

THE COMBROKE EC_HO

MAKING COMBROKE EVEN GREENER!



CCCC hold another meeting!

MARCH 2020

Cast your mind back to a time before lockdown (the first one), when you could go shopping, go to the pub, go to the cinema, go on holiday, and get your hair cut...when flour was in plentiful supply and you could meet inside the village hall on a Sunday afternoon to discuss all things environmental / climate change... On the 8th March, just a few days before we all went in to hibernation, we had the second meeting of the Combroke Climate Change Club.



We drank tea and ate vegan cake whilst chatting about food waste and how we travel.

We looked at carbon footprints, what they are, and how we can all measure our own. We talked a lot about reducing our own footprints by the food that we eat and how we choose to travel.

It has been a while, but as we hopefully ease out of lockdown maybe we can turn some of our attention back to the good work we had started...see inside for more detail!

IN THIS ISSUE

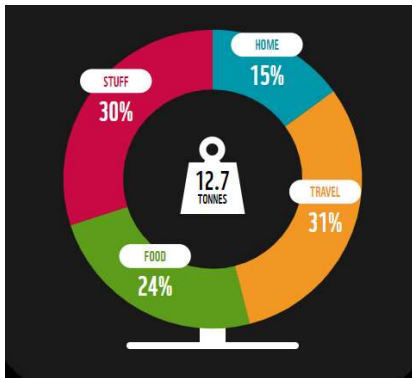
MEASURE YOUR OWN CARBON FOOTPRINT

HOW TO CHOOSE AN ELECTRIC CAR

SHOULD YOU EAT ASPARAGUS BEFORE GOING ON A BIKE RIDE?

WHAT IS MY CARBON FOOTPRINT AND HOW DO I MEASURE IT?

The carbon footprint of anything is defined in many ways. Mike Berners Lee, who seems to have calculated ‘the carbon footprint of everything’ in his books ‘How Bad Are Bananas?’ (first edition 2010, new updated edition September 2020) explains that the term is often misused. In the most general of terms ‘footprint’ is the total impact that something has (on the planet), and ‘carbon’ is shorthand for all the different global warming greenhouse gases. In his books, it is defined as ‘the best estimate that we can get of the full climate change impact of something’. That ‘something’ can be an activity, an item, a lifestyle, a company, a country etc. It is normally measured in CO₂ (CO₂ equivalent).



There are lots of carbon footprint calculators available online – one of the simplest is on the WWF website. It takes just a few minutes to answer the 20 questions or so, and at the end it will calculate and show your household’s carbon footprint in the form of a visual that looks a bit like this one...

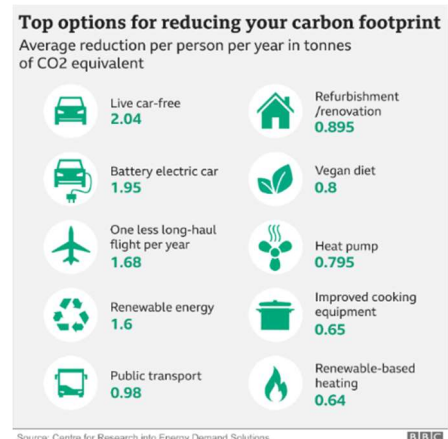
Go to <https://footprint.wwf.org.uk/> to find out yours!

Climate change: Top 10 tips to reduce carbon footprint revealed

Carbon emissions are responsible for climate change – we know that. So if we want to help the environment, we need to reduce our footprints in every way we can. This article by Roger Harrabin, BBC environment analyst, from May 2020, explains which measures are likely to have the most impact.

The response to the Covid-19 crisis has shown that the public is willing to accept radical change if they consider it necessary, they explain. Top of the list is living car-free, which saves an average of 2.04 tonnes of CO₂ equivalent per person annually. This is followed by driving a battery electric car - 1.95 tonnes of CO₂ equivalent per person annually - and taking one less long-haul flight each year - 1.68 tonnes of CO₂ equivalent per person. Switching to a vegan diet will help - but less than tackling transport, the research shows. It says popular activities such as recycling are worthwhile, but don’t cut emissions by as much. The lead author, Dr Diana Ivanova from Leeds University, told BBC News: “We need a complete change of mindset. “We have to agree how much carbon we can each emit within the limits of what the planet can bear – then make good lives within those boundaries. The top 10 options are available to us now, without the need for controversial and expensive new technologies.”

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So, there are lots of ways to reduce our carbon footprint, in this edition we are looking at food and travel.

FOOD REPRESENTS A QUARTER OF ALL GLOBAL GREENHOUSE GAS EMISSIONS

The carbon footprint of food consists of the energy required to grow, process, assemble, cook the food, transport it from source to distributor(s) to our plate. So the choices we make about where we get our food from can have a huge impact.



