

UNDERSTANDING THE ENVIRONMENT

ENVIRONMENTAL IMPACTS OF DIFFERENT POWER SOURCES

GCSE GEOGRAPHY - Worksheet 4

Links with NEAB

Syllabus:

(A) (2) (B) (iv) Industry and the Environment

(B) UK - Electricity Generation

(C) (E 3) Power Generation in the UK

Aims and Objectives:

The idea of a natural resource and its finite nature.

Energy - the renewable nature of sources.

The impact of energy development on the environment.

Resources:

Disc2 - Exploring Environmental Problems

ALTERNATIVE POWER SOURCES

Disc 2 4.2.4 New and Renewable Sources of Energy

Look at Glossary mode

1. Using glossary mode define "Renewable" and "Non-renewable".

Renewable

Non-renewable

2. Give examples of renewable sources of energy.

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3. What are:

- a) the advantages of hydroelectric power (hydropower)?

- b) the disadvantages of hydroelectric power (hydropower)?

4. What are some of the disadvantages of wind power?

Despite these disadvantages wind power schemes are cheap to run and environmentally clean.

5. What are:

- a) the advantages of solar power?

- b) the disadvantages of solar power?

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Disc2 4.2.7 Energy - Environmental Impacts

Look at Figure (i)

6. Using figure (i) which types of power have the highest environmental impacts (choose substantial and significant effects) and which the lowest? (Choose 3 of each).

7. What conclusions can you therefore draw regarding the most environmentally friendly and least environmentally friendly power stations (use the words renewable and non-renewable sources of power in your answer).

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A COMPARISON OF POWER STATIONS USING DIFFERENT FUELS

Disc2 2.1.5 Economic Cost-Benefit Thinking for Option Appraisal

Look at Figure (iii)

8. Using figure (iii) answer the following questions:

Which of the types of power stations:

- a) Produces most community facilities?
- b) Benefits the local community most?
- c) Costs most to construct?
- d) Cost most to operate?
- e) Has least effect on the local environment?
- f) Has least effect on the global environment?
- g) Costs most to decommission or demolish?

CASE STUDY OF NUCLEAR POWER STATIONS

People have different opinions about the value and safety of nuclear power stations.

Disc2 4.2.6 Energy - Energy Issues: Developed Countries

Look at page 4-6

9. In 1994 what percentage of primary energy did nuclear power stations provide worldwide?

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10. What was the vision of nuclear power just after World War II

11. Name two reasons why nuclear power stations are less popular today. (For further explanation of health risks see Disc2 5.4.4 Radioactivity).

12. Give "Greenpeace's opinion of them.