



13 Summary of Facts and Figures

Worldwide

Forests cover 30% of the world land area.

Forests store nearly 1200 billion tonnes of carbon globally: 350 billion tonnes in vegetation (including the roots) and 800 billion tonnes below ground in the soil. This is more than the total amount of carbon in the form of carbon dioxide in the atmosphere (750 billion tonnes carbon).

Atmospheric concentrations of carbon dioxide have risen by 40% since the industrial revolution and 270 billion tonnes of carbon have been released into the atmosphere as carbon dioxide.

23 billion tonnes of carbon dioxide are added to the atmosphere annually worldwide through the burning of fossil fuels, and 6 billion tonnes are added from deforestation. Some of this is absorbed by the oceans and by vegetation, resulting in a net gain by the atmosphere of nearly 12 billion tonnes of carbon dioxide per year.

Deforestation currently accounts for 18%

of global carbon dioxide emissions

We can now expect a rise in temperature of 2°C above pre-industrial levels by 2100 even if we decrease our carbon dioxide emissions dramatically. If no action is taken, the rise in temperature could be as large as 7°C

Europe

Europe's forests have increased in extent in the last century. They now cover 44% of the land area.

The amount of carbon in European wood products is 769 billion tonnes

Europe's forests contain about 20 billion tonnes of carbon, equivalent to 74 billion tonnes of carbon dioxide.

In the UK

Forests cover 12% of the land area in Britain, up from 5% at the beginning of the 20th Century.

UK forests and woodlands contain 150 million tonnes of carbon in biomass and

640 million tonnes of carbon in the soil.

Soil is the largest carbon reservoir in the UK, storing about 6 billion tonnes of carbon.

UK forests and woodlands remove about 4 million tonnes of carbon (equivalent to 14.8 million tonnes of carbon dioxide) from the atmosphere each year.

Total UK emissions of carbon dioxide are about 530 million tonnes per year

Carbon dioxide contributed to over 85% of total greenhouse gas emissions in 2008 in the UK

Nearly a third of energy consumption in the UK is used to heat buildings.

Analysis of historic climate data confirms that the UK climate has recently been warming at a rate of between 0.1°C and 0.2°C per decade.

Winters in the UK are likely to become wetter (by up to 30%) and summers drier.

It is thought that there will be a sea level rise of between 1-10cm around the UK coast per decade over the next 100 years. Relative sea level will increase most in the south and east (where the land is already sinking) and increase by less in the north and west.

The volume of wood supplied from Britain's forests each year has more than doubled from 4 million cubic metres in the 1970s to nearly 8.4 million in 2008. There is the potential for this to peak at 14 million cubic metres around 2020.

Around 85% of the wood products currently used in Britain are imported.

In the UK 95% of our charcoal is imported.

In 2009, there were 8 million real Christmas trees sold in the UK, including 800,000 that were imported.

Wood

One tonne of carbon is equivalent to 3.7 tonnes of carbon dioxide.

Each cubic metre of wood used in building instead of conventional materials saves about 2 tonnes of carbon dioxide:

- around 0.8 tonnes of carbon dioxide are stored as carbon in the wood;
- between 0.7 and 2.5 tonnes of carbon dioxide are saved because less energy is involved in the manufacture.

Growing trees absorb carbon dioxide from the atmosphere on average at a rate of one tonne for every cubic metre of growth. However this varies depending on species, age and where in the world the trees are planted.

The thermal insulation of wood is:
15 times better than concrete
400 times better than steel
1770 times better than aluminium.

A 5 cm x 5 cm x 5 cm block of wood contains the same amount of carbon as would be emitted by boiling a kettle of water or driving a moped 1 km.

One m³ of timber compares to two return flights to the Mediterranean or driving an HGV from London to Edinburgh.

Six m³ of timber (e.g. a timber-framed house) is equivalent to driving an average petrol car for a year (17,500 kilometres).

Research into the environmental impacts of building construction suggests that increasing the use of wood in place of other materials could cut greenhouse gas emissions by between 40% and 70% per building.

Comparison of carbon dioxide emissions of different fuels over their life cycle

Fuel	Approx life cycle CO ₂ emissions kg/MWh
Coal	484
Oil	350
Natural gas	270
Large scale wood chip combustion	58
Large scale wood chip gassification	25
Wood chips (25% moisture content)	5.5-6.6
Wood pellets (10% moisture content)	20

The life cycle includes production, management and transport. In relation to woodfuels, emissions during combustion are assumed to be compensated for by the future growth of trees managed on a sustainable basis.

