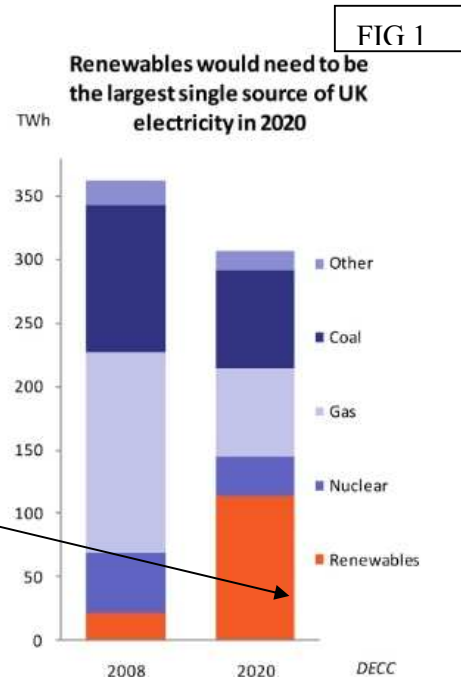


Investigate how renewable energy and energy efficiency will contribute to a more sustainable future

Part 1

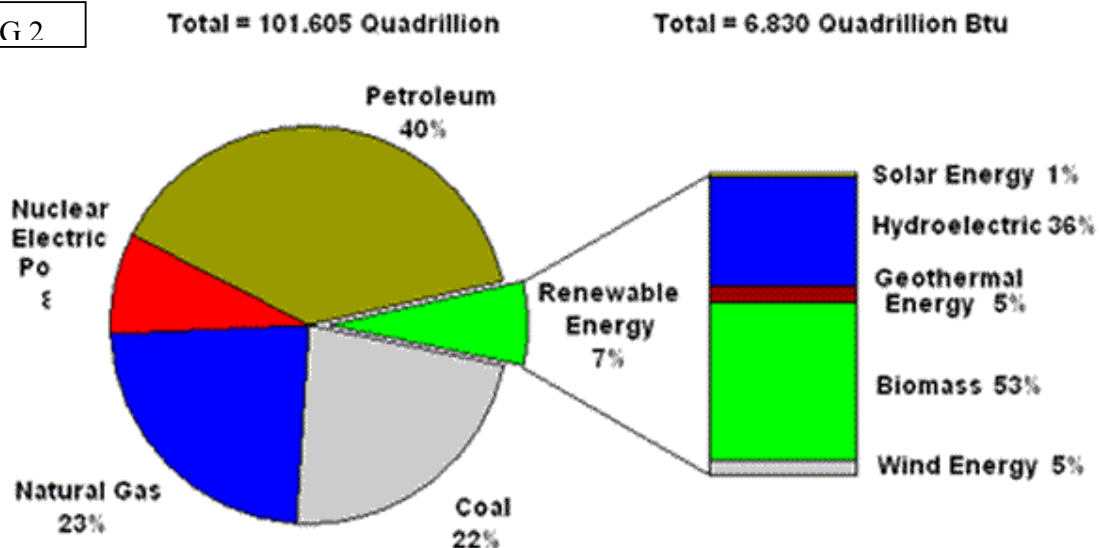
Within the next 20 -30 years it is predicted that with current rates of energy consumption and declining quantities of oil, coal gas there will be a far greater need to find more sustainable sources of energy. This has lead to an increased push for the development of renewable sources of energy. Predictions have been made that we need to increase the amount of renewables from 25TW/h to 125TW/h (see Fig 1)

Our energy supply in 2007 saw just 7% coming from renewable sources compared to a considerable reliance in Oil with 40%. (see Fig 2)



