Classifying resources key words:	People exploit natural resources:			Global distribution of natural resources	UK distribution of natural resources
• **Biotic:** a resource that was once living (e.g. coal, oil, gas) • **Abiotic:** a resource that has never lived (e.g. water, sun) **and** • **Renewable:** a resource that is infinite and will never expire/run out (e.g. HEP, solar, wind, biomass, geothermal energy) • **Non renewable:** a resource that is finite and will expire/run out (coal, oil, gas and nuclear)	• **Fishing** for food • **Extracting fossil fuels** for energy • **Deforestation** for energy/building materials, materials • **Farming** for food			**Fish** • Countries with coastlines e.g. UK, Ireland • Landlocked countries without salt water fish	**Fish** • North Sea • English Channel
	Patterns of consumption • The developed world consumes more than it produces • The emerging world has a growing demand for resources but produces lots of resources • The developing world produces enough to meet the needs of themselves (subsistence)			**Food** • Temperate climates e.g. USA, UK, Europe • Extreme climates= deficit e.g Sahel Region in Africa including Sudan	**Food** • Arable land in the east/south east • cattle/sheep in the north of England, Scotland and Wales
				Renewable energy • Coastal areas • Large rivers e.g. China, USA, Brazil • High pressure areas (solar)	Water • Water distribution between the north and the south of England • More reservoirs in the North
	Food The largest consumer of food is the USA	**Water** The largest consumer of water is the USA	**Energy** The largest consumer of energy in the world is China		
Impact of fishing	Reduced biodiversity in the marine ecosystem Pollutants in the water (reduced water quality) Reduction in coral and kelp function leads to ocean heating	**Impact of deforestation**	Reduced biodiversity due to habitat loss Soil erosion as trees keep soil structure Soil erosion as trees intercept precipitation	**Non renewable energy** • Oil – North Sea • Gas – North of England, Scotland • Coal – North of England	**Renewable energy** • Rivers such as the Severn • Wind –coastal areas but throughout the country as between Hadley and Ferrell Cells and influenced by the jet stream • Solar – flat land in the east of England
		Impact of water extraction	Subsidence Drought Conflict	**Key words for distribution of natural resources** • **Deficit =** the amount by which something is too small/lack • **Surplus =** the amount of something left over when needs have been met/ excess	**Non renewable energy** • Oil – North Sea • Gas – North of England, Scotland • Coal – North of England

Define:

- State the meaning of a term
- Usually worth 1 mark in an exam or appear as part of multiple choice questions

1. Deforestation
2. Deficit
3. Surplus
4. Biotic
5. Abiotic
6. Renewable
7. Non renewable
8. Demand
9. Supply

Describe

- Give an account of the main characteristics of something or the steps in a process. Statements in the response should be developed but do not need to include a justification or reason.
- Usually up to 3 marks

1. The distribution of UK's natural resources
2. The distribution of the UK's energy resources
3. The distribution of the UK's food resources
4. The distribution of the UK's water resources
5. The global distribution of natural resources
6. The global distribution of renewable energy
7. The global distribution of non renewable energy

Suggest

- Apply understanding to provide a reasoned explanation of how or why something may occur. A suggested explanation requires a justification/exemplification of a point.
- Suggest one is usually worth 3 marks so you must use terms like 'this means that' and 'because'
- Usually 2-3 marks on an exam

1. One impact fishing has the marine ecosystem (3)
2. One impact deforestation has on soil (3)
3. One impact water exploitation has on people (3)
4. One impact water exploitation has on the environment (3)
5. One reason why the emerging world is struggling to meet it's resource demand (3)

Explain

- Provide a reasoned explanation of how or why something occurs. An explanation requires a justification/exemplification of a point.
- Usually worth 2 or 4 marks

