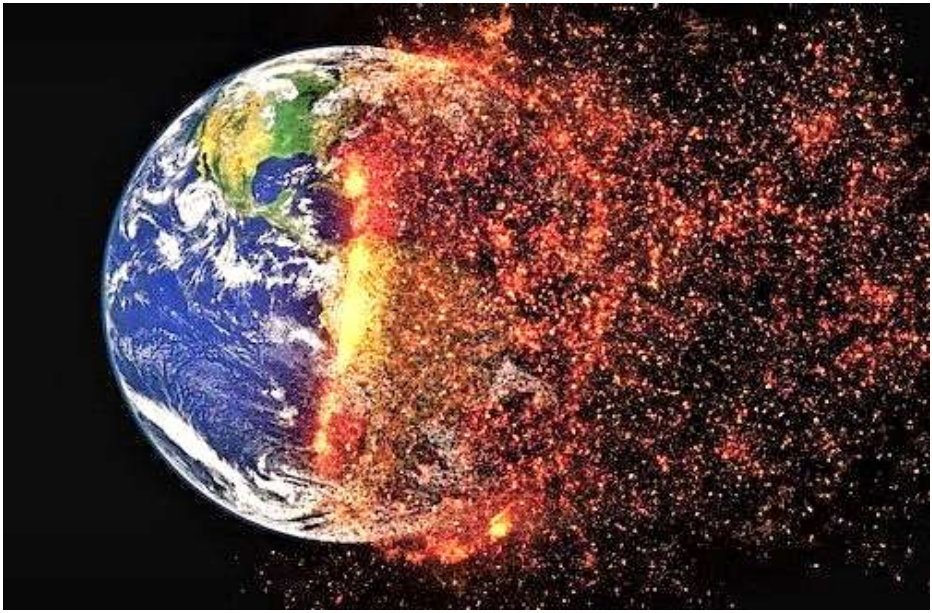
CLIMATE CHANGE EXPLAINED

Twelve years to save the planet* and what we can all do to help

Supported by Stithians Parish Council

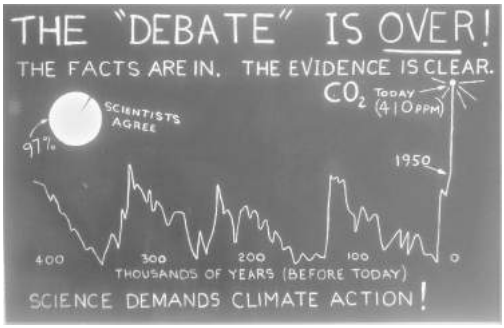
Produced by Stithians Energy Group



* IPCC warned in Oct 2018

Q. What is climate change?

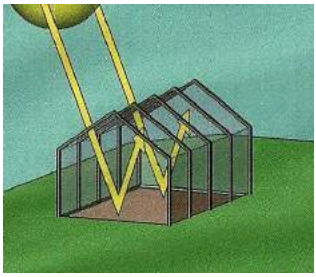
THE EARTH IS OVERHEATING

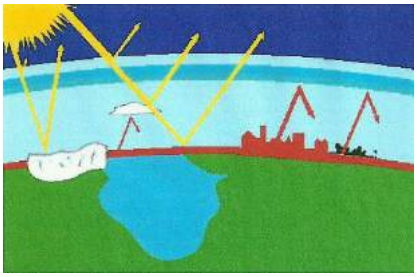


CARBON DIOXIDE HIGHER THAN SAFE LEVEL

A. Climate change has mostly been caused by mankind putting too much carbon dioxide into the atmosphere since the start of the industrial revolution. This has caused the Earth's climate to heat up.

Q. How does carbon dioxide cause climate change?





A. Carbon dioxide builds up in the atmosphere and has the same effect as the glass in a greenhouse. It allows the heat from the sun to pass through to warm the Earth but prevents some of that heat rebounding into space. The effect is that the Earth gets hotter and hotter.

Q. How did the industrial revolution cause this to happen?

STATIONARY STEAM ENGINE

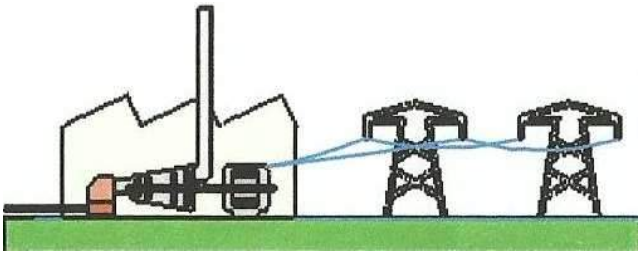
STEAM LOCOMOTIVE

INTERNAL COMBUSTION ENGINE

JET ENGINE

GAS LIGHTING

GAS COOKING



GAS POWERED ELECTRICITY PLANT

A. It started with the discovery of coal and how it could be used to power steam engines. Oil was the next big discovery and was used in internal combustion engines and, eventually, jet engines. Gas was discovered and used for lighting, cooking, heating and, eventually, powering turbines to make electricity.