Choose the types of food that you eat carefully

Cutting meat and dairy products from your diet could reduce an individual's carbon footprint from food by two-thirds, according to an Oxford study published in the journal Science. For every portion of beef that we consume, a whopping **7 ¾ kg of carbon dioxide** has been emitted into the atmosphere - that's a lot of carbon dioxide.

Why is beef so bad for the environment? Cows live a relatively long time (compared to a chicken for example) before they are 'processed' for food, so they eat an awful lot of food themselves, and then they ruminate and expel a lot of gases. The global figure for beef is even higher as a lot of beef is raised on deforested land. However, even the most climate-friendly meat options still produce more greenhouse gases than vegetarian protein sources, like beans or nuts. A portion of chicken creates 1.5kg CO₂e, soya less than 500g and nuts come in at almost zero.)

This is why dairy milk has such a higher carbon footprint than plant based milks. Give them a go if you haven't already - they taste great in coffee or porridge!

Know how and where your food is produced

Meat and dairy are not the only foods where the choices you make can make a big difference. Generally anything grown locally and in season will be dramatically better for the environment than the same food grown abroad in high energy consuming greenhouses - less energy to grow, and less energy to transport. Eating seasonally and local really does make a huge difference:



A punnet of strawberries grown out of season abroad and flown in (or grown in the UK in a hothouse) will produce **10** times the amount of CO₂e if grown in season, in the UK (**1.8kg vs 150g** CO₂e) Locally grown tastes better too!



It's an even worse story for asparagus...

250g of asparagus air-freighted from Peru to the UK in January will produce **20** times that of locally grown, seasonal produce! (**3.5kg** of CO₂e vs **125g**)

It's not just the distance travelled that has an impact

For example, beef cattle raised on deforested land is responsible for **12 times** more greenhouse gas emissions than cows reared on natural pastures. The average beef from South America results in 3 times the amount of greenhouse gases as beef produced in Europe - and uses 10 times as much land.

So why shouldn't you eat asparagus before a bike ride?

Imagine that after breakfast you decide to go for a bike ride. If you cycle a mile after having eaten bananas for your breakfast, your carbon footprint will be 65g of CO₂e, but it will rise to 90g if you chose cereals with milk or an enormous 2.8kg if you stocked up on air-freighted asparagus. (Interestingly if your cycling calories came from cheeseburgers, the emissions per mile are about the same as two people driving an efficient car.)

For more thought-provoking (and often scary) facts like these, take a look at Mike Berners-Lee's book 'How Bad Are Bananas?' (these statistics are taken from the first edition, a second updated edition was published on 3 September 2020)

What does carbon neutral mean, and does carbon offsetting help?

Zero carbon, carbon neutral, net zero all essentially mean the same thing. 'Carbon neutrality is achieved by calculating a carbon footprint and reducing it to zero through a combination of efficiency measures in-house and supporting external emission reduction projects.' (Taken from www.carbonneutral.com).

Microsoft, Sky, Neals Yard, Marks and Spencer, Google and Siemens are amongst the ever growing list of organisations claiming to be carbon neutral. Unfortunately, 'carbon neutral' is simply a balancing act, so by paying to plant more trees on the other side of the world for example, a company can effectively continue its carbon hungry activities undeterred. If you've got a few minutes take a look at the following article for an in-depth analysis of this increasingly popular concept.

Offsetting. Everybody's at it. Shell says that it offsets the petrol that its customers buy. The aviation industry has said offsetting is how we can carry on flying. Some countries even want to offset their emissions. But what is carbon offsetting and does it work?

What is carbon offsetting?

The idea behind carbon offsetting is that the carbon emissions generated through an activity (like flying) can be calculated, and then the equivalent amount "paid off" via a scheme which removes carbon from the atmosphere (such as tree planting). To work, the "carbon removal" scheme or project must be in addition to existing schemes.

The race to net zero emissions

Right now, companies, councils and countries are falling over themselves to declare that they are going to go "net zero" (removing as many emissions as we produce), with dates ranging from 2030 to 2050. Net zero doesn't mean they are going to *reduce* greenhouse gas emissions to actual zero, it means they are going to reduce their emissions a lot (or just a bit) and fund an offsetting project to deal with their remaining emissions. Bingo, net zero.

Does carbon offsetting work (in practice)?

On the one hand that's a pretty easy question to answer. A [study for the European Commission](#) into United Nations-sanctioned offset projects found that three quarters of projects were unlikely to have resulted in additional emissions reductions. So, in most cases it seems clear that carbon offsetting doesn't work in practice. But on the other hand, that doesn't mean it never works, and it clearly depends on which projects are being funded.

Are there examples of good offset projects?

