- Incomplete combustion = happens when there's inadequate oxygen. Products carbon monoxide and soot. Soot's a carcinogen and carbon monoxide binds to haemoglobin
- Can prevent by ventilating properly and watching for a yellow, sooty flame
- Criteria for a good fuel = ease of ignition, price, energy value, how cleanly it burns, storage and transport
- Sulphur impurities exist in hydrocarbons, burnt, sulphur dioxide, reacts with rainwater, sulphuric acid, acid rain, damages plants, damages buildings, makes lakes acidic
- We can prevent by using catalytic convertors, 'scrubbing' fumes from power stations and burning less fossil fuels
- Greenhouse gases act as an insulating layer and re-radiate heat from the sun
- We're adding to greenhouse gases through deforestation, combustion of fossil fuels
- We can help by iron seeding, converting carbon dioxide into hydrocarbons
- Biofuels mostly biogas and ethanol (made from sugar cane/beet).
 Advantages = renewable, take in carbon dioxide when they're grown, clean, cheap. Disadvantages = have to grow which increases food prices refuelling network, cars aren't set up for it
- Fuel cells –react hydrogen with oxygen to produce mergy (and water).
 Advantages = no greenhouse gases, cell. officient. Disadvantages = hydrogen acquired from electrolysis or water which uses electricity, difficult to store and transport, refueling network 2.
- To test the energy content of rescou put them in a spirit lamp (weigh) and use them to heat water in a copper calorimeter with a thermometer. You wait until it's heated the water a set number of degrees and then weigh again to calculate efficiency
- Alkanes = saturated hydrocarbons (methane, ethane, propane, butane)
- Alkenes = unsaturated hydrocarbons (ethene, propene, butane). Have a double bond.
- Alkenes turn bromine water from brown to colourless
- Cracking is splitting long-chain hydrocarbons into shorter chain ones to correct the mismatch in supply and demand
- To crack liquid paraffin you heat it and pass it over a porcelain catalyst (small alkanes and alkenes), down into a delivery tube into a gas jar
- You can polymerise alkenes joining lots of monomers to form polymers
- Polyethene = stretchy and light = plastic bags and bottles
- Poly(propene) = tough and flexible = carpets and plastic containers
- PVC = flexible and tough = electric cables and pipes
- Teflon = unreactive and tough = non-stick coating