Q. Why does burning coal, oil and gas cause a problem?

COAL

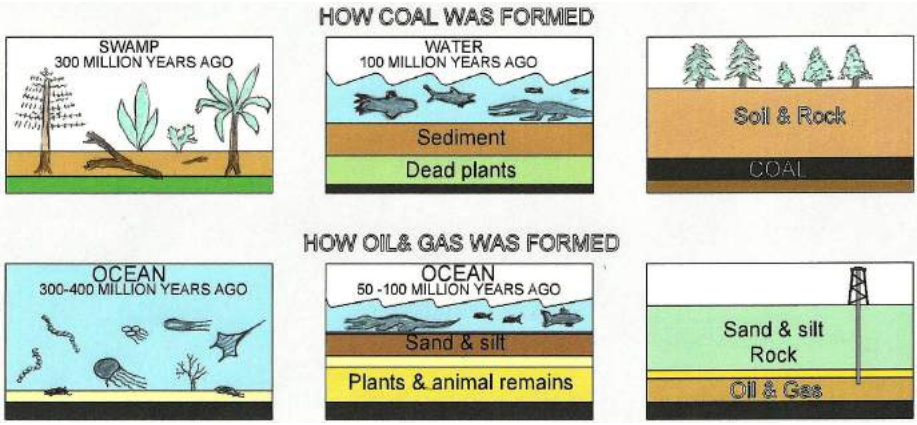
OIL

BOTTLE GAS

MAINS GAS

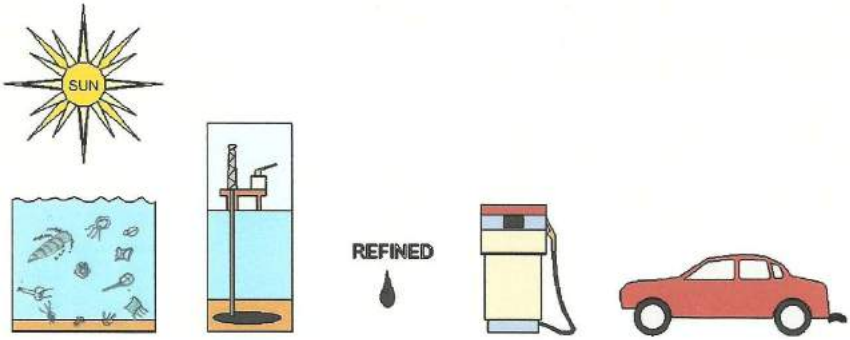
A. These are all fossil fuels and when they are burnt the main product of combustion is carbon dioxide (CO_2) The CO_2 is one of the main greenhouse gases that is causing climate change (previously referred to as global warming). Note:- biogas is not a fossil fuel.

Q. What are fossil fuels?



A. Fossil fuels are the remains of dead plants and organisms that have been compressed under silt layers and heated over millions of years. Coal is formed from compressed and heated plant debris. Oil is derived from tiny sea organisms that are similarly compressed and heated. And gas is formed after organisms were subjected to even greater pressure and heat.

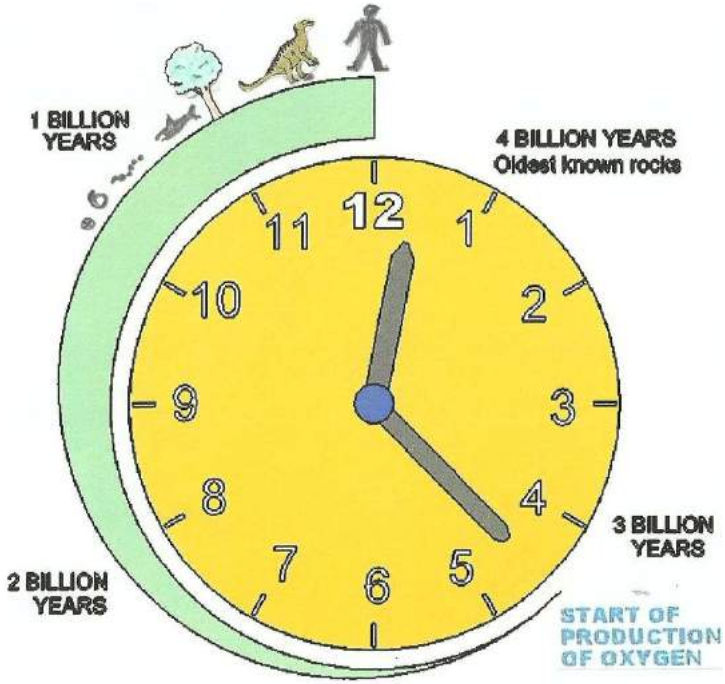
Q. Why is there so much energy in fossil fuels?



