

AQA Physics GCSE

4.1.3 - National and Global Energy Resources

Flashcards

What is a renewable energy resource?

What is a renewable energy resource?

An energy source which can be replenished as it is being used up.

Give **four** examples of renewable energy resources.

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1. Wind Energy
2. Hydro-Electricity
3. Tidal Energy
4. Solar Energy

Give an example of a non-renewable energy resource.

Give an example of a non-renewable energy resource.

Fossil fuels (for example coal, oil and gas).

What are the advantages of generating power using gas rather than coal?

What are the advantages of generating power using gas rather than coal?

- Flexible Generation: Gas power stations have short start-up times so can be switched on/off more readily
- Lower emissions of carbon dioxide

State **two** disadvantages of using renewable energy resources to generate power.

State **two** disadvantages of using renewable energy resources to generate power.

- Output often determined by external factors (like wind speed), so supply is uncertain
- Generating power through other means is often more efficient and economically beneficial

**Explain the environmental impacts of
burning fossil fuels.**

Explain the environmental impacts of burning fossil fuels.

- Carbon Dioxide contributes to the greenhouse effect, and causes global warming
- Sulphur Dioxide leads to acid rain, which can damage buildings and crops

State **three** advantages of fossil fuels as an energy resource.

State **three** advantages of fossil fuels as an energy resource.

1. Reliable: Not dependent on external factors so can generate power anytime
2. Can produce large amounts of energy for a given quantity
3. Still relatively abundant, so cost-effective

State **three** advantages of nuclear power.

State **three** advantages of nuclear power.

1. Very large amounts of energy for relatively small quantities of fuel
2. Doesn't release greenhouse gases and so doesn't contribute to climate change
3. Low fuel costs

State **three** disadvantages of nuclear power.

State **three** disadvantages of nuclear power.

1. Produces nuclear waste which is harmful to humans & must be safely stored for centuries.
2. Non-Renewable energy source
3. Risk of nuclear accidents, which have fatal consequences on humans and the environment

How does hydroelectric power produce energy?

How does hydroelectric power produce energy?

- Rainwater collects behind a dam
- When this water is released, it is used to turn a turbine
- This turbine turns a generator which produces electricity

What are some disadvantages of using biofuels?

What are some disadvantages of using biofuels?

- When plants are burned or decay they release CO₂
- In order to grow biofuels, you need to destroy land which leads to problems because:
 - The land could have been natural habitats
 - Destroying land may involve burning plants growing on it, which would release CO₂
- Growing biofuels reduces the land available for growing food

What are the advantages of tidal energy sources?

What are the advantages of tidal energy sources?

- They do not produce greenhouse gases
- They are quite reliable, as tides happen
twice a day
- They are cheap to run as tides are
natural, and so are free

What are the disadvantages of hydroelectric power?

What are the disadvantages of hydroelectric power?

- The dam may cause flooding
- It can cost a lot to install the required infrastructure

What are some advantages of solar panels?

What are some advantages of solar panels?

- They don't cause harm to the environment
- They are a renewable resource
- They can be used in remote areas where other types of energy are less accessible

Give examples of social factors which may act as a deterrent for certain types of energy production.

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- Visual Pollution
- Sound Pollution

(both of these are disadvantages of wind farms)