Global Demand for Energy

Energy consumption is the availability and use of energy. Energy demand is the need or desire for energy. When demand exceeds consumption then shortages result.

Sources of demand

- Energy is used for a wide variety of purposes, generating electricity, transport, industry and in homes or domestic usage
- Oil production= ½ transport and 1/3 to homes
- Coal production= 2/3 to generate electricity in thermal power stations
- Gas is even= 1/3 electricity generation, 1/3 industry and 1/3 residential with a small amount in transport
- Biomass production= 2/3 residential or commercial uses
- Nuclear and hydro energy= 100% electricity generation

Rising consumption

- The greater the demand, the greater the consumption
- During the 20th century, energy demand increased tenfold
- By 2050 it is expected to double and reach an annual level of 900 exajoules. (In 1900 it was only 50 exajoules!)
- Much of this will be from unrenovable sources, but some from renewable sources
- This increase in consumption is from population growth, economic development, especially industrialisation and rising standards of living, especially in LIC
- A graph shows that USA and Japan have the highest levels of economic development, in terms of GDP, yet USA uses twice as much as Japan
- Although Saudi Arabia has a low level of economic development it uses the same amount of power as Australia

Future trends

- Future increases in energy demand are unlikely to be even
- China and India have the largest rises, while countries in western Europe will reduce their demands as they improve in efficiency and energy costs rise
- Energy consumption in the developing world will double by 2020
- Energy consumption in the developed world will increase by 1/3 by 2020
- This will make energy consumption equal in the two worlds
- (First world is capitalist, second world is communist and third world are developing countries)

CASE STUDY: Energy poverty

- 2 billion don’t have access to a modern energy supply and 1.6 billion live without electricity
- In rural areas of India where 70% of the population live, energy often isn’t clean or efficient
- Most gather solid fuels such as wood or dung for indoor cooking
- This may have a low carbon footprint, but can cause serious health problems
- In the UK, energy is needed for heating and lighting yet 5 million households are not connected to the mains gas network, of which most rely on liquefied petroleum gas
- There is some energy poverty in the UK as winter heating allowance is paid to pensioners by the government each year