(millions of years) (_____a few weeks_____) (_burnt in a flash)

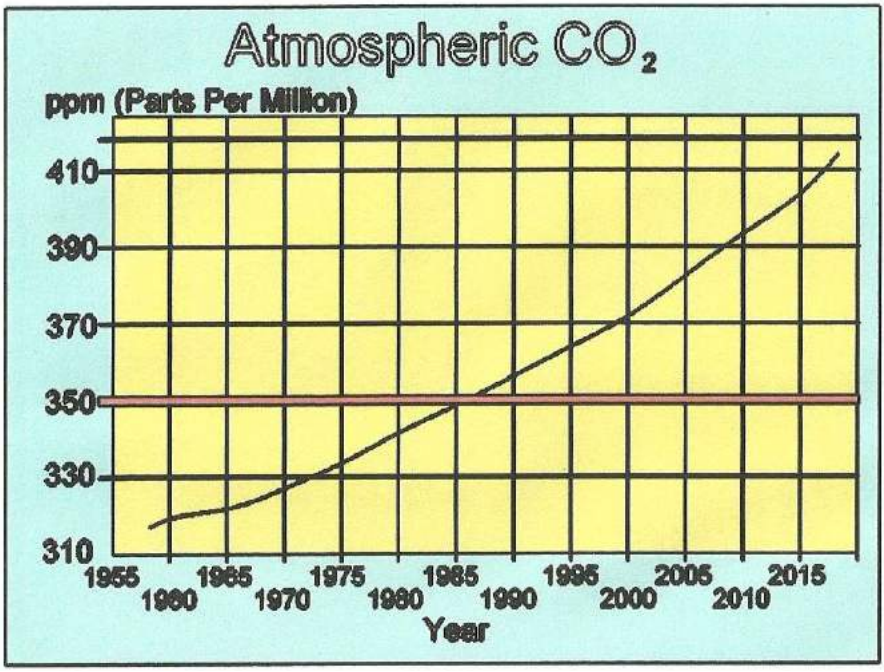
A. The energy in coal, oil and gas is ultimately derived from the sun's energy, used by ancient plants and organisms to convert CO_2 and water into food via the process of Photosynthesis. When we burn these fossil fuels, say in an internal combustion engine, we release millions of years of stored CO_2 in an instant - far faster than CO_2 is sequestered by plants and organisms. This is where we are upsetting the balance, we are releasing carbon dioxide faster than it can be locked up again. Just as we've industrialised, we've destroyed 80% of the world's forests. These forests played an essential role in absorbing CO_2 and keeping the balance. Incidentally 'luckily for us' the by-product of Photosynthesis is oxygen - essential for all animal life on Earth including us.

Q. Did the Earth always have oxygen to support life?



A. No. It was not until about 2.5 billion years ago that tiny microbes used sunshine, water and CO_2 to produce carbohydrates and, as a by-product, oxygen. So it is plant life, from huge trees right down to microscopic marine algae, that provides us the oxygen. It is said that every second breath we take is derived from ocean oxygen.

Q. What is an acceptable level of carbon dioxide in the Earth's atmosphere?



A. 350 parts per million (ppm) is thought to be the safe level. Pre-industrial levels were 280ppm. We have just tipped 415ppm. The last time there was this much carbon dioxide (CO_2) in the Earth's atmosphere, humans didn't exist and sea levels were many metres higher than now.

Q. How is climate change going to affect the world?

A. This is the big question and scientists try to predict what will happen by using supercomputers to model the climate. These are some of the predictions they have made and we will look at the consequences of these in more detail.
   1. Seas will continue to get warmer
   2. Loss of glaciers and their meltwater
   3. The polar ice caps will continue to melt
   4. The permafrost will melt
   5. Desertification will spread

Q. What are the consequences of the seas getting warmer?

A. Warming oceans expand, adding to the sea level rise already being caused by the polar ice caps melting and by glacier melt. Warmer oceans create more storms and unpredictable weather. Warmer seas are more acidic and will have a devastating affect on sea life and corals.