1. 2 reasons why China is the biggest consumer of energy (4)
2. 2 reasons why human exploitation of resources affects the biosphere (4)
3. The north of UK is said to be more resource rich than the south of UK (2)
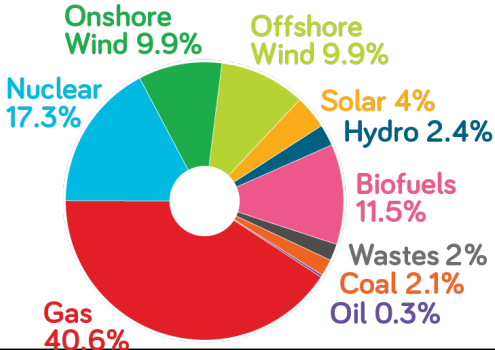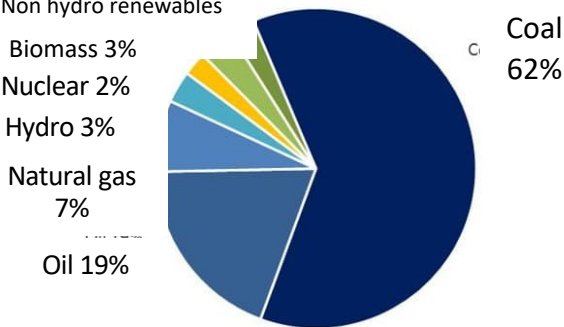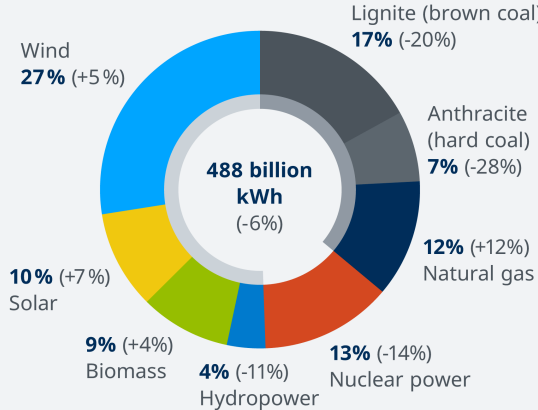
				COAL	
Impact of farming	Soil pollution Run off Leaching into river systems Leaching into groundwater stores	**Impact of extracting fossil fuels**	Reduced air quality GHG leads to acid rain, which affects the water quality Acid rain can lead to the decay of plants GHG emissions lead to ocean heating, global heating which can cause drought, extreme weather etc	Cheap to extract Provides low skilled jobs When burned, provides lots of energy	Extremely polluting Will only last until 2060 Releases green houses gases; methane, nitrous oxide and carbon dioxide when burned
Wind		**HEP**		**OIL**	
Once set up, is cheap to run Will never run out (infinite) Can be done on a small scale or larger scale	When the wind gets too extreme, they have to be turned off to comply with safety measures Birds fly into the turbine blade, Has to be developed/maintained by highly skilled employees	Once set up, is cheap to run Will never run out (infinite)	People are displaced to make room for large reservoirs and dams Can disrupt river processes If the dammed area isn't cleared properly before flooding, the water can be polluted Has to be developed/maintained by highly skilled employees	Produces lots of energy Can be used in a variety of different ways Not as polluting as coal Provides low skilled work for extraction	Will run out by 2052 Releases green houses gases; methane, nitrous oxide and carbon dioxide when burned When spills occur, they can have huge impacts on ecosystems
				GAS	
				Abundant when using new methods (hydraulic fracking) Not as polluting as oil and coal Provides low skilled work in extraction	Will only last until 2060 Releases green houses gases; methane, nitrous oxide and carbon dioxide when burned
Geothermal		**Solar**		**NUCLEAR**	
Once set up, is cheap to run Will never run out (infinite)	Can only be used in areas with tectonic activity High initial costs Has to be developed/maintained by highly skilled employees	Once set up, is cheap to run Will never run out (infinite) Can be done on a small scale or larger scale Has to be developed/maintained by highly skilled employees	Expensive to set up on a large scale Large areas of flat land are used / have to be cleared Has to be developed/maintained by highly skilled employees	Cleanest NR – not as polluting as fossil fuels Will run out but not for another 200 years Nuclear disasters are rare unlike oil spills	Difficult to produce Waste is toxic Requires state of the art technology so is expensive Requires highly skilled workers Will run out in 200 years

State

- Usually worth 1 mark

- Recall or select one or more pieces of information.