The Role of Renewable Energy Consumption in the Nation's Energy Supply, 2007

FIG 2



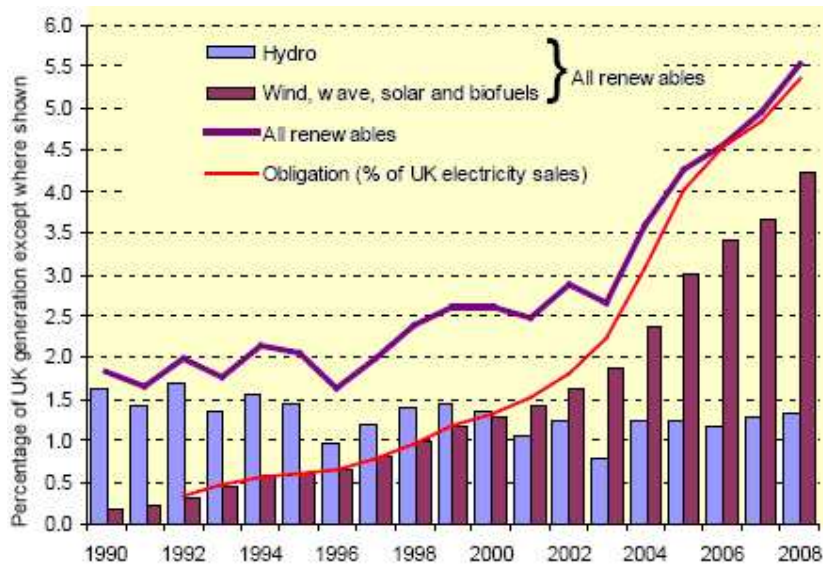


FIG 3

Fig 3 shows the growth in the generation of energy from renewable energy sources. Hydroelectric power was seen as the possible answer to providing the UK with renewable energy. Wind power, solar and bio fuels have increased in production with continual steady growth since 1990, with these energy sources exceeded hydroelectric power since 2000.

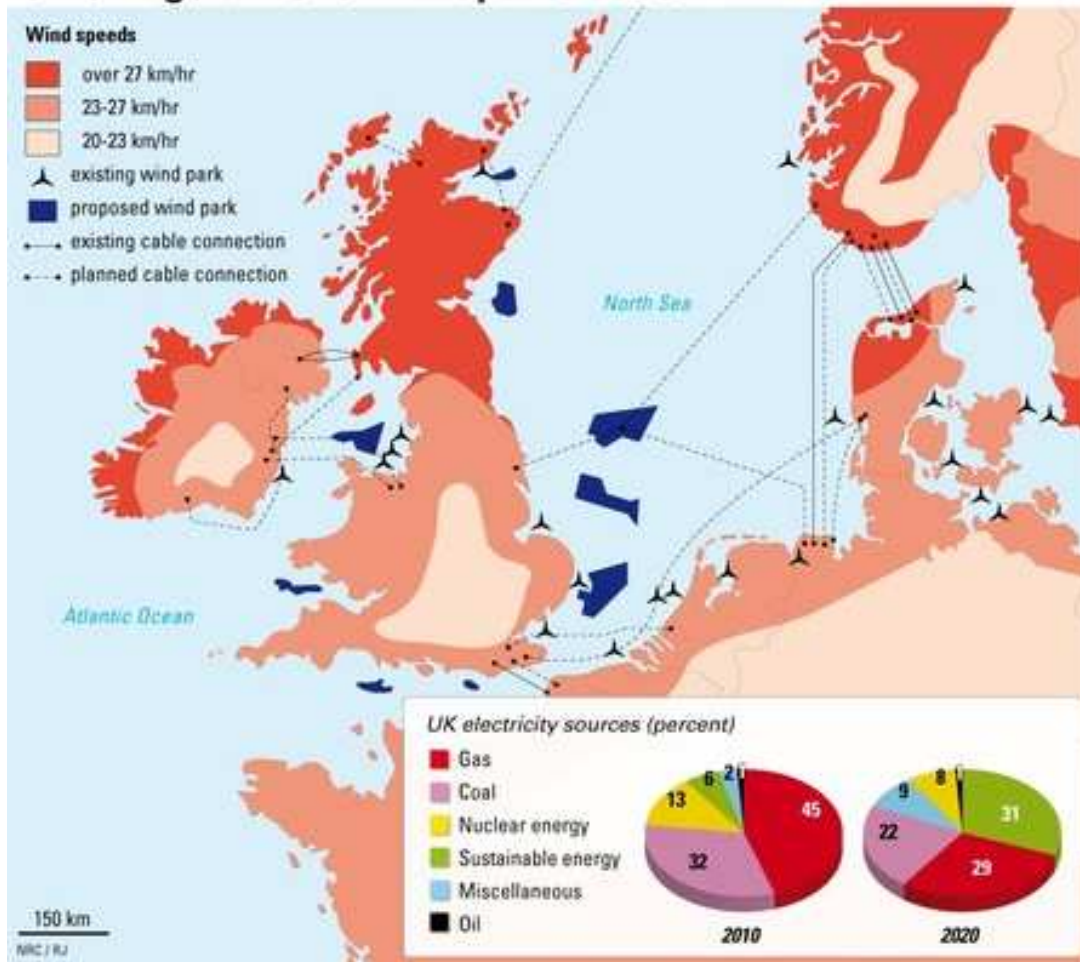
FIG 4



Figure 4 shows an offshore wind farm at Scroby Sands, 2.5km off the coast near Great Yarmouth, just one example of a new wind farm built off the coast of the UK.

FIG 5

UK's huge drive for windparks at sea



http://www.nrc.nl/international/Features/article2458063.ece/Wind_to_provide_a_quarter_of_UK_energy_needs

Wind energy is seen as the answer to supplying energy for the UK. Being an island with strong winds, up to 27km p/h in Scotland, offshore wind farms are being created around the coast. (see fig 5) "We are an island nation and I firmly believe we should be harnessing our wind, wave and tidal resources to the maximum." Chris Huhne Energy Secretary BBC News

Where Does the Energy Go in a Typical Home?