Q. What are the consequences of loss of glaciers and their meltwater

A. Many countries depend on glacier meltwater for both human and animal consumption, as well as for irrigating crops. Food shortages in these countries are likely to give rise to civil unrest and mass migration.

Melting glaciers add to sea level rise.

Glaciers also store and gradually release meltwater throughout the season, allowing them to power hydroelectric power stations. Water is also required for cooling thermal power stations.

Q. What are the consequences of polar ice melt?

A. White ice caps reflect the sunlight back into space. As ice melts, revealing darker seas, less is reflected and more is absorbed. This raises the Earth's mean temperature still further, triggering even more ice melt and, as a result, more sea level rise. This process is accelerating the pace of climate change. The worry is that this process will create a feedback loop, resulting in runaway temperature increases. In addition, ice melt is fresh water and fresh water floats on top of salt water. This may change the behaviour of ocean currents. The melt from Greenland is already having an effect on our ocean currents. The North Atlantic Drift that gives the UK and north-west Europe its mild climate, has been slowing since the 1970s.

Warming seas are already having a devastating impact on Arctic wildlife. For further reading see :- https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/639430/Ocean_warming_final.pdf

Q. What will be the consequences of permafrost melt?

A. Permafrost is a permanently frozen layer below the Earth's surface that can be from 1 metre to more than 1,000 metres deep. Permafrost can be found in Greenland, Alaska, Russia, China, and Eastern Europe and covers approximately 8.8 million square miles. Higher temperatures are melting permafrost, releasing the trapped green house gases CO_2 and methane. Methane stays in the atmosphere for a shorter time but is 27 times more potent as a greenhouse gas than CO_2. This is accelerating the pace of climate change and the worry is that it will trigger a feedback loop where we have runaway temperature increases.

For further reading see
https://www.space.com/41533-abrupt-permafrost-melting-carbon-climate-impact.html

Q. What are the consequences of spreading desertification and land degradation?

A. Desertification and land degradation, or the inability of land to support life, increases as global temperature rises and human activities degrade the fertility of the soil. Our soils are one of the great carbon sinks and when they are ploughed, carbon is released into the atmosphere, adding to climate change. The carbon is, in fact, the fertility of the soil. So when we release the carbon we degrade the soil. To keep producing food we have turned to chemical fertilisers, herbicides and pesticides but this is only a short-term fix. The pesticides are also killing off our pollinators and without these we will have no harvests. The Soil Association says the world's total soils only have 60 harvests left. So in just one lifetime humans will lose the ability to produce their food. Desertification and land degradation is already leading to migration to other areas or countries, heightening the risk of economic and social collapse and conflicts. Further reading :- https://www.unccd.int/sites/default/files/documents/2017-09/UNCCD_Report_SLM_web_v2.pdf

Q. What are the consequences of extreme inland temperatures?

A. Inland temperatures are more extreme than those in coastal areas, getting hotter during the day and colder at night. The oceans heat up and cool down relatively slowly, keeping coastal area temperatures more moderate. For this reason when we have a heatwave inland areas are more at risk.

In 2018 we saw huge fires across the world, burning vast areas of forest and even peatland. Both are huge carbon stores and when they burn they release carbon into the atmosphere, contributing to climate change. They also release soot particulates that have been found on polar ice sheets. Whereas white ice reflects heat from the sun, the dark soot deposits absorb heat, accelerating melt rate and sea level rise. 2019 has so far seen wildfires in Scotland, Northern Europe Mexico, Australia, and New Zealand.

Overheating became a serious issue, as did evaporation of lakes, reservoirs and rivers.

Q. How will climate change affect animal life on Earth?

A. (IN THE OCEAN)

Warmer oceans affect the abundance of marine species, such as plankton, the basis of the food chain for fish, marine mammals and sea birds.

These ecosystems are an important part of the web of life and therefore their collapse would also lead to demise of the fishing industry.

Also, water in the oceans reacts with atmospheric CO_2 increasing the ocean's acidity. It is estimated that 30% to 40% of man-made carbon dioxide is absorbed by the oceans. Increased acidity and temperatures are having a devastating effect on coral.

Warmer seas also decrease the ocean's oxygen levels and this affects the growth of fish and ocean organisms.

A. (ON LAND)

As vegetation gradually shifts into more suitable climate ranges so will the animals that feed on it, followed by the animals and insects that feed on them. It is likely that disease-carrying insects, such as mosquitoes, will become a problem.