1. State one advantage of a named non renewable resource (1)

2. State one disadvantage of one named non renewable resource (1)

3. State one advantage of one named renewable resource (1)

4. State one disadvantage of one named renewable resource (1)

5. State one impact of farming (1)

6. State one impact of extracting fossil fuels (1)

Examine

- Break something down into individual components/processes and say how each one individually contributes to the question's theme/topic and how the components/processes work together and interrelate.

- Usually worth 8 marks

1. The reasons why nuclear is the most favoured non renewable resource (8)

2. Examine the reasons why renewable energy is not as widely used around the globe (8)

UK energy mix

What is it? **38% renewable**	Why?	How has it changed?	Is it sustainable?
Onshore Wind 9.9%, Offshore Wind 9.9%, Nuclear 17.3%, Solar 4%, Hydro 2.4%, Biofuels 11.5%, Wastes 2%, Coal 2.1%, Oil 0.3%, Gas 40.6%	• Fracking technologies increasing (human factor) • Access to oil and coal depleting (physical) • Abundant gas reserves (physical) • London Array = wind (physical factor) • Reduction in unclean non renewables due to Paris Agreement targets (human factor) • Increase in quaternary sector work	• London Array • Fracking reduced reliance on coal and imported oil	• Not at present • 60% non renewable • Trend towards fracking reduces chances of a more sustainable energy mix in the near future

China's energy mix

What is it? **88% non renewable**	Why?	How has it changed?	Is it sustainable?
Non hydro renewables, Biomass 3%, Nuclear 2%, Hydro 3%, Natural gas 7%, Oil 19%, Coal 62%	• Rising population (human) • Economic growth (human) • Abundance of coal (physical) 36% of the world's reserves • TNCs who are concerned with profit over environmental consciousness (human) • Signed the Paris Agreement. (human) • PRC party in charge for 50 years (human) • 3rd largest river • High pressure system over the Gobi	• More renewable technology • Three Gorges Dam • Gobi Desert solar power	• Not at present • Still over 50% non renewables • Coal is the dirtiest energy source • Acid rain affecting the rest of east Asia

Germany's energy mix   50.5% renewable

Is it sustainable?	Why?	How has it changed?	
• Yes • Needs to do more but is one of the most sustainable energy mixes in the world	• Energie wende • Acid rain • Energy shortages; oil shock, nuclear capacity • Fukishima • Physical factors; poor coal, windy conditions, coastal north	• Bavaria Solar Park • Black Forest wind turbines • More quaternary workers • Population voting for green policies	Wind 27% (+5%), Lignite (brown coal) 17% (-20%), Anthracite (hard coal) 7% (-28%), Natural gas 12% (+12%), Nuclear power 13% (-14%), Hydropower 4% (-11%), Biomass 9% (+4%), Solar 10% (+7%), 488 billion kWh (-6%)

Compare

- Find the similarities and differences of two elements given in a question. Each response must relate to both elements, and must include a statement of their similarity/difference.

- Usually worth 4 marks

1. The energy mix of the UK and China
2. The energy mix of the UK and Germany
3. The reasons why China and the UK have different energy mixes
4. The reasons why the UK and Germany have different energy mixes

Evaluate

- Usually worth 8 marks
- Measure the value or success of something and ultimately provide a substantiated judgement/conclusion. Review information and then bring it together to form a conclusion, drawing on evidence such as strengths, weaknesses, alternatives and relevant data.

1. Evaluate the reasons why different countries have different energy mix

2. Evaluate the methods used by emerging and developed countries to sustainably manage their energy mixes