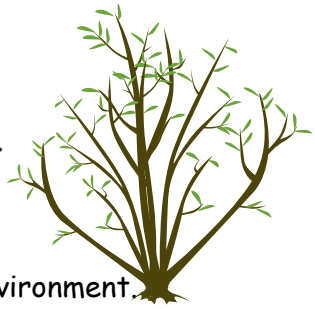
Advantages

The energy from the Sun is free.
The sun does not produce greenhouse gases.
The sun will always be there during our lifetime.

Disdvantages

It is relatively expensive to build solar power stations.
When it is cloudy or at night there is not enough light so no electricity can be made.
Some people don't like the look of solar panels.

Biomass



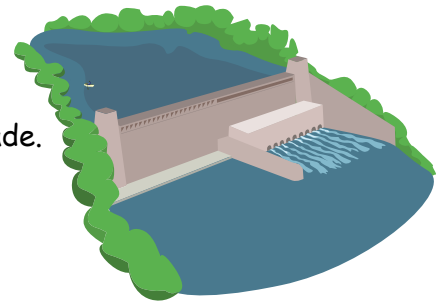
Advantages

The fuel is cheap and can use things that we might otherwise throw away.
We can find waste everywhere and should not run out.

Disdvantages

When the fuel is burned greenhouse gases are made which pollute the environment.
Sometimes people grow biomass crops where we could grow food.
We may not have enough space to grow enough biomass fuel.

Hydro-electric



Advantages

When the electricity is generated, no greenhouse gases are made.
The water used is free.
It is a renewable energy source.

Disdvantages

The dam is expensive to build.
By building a dam, the nearby area has to be flooded and this could affect nearby wildlife and plants.
If it does not rain much we may not have enough water to turn the turbines.