According to the Intergovernmental Panel on Climate Change's (IPCC) special report, of the 105,000 species studied, 18% of insects, 16% of plants and 8% of vertebrates (mammals, birds, reptiles, amphibians), are projected to lose over half of their suitable habitats if global warming reaches 2° C. Some creatures will adapt but others will not and will become extinct. Species extinction is already happening, caused in part by climate change, but also by human activities that have degraded habitats and by the widespread use of insecticides and herbicides.

Q. Can we do anything to help mitigate climate change?

A. Yes we can. It may seem an insurmountable task to mitigate climate change but we can do it. Each of us can make changes that will have an impact. Let us break this down into four sections and then deal with each section in turn.

- Section 1 Transport:

- Section 2 Home comfort:

- Section 3 Food:

- Section 4 Behaviour change:

Q. **TRANSPORT** accounts for 26% of UK emissions, with cars being the main source. So can we do anything to reduce this figure?

A. Yes we can. Let's look at the options. For those who live in, or around, towns and cities the options will be different to those for people living in rural communities. So it is up to the individual to select what is appropriate for them. Included (in brackets) for each form of transport is the number of joules (J) of energy required to move a person 1 metre. The Carbon emissions (CO_2) per 100 miles are included on some forms of transport.

WALK: (energy 200J) You have to eat to obtain the energy to walk

positives ☺ Better for your health, time to think, free, better for the environment.

negatives ☹ Too far, takes too long, weather, dangerous road.

CYCLE: (140J) You have to eat to obtain the energy to pedal.

positives 😀 Better for your health, time to think, free, better for the environment, possibly battery-assist

negatives ☹ Too far, takes too long, weather, dangerous road.

PUBLIC TRANSPORT

TRAINS (energy use 50 to 300J) depending on the type of train, electric or diesel. (7.4kg CO_2 per 100 miles) Trains are the most energy-efficient method of travel (they have the least rolling resistance because of their steel wheels on steel rails).

positives 😀 You can work, relax with a book or just sit back and watch our wonderful landscape go by. Interacting with people instead of isolating yourself behind a steering wheel.

negatives ☹ Expensive, but check out the railcards below. It is also not door to door.

16-25 Railcard, Two Together Railcard, Senior Railcard, Disabled Person's Railcard, Family & Friends Railcard

PUBLIC TRANSPORT

BUSES (energy use 200 to 700J)

Buses are the next best option after trains, especially if they are electric (but they have to have a reasonable number of passengers to achieve this).

positives 😀 You don't have the stress of traffic jams.

negatives ☹ Expensive. But check out the bus passes below. It is also not door to door, buses are not particularly comfortable but OK for short journeys.

National Express Senior Coachcard
Student Bus Pass
Senior Bus Pass
Disabled Bus Pass

CAR SHARE: 4 people (energy use 375J) (7.3kg CO_2 per person per 100 miles)

There are several websites for car share schemes. They include Liftshare.com, BlaBlaCar, GoCarShare, carsharecornwall.com and joinmyjourney.
Some parish councils set up local car share websites and some workplaces have schemes for their employees.
For occasional use co-cars.co.uk might be an option.

positives 😀 Less CO_2, save money, make new friends, use 2+ express lanes, less car parking spaces required.

negatives ☹ Might not be quite as convenient as driving your own car.

CAR

1 person (energy use1500J) (29kg CO_2 per 100 miles)

Both petrol and diesel are bad for the environment. They both contribute to a NOx (nitrogen oxides that contribute to air pollution) and particulate air pollution problem, as well as greenhouse gases.

positives 😀 Cars give flexibility to personal transport needs.

negatives ☹ Someone has to drive the car. It has to be kept somewhere.
It has costs associated with servicing, insurance, road tax, tyres and breakdown cover.

ELECTRIC CAR

1 person (energy used 500J) (0kg CO_2 per 100 miles if charged from renewable energy)

positives 😀 Gives flexibility to personal transport needs. No pollution if electricity is from a renewable source. Cheapest transport other that cycling or walking. (No fuel cost if charged from solar panels).

negatives ☹ New cars are expensive although the second-hand market is growing. Range was an issue until 200 mile-plus models were introduced recently. Traffic jams are still a problem but at least you don't have to balance the clutch and you can sit in relaxed quietness.

AUTONOMOUS TRANSPORT

It's likely autonomous vehicles (driverless) will eventually dispense with the need to own a car. This will not happen any time soon as the cost of the infrastructure and the technology required is formidable. However they have already been tested in Milton Keynes, Coventry, Greenwich and Bristol. Cars similar to the one shown below are being trialled as autonomous taxis in Singapore.

