

Subject: Geography
Year: GCSE **Term:** 2a
Topic: Consuming Energy Resources

Lesson Sequence

1. Classifying energy resources
2. Uneven resource distribution / patterns
3. Rising demand for oil
4. Oil and geopolitics
5. Exploiting ecologically sensitive / isolated areas
6. Energy efficiency
7. Alternative energy
 - a. Solar
 - b. Wind
 - c. Tidal
 - d. Biomass / Nuclear
 - e. Geothermal
 - f. Water (hydro)
8. Changing attitudes

Key Assessments

1. Exam paper 1
2. Past Exam paper.

Core Texts

Edexcel Geography B (9-1)
John Hopkin (ed.); Pearson

Key Words

alternative energy resources	Energy resources that are alternatives to using fossil fuels	fracking	A process that involves drilling down into the Earth and using a high-pressure water mixture to release gas trapped inside rock
biofuels	Fuel made from plant oils and waste material and can be used to power diesel vehicles and generate electricity	groundwater	Water stored underground in rocks and soil
biomass	The mass (weight) of all the living things in an ecosystem	hydro-electric power (HEP)	The use of fast flowing water to turn turbines which produce electricity
bitumen	A black, sticky, tarry substance	kinetic energy	Energy generated as a result of movement
carbon footprints	Measurement of all the greenhouse gases an individual produces expressed as tonnes (or kilogram) or carbon dioxide equivalent	non-renewable	Sources of energy such as coal, oil or natural gas – that cannot be ‘remade’. It would take millions of years for them to form again
combined heat and power (CHP) generators	An efficient method of generating electricity and using the heat from the process	OPEC	The Organisation of the Petroleum Exporting Countries is an inter-governmental organisation for oil producers and exporters. When they work together, its members have immense power to influence oil prices /supplies.
congestion	The large volume of slow-moving traffic that clogs up roads	recyclable	Energy resources, including biofuels and nuclear, that can be reused, so will last into the future
ecological footprint	A measure of the impact of human activities, expressed as the area of productive land and water required to produce the goods consumed and the wastes generated	renewable	A natural resource such as timber or solar energy that will be regenerated by the environment
flow resource	Resources such as wind, HEP or tidal energy that is used as it occurs then replaced	reserve	The estimated amount of resources left which can be extracted
fossil fuel	Energy resource such as coal, oil or natural gas that was formed from the remains of plants and animals that lived millions of years ago	stock resource	A non-renewable resource like coal that can be used only once, so it will eventually run out

KEY POINTS

Resource classifications:

- Renewable, non-renewable and recyclable
- Fossil fuels vs alternative energy resources

Distribution factors:

- Geology
- Relief and climate
- Accessibility and development

Patterns / variations of use:

- Economic development and sectors
- Traditional fuel sources

Using energy wisely:

- Reducing energy demand
- Energy-efficient transport systems

Changing attitudes:

- Stakeholders: TNCs, climate scientists, governments, consumers and environmental groups.

Key Inquiry Questions

1. How can we classify energy resources?
2. What are the environmental impacts of extracting these resources?
3. **Why is access to energy resources uneven around the world?**
4. Can we cope with the rising demand for oil?
5. **How are oil supplies and prices affected by geopolitics?**
6. Why are we exploiting ecologically sensitive and isolated areas?
7. **How can we be more energy efficient?**
8. What are the costs and benefits of alternatives to fossil fuels?
9. How are attitudes to energy and environmental issues changing?

Mini-case study – The East Siberia-Pacific Ocean (ESPO) geopolitics of oil