Energy Information Administration, Annual Energy Outlook 2004

Our energy consumption has increased dramatically as we have become a more industrialised and technologically advanced world. The need to produce electricity to power our computers, TV's, fuel and heat our homes.

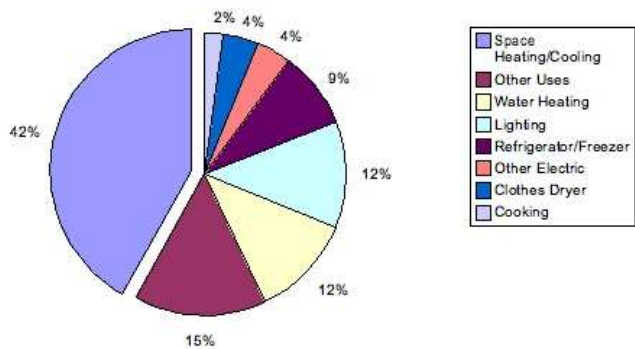


FIG 6

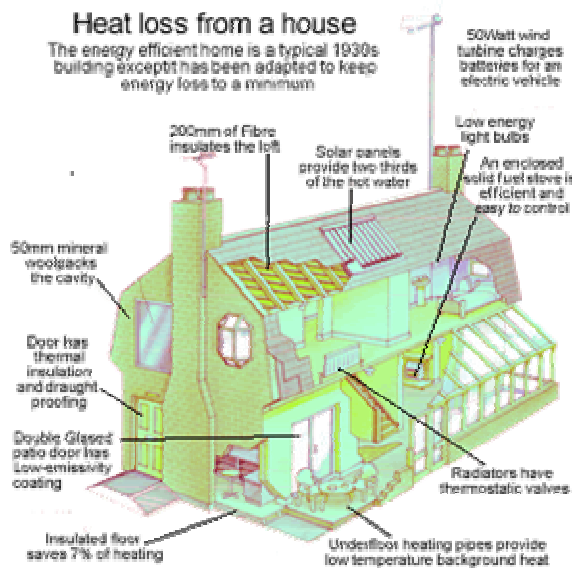


FIG 7

Homeowners in the UK need to start developing more energy efficient methods in the home to try and conserve energy and generate energy through solar panels. Fig 7 shows a range of sustainable methods that homeowners could use to do this. It would also bring homeowners the added advantage of lowering energy bills.

Part 2

Some feel that the costs of producing more electricity using renewable methods is costing too much money and is being at the expense of the general public through their electricity bills; 'electricity customers paying over £1 billion per year to subsidise wind farms and other forms of renewable energy'. (Sunday Telegraph)

The British Government has set targets for increasing the amount of fuel produced from renewable sources and these fit in with the European Union targets. 'Renewables in the UK are not yet a significant source of energy. As of 2008 renewables constituted 2.25% of energy sources. The UK has an EU target for renewable energy of 15% by 2020 to fit within the EU's overall target of 20%.' (UK Parliament Website www.parliament.uk). However, there is a concern that at the current rates of use and development, these targets may be hard to achieve at the

current growth rate, with renewable sources reaching 2.25% in 2008 up from 1.8 per cent in 2007 and 1.5 per cent in 2006.
(www.thebioenergysite.com)

The increased development of wind energy in the UK has its supporters and its detractors. Environmental groups such as Friends of the Earth are strongly in favour as they provide a real alternative to fossil fuels. Wind Farms in the UK are currently generating enough electricity to power all the homes in Scotland. (BBC News).

It has been suggested by Oxford Economists that renewables, especially wind power could provide employment opportunities, especially in coastal areas that may have seen a decline in employment from the closure of old heavy industries. Wind farms could provide as many as 34,000 direct permanent skilled jobs, and a further 24,000 permanent indirect jobs, could be created from operations and maintenance activities running wind farms.

The Thanet Wind Farm in Kent employed 3,600 people during its construction, with 30% of workers from the UK. In addition to this, up to 20 technicians from the local area have now been employed to work there full time.

Wind farms generate negative feeling from local residents regarding the aesthetics of them. "I don't like them. I look at the (turbines) and I think they're an eyesore quite honestly." (BBC News, South Today)

There has been some concern that the British government is putting too much focus on wind power as the answer to our energy supply problems, with a lack of investment in other alternatives such as the Severn Tidal Barrage. 'Professor Ian Fells, an energy expert, said: "What worries me is the government seems to be obsessed with the option of wind farms and neglects other sources of renewable energy, which in many ways could be more important.'" (BBC News)