Driverless buses, lorries and trains have also been trialled. Some of London's underground railway is driverless, as well as the Docklands' Light Railway. The first mainline driverless train was tested in 2018.

positives 😀

A computer will drive the vehicle more efficiently, wasting less energy. Journey times would be shortened due to optimised traffic flow through computerised road network systems. Removing human error could lead to safer transport. Not having to drive the car would enable a more relaxing journey.

negatives ☹

Autonomous transport could make many people redundant and the unions will probably rebel against this but any increased profits should be ploughed back into society to retrain and support displaced drivers.

FLYING 1 person (energy used1500J) Full 747 jumbo jet (43kg CO_2 per 100 miles)

Flying is the absolute worst for carbon emissions. Flying is set to cause 20% of our global greenhouse gas emissions by 2050. To avoid catastrophic climate change this must not happen. There are times when there is no alternative to flying and these should be treated as a rare luxury. If you absolutely have to fly then you should at least compensate for your carbon use (carbon offset). (London to New York return £45)

There are several websites such as https://carbonfund.org/ and https://co2.myclimate.org

positives 😀 Flying is relatively cheap and quick.

negatives ☹ Flying puts greenhouse gases at high altitude, making their effects even worse than at ground level. This is known as Radiative Forcing.

Possibly long delays at airports.

You don't have the experiences of seeing places and meeting people that you have when travelling overland.

HOME COMFORT

Our homes account for about 14% of the UK emissions. Further reading :- https://www.theccc.org.uk/2019/02/21/uk-homes-unfit-for-the-challenges-of-climate-change-ccc-says/

Q. Can we have warm comfortable homes without burning fossil fuels with their associated carbon emissions?

A. Yes. Let's look at some of the technologies that might help us achieve this. The three main elements required for a comfortable home are insulation, heating and ventilation.

Insulation

In a typical house about 25% of heat is lost through the roof. About 35% of heat will escape through the walls and as draughts around windows and doors. About 10% will be lost through the floor. Windows don't lose as much heat as you might think, because their area is usually small in comparison to the area of wall.

The most cost-effective way to retain heat is through draught-proofing. The second is to insulate the loft. The third way to retain heat is to insulate the external walls. There are three main ways to do this: cavity fill, internal wall insulation and external wall insulation.

Heating

Direct electric heating is expensive but if powered by renewable electricity has zero carbon emissions.

Electric storage heaters obtain their heat from electricity when it is cheaper on a night-time tariff.

Air source and ground source heat pumps have become a cost effective way to heat homes and, if powered by renewable electricity, have zero carbon emissions. They could also qualify for Renewable Heat Incentive (RHI) payments.

AIR SOURCE HEAT PUMP

GROUND SOURCE HEAT PUMP

A wood-fuelled heating system emits the same amount of carbon as that absorbed by the tree when growing. However the wood is burnt relatively quickly compared to how long it takes to grow and therefore many trees have to be planted to absorb the same amount of carbon in the same time frame. These systems could also qualify for Renewable Heat Incentive (RHI) payments. For further reading visit https://www.energysavingtrust.org.uk/renewable-energy/heat

Ventilation

It is important that our homes are ventilated to stop the build up of stale air and moisture. As we seal up our homes to avoid heat loss from draughts we should also ensure there is still adequate ventilation, especially if there are any fuel-burning appliances (it is also advisable to fit a carbon monoxide detector). Ventilation might be solved by the simple addition of trickle vents over windows. Alternatively, the more sophisticated whole house mechanical ventilation system with heat recovery (MVHR) might be used. It is also possible to fit small heat recovery extractor fans to high-moisture areas such as kitchens and bathrooms.

MECHANICAL VENTILATION AND HEAT RECOVERY UNIT

FOOD

Each person in the UK contributes 1.9 tonnes CO_2e from food per year. (CO_2e - the **e** describes different greenhouse gases such as methane, as an equivalent of CO_2)
The total UK contribution is about 116 million tonnes CO_2e from food per year.

Q. How can we reduce our food carbon emissions?

A. Don't waste food. The UK tops the EU food waste chart at 14 million tonnes per year. Our closest rivals are Germany, the Netherlands, France, Poland, Italy and Spain, averaging 9 million tonnes. Buy local to reduce food miles. Eat less meat (consuming meat once or twice a week is said to be equivalent to the emissions of driving a petrol car 1500 miles).
For further reading see link
https://www.bbc.co.uk/news/science-environment-46459714

BEHAVIOUR CHANGE

Q. How can we change our behaviour?

A. If we change our attitude we will also change our behaviour. We need to acknowledge that resources are finite and that, whatever we do, we must seek an ecological balance. For instance, if we buy food that is not organically grown there is a strong possibility that pesticides, herbicides and chemical fertilisers will have been used. The pesticides also kill helpful insects like bees and ladybirds that other creatures feed on. If our useful insects become extinct, harvests will suffer.

When purchasing something ask yourself these questions: Do I really need this? How long will it last? How much energy does it use? What will happen to it at the end of its life? This works well for just about every purchase, including clothes, electrical goods, food and even a car.

Try to reduce the amount of energy used by switching off lights when leaving a room and not leaving items on standby, boiling only the amount of water required. Use the washing machine less often and on a lower temperature setting. Keep a record of electricity and gas meter readings. Use the car less.

Behaviour change is difficult but we have to change to avoid disastrous consequences. However, making these changes and doing your bit is an extremely good feeling.

RECYCLING

Q. Does recycling help reduce our carbon footprint?

WHITE GOODS AWAITING RECYCLING

A. Everything we throw away has an associated carbon footprint, from the extraction of the raw materials, to manufacture, distribution and disposal. If we are to have a sustainable economy, with a minimal carbon footprint, it is essential that we embrace recycling.

Recycling a single aluminium drink can save up to 95% of the energy needed to make the aluminium from raw materials. The energy saved is equivalent to running a television for three hours. Recycling a plastic bottle takes 75% less energy, compared with using virgin materials, saving enough energy to light a 10W LED light bulb for one and a half days.

Refrigerant gases are 1,000 to 9,000 times more potent as a greenhouse gas than carbon dioxide. So fridges, freezers, air conditioning units and heat pumps must be recycled and disposed of properly.

Electrical and electronic goods have a wealth of valuable materials in them that should be recovered.

Further reading :-

https://www.recycle-more.co.uk/household-zone/top-facts

MANUFACTURING

Q. Can manufacturing carbon emissions be reduced?

We might think we are doing well in the UK when reports say our manufacturing carbon footprint is getting smaller. But we must be aware that some of this saving is due to importing goods from abroad. The Earth does not differentiate between which countries are producing the emissions. However, UK manufacturing can take some credit. Jaguar Land Rover were certified carbon neutral in 2018 while Unilever plans to be carbon positive by 2030 (producing more energy than it consumes and exporting the surplus).

A. The best way for individuals to help reduce manufacturing emissions is to consume less. It is not sustainable to keep remaking stuff. In the future we may not buy some items, such as a washing machine, but instead buy its service from the manufacturer who would be responsible for repairs and, ultimately, for its end-of-use recycling. People who were employed to manufacture more and more stuff would then be employed to repair and recycle. The EU has recently released its Circular Economy Action Plan. It would appear the UK government is also committed to a circular economy.

FARMING

Q. What can we do to reduce carbon emissions from farming?

Agriculture, forestry and other land use account for 24% of the UK's carbon emissions. The carbon locked up in soil is its fertility and the Earth's soils hold almost twice as much carbon as the atmosphere and plants combined. Current farming practices release this carbon into the atmosphere as CO_2, producing more greenhouse gases and depleting soil fertility.

The Soil Association says the UK has only 100 harvests left in its soils. Even more worrying, all the world's soils only have 60 harvests left. So in just one lifetime humans will lose the ability to produce their food. Government is aware of the situation and has set up the Sustainable Soils Alliance to generate ideas on how UK soils could be brought back to health within one generation.

Farming must adopt regenerative farming practices if we want to improve the soil and reduce carbon emissions. This means no tillage, no pesticides and no synthetic fertilisers (made from fossil fuels). It should also adopt multiple crop rotation, plant cover crops and embrace agroforestry (the planting of trees or shrubs around or among crops or pastureland).

FARMING CONTINUED

A. We must be prepared to pay more for better quality food and that will probably mean buying organic. In 1957 food accounted for 33% of the family income but today it only accounts for 16%.
Eat less but better quality meat, eat more fruit, vegetables, nuts, seeds and pulses. **It's far better for both you and the planet**. Prepare meals from scratch rather than consuming convenience foods. Buy local and in-season food wherever possible. Also growing your own can be very rewarding and it is great to involve the children.

Further reading :-
https://soilsolution.org/wp-content/uploads/2016/03/soil-and-carbon-report.pdf

A FUTURE ZERO CARBON BRITAIN

What could a zero carbon economy look like?

So far we have looked at the disastrous effects of not reducing our carbon emissions. We are locked into the impacts of these existing high levels of atmospheric CO_2 and they will continue to have devastating effects on our world climate even after we reach zero emissions. However, this does not prevent us from imagining how much better a zero carbon Britain could be.

CITIES (in a future zero carbon Britain)

Cities are now places for people rather than cars. There are safe dedicated paths allowing people to cycle and walk in a pollution-free environment. Owning your own car is no longer necessary because public transport has changed dramatically since the introduction of autonomous (driverless) electric vehicles. Removing parked cars from streets has freed up space to become green places where people can relax and children can play. Also food is grown and trees have been planted to provide shade in the ever increasing heatwaves.

HOMES (in a future zero carbon Britain)

ZERO CARBON HOMES IN DEVON

All new homes are zero carbon, requiring very little energy to run them. Older homes have been retrofitted with higher levels of energy efficiency and smart energy systems.

BEHAVIOUR CHANGE

(in a future zero carbon Britain)

People are very much aware that everything they do has an impact on their carbon footprint and ecosystem. A circular economy where little or nothing is wasted is now well accepted.

FOOD

(in a future zero carbon Britain)

More of our food is grown locally and to a certain extent is seasonal. It is of better quality now that farming has adopted an organic approach. Far less meat is eaten but it is of higher quality.

FARMING (In a future zero carbon Britain)
The fertility of the UK farmland has gradually improved since farming adopted a more sustainable organic approach. These measures have helped to restore wildlife habitats and there is now a marked increase in insects, birds, reptiles and mammals.
Further reading
https://www.soilassociation.org/our-campaigns/agroforestry/agroforestry-what-are-the-benefits/

HEALTH (In a future zero carbon Britain)
Stopping the burning of fossil fuels has improved air quality, vastly reducing the incidence of asthma and other respiratory diseases.

TRANSPORT

Trains (In a future zero carbon Britain)
Most overland journeys are now made by high speed electric trains. High speed freight trains take goods to distribution centres where autonomous electric trucks distribute locally.

Cars (in a future zero carbon Britain)

Most people don't own a car any more. Instead, they arrange for a suitable driverless vehicle to take them to their destination.

Shipping (in a future zero carbon Britain)

The amount of shipping has been reduced by about one third now that the world is no longer dependent on oil and liquified gas. New high tech ships are much greener.

Aircraft. (in a future zero carbon Britain)

There are times when there is no alternative but to fly and for these occasions aircraft makers Boeing and Airbus have developed hybrid and battery electric aircraft.

ENERGY (in a future zero carbon Britain)

Britain's energy is now entirely renewable, with offshore wind providing the biggest proportion. Also in the mix are onshore wind, large scale solar photovoltaic, rooftop solar photovoltaic, hydro-power, tidal power, deep geothermal and biogas.

Although the emphasis is on local rather than centralised distribution there are moves towards an international, interconnected grid and this could become a backup (there is sun or wind somewhere in the world all of the time). Further reading

https://newatlas.com/geidco-global-interconnected-energy-grid/46411/

Now that you understand the urgency of reducing your carbon footprint see how many of the pledges you can take to make a difference. Use the tick boxes ☐

Based on Climate Vision http://climatevision.co.uk/top-ten-pledges

1. I pledge to ring my electricity supplier over the next 24 hours and see if I can switch to green energy (if not I will find one)
2. I pledge to buy local seasonal produce as much as possible - starting with at least 2 meals a week
3. I pledge to educate myself about the science and impacts of climate change
4. I pledge to contact my MP and my friends and ask them to make these pledges too
5. I pledge to walk,cycle,use public transport or register with https://liftshare.com/uk/community/cornwall to travel to work or regular journey at least once a week
6. I pledge to work out my own carbon footprint using one of the many easy to use carbon calculators eg. http://footprint.wwf.org.uk
7. I pledge to do the Energy Saving Trust's 'home energy check' to find out how I can save energy in my home. If you don't have internet, ask the Energy Saving Trust on 0800 512012
8. I pledge to turn my thermostat down or use a thermometer to reach the lowest comfortable temperature, typically between 18-21°C & think about putting on a jumper instead
9. I pledge to reduce my holiday air miles by 50%
10. I pledge to research 'Driving in a greener way' by google/research or by ringing up a driving instructor and booking a lesson to learn eco-drive ideas

The UN International Panel on Climate Change (IPCC) warned in Oct 2018 we have 12 years to limit climate change catastrophe

In light of the IPCC special report. Stithians Parish Council, along with a growing number of parish and town councils, declared a climate emergency on 15th January 2019

Cornwall Council declared a climate emergency on 22nd January 2019, saying they recognise the climate change crisis and the need for urgent action. They join a growing number of city councils making similar declarations.

The World Meteorological Organisation. "We are the first generation that fully understands climate change and the last generation that can do something about it."

Keep for reference, Pass on or Recycle

FSC Printed on FSC certified paper.

Revised July 2019