The offset project mustn't lead to emissions just shifting elsewhere. Bizarre as it seems, some offset projects say "give us your money and we'll stop some forest being chopped down". But as a [recent report for the German government](#) pointed out, it is very difficult to identify if a forest area is at risk of being chopped down, even in an area of high historic deforestation. Protecting one specific area of forest may also result in a different area being chopped down because the driver of deforestation hasn't changed (for instance, the insatiable demand for meat across the world).

...the offset project must draw down more carbon than is being emitted. The European Commission report (see above) said that this isn't always the case. For example, it said that most schemes that help households in developing countries switch from inefficient cooking stoves to efficient ones exaggerate the savings in emissions.

Mike Childs writing for Friends of the Earth
(Published: 13 Feb 2020) **has mixed views (unsurprisingly!)**



Friends of the Earth

Also, 1 tonne of carbon from a plane causes more harm than 1 tonne of carbon from other sources because burning fuel at altitude causes other changes that increase the warming effect. There will be some offset projects that are genuinely "additional", will permanently lock away carbon emissions, don't just lead to more emissions elsewhere and don't draw down less emissions than being emitted. They will be few and far between, but they will exist. However, that's not the end of the story.

Should countries offset?

Some countries are trying to offset their emissions to avoid having to take action within their own country. The theory is that in a world where some countries need to get to net zero and others don't, the country that does need to get to net zero can pay another country to go further (eg cut its emissions by 90% rather than 80%). But in a world where every country needs to get to net zero, that theory falls apart.

What is biodiversity offsetting?

Biodiversity offsetting is looking like the next big ruse. If given the go-ahead, developers could rip up a wildlife-rich area to build homes and offset the damage by putting money into a wildlife restoration project – perhaps many if not hundreds of miles away. Apart from the obvious problem that every habitat is unique, and that the local community may have just lost a wildlife area on their doorstep, international experience demonstrates biodiversity offsetting just doesn't work.

So, does carbon offsetting work?

In most cases, sadly it does not. It's a con. If a business or someone you know tells you they are going net zero, ask them just how far they are going in cutting their emissions. If someone tries to sell you an offset project, ask them if they will guarantee the carbon will be locked up for thousands of years and that the project has zero chance of being funded in any other way.

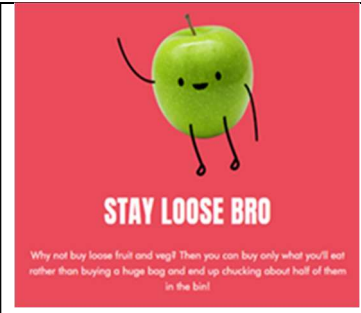


The reality is that we – government, businesses and individuals – need to cut our emissions by as much as we can, as fast as we can. We also need to invest in projects that will remove carbon emissions from the atmosphere. It's not either/ or, it's both. The same is true of nature. We need to protect what nature we have left, and we need to restore habitats, not one or the other.

This is an edited version, go to <https://friendsoftheearth.uk/climate-change/does-carbon-offsetting-work> for the full article.

Food Waste

We've all seen the headlines - a staggering **one third** of all food produced in the world is lost or wasted, and the average UK family throws away **£730** worth of food every year, according to WRAP (The Waste and Resources Action Programme). It - almost, but not quite - goes without saying that by ensuring that we eat everything we produce we can go a long way to reducing the carbon footprint of human food consumption.

Lots of these ideas to reduce food waste may seem obvious, but do we do them?

	<p>Try writing down everything you throw away in a week and adjust your shopping accordingly.</p>	<p>Measure out portions - always end up cooking too much rice? try measuring your portions before cooking.</p>	<p>Buy what you actually need rather than a bag full! Don't be tempted by special offers unless you know you will use it all up!</p>
<p>Get composting! For those uncooked fruit and veg that really can't be saved, start a compost bin or wormery so you can feed your garden!</p>	<p>Keep your bananas in isolation! Remember bananas will speed up ripening of most other fruit and veg – and did you know that the high levels of ethylene in apples will turn watermelons mushy?!</p>		<p>Did you know? Half an avocado lasts longer in the fridge with the stone in!</p>
<p>Write a shopping list - and try not to stray (too far) from it!</p>		<p>Aim to have an empty fridge when you go shopping (adds peril to meal planning the night before) and check your fridge temperature; between 1-5°C helps get the best from your food.</p>	<p>Give away don't throw away: If there is perfectly good food at risk of the bin, why not donate it to a food bank or ask your neighbour if they'd like it!</p>

Here in the UK, millions of us are already doing our bit to use more of the food we buy each week. Between us, we're saving just under £5 billion a year compared with 2007, not to mention saving 5.0 million tonnes of CO2 – that's like taking 2.1 million cars off the road (source lovefoodhatewaste.com). So, keeping good food out of the bin really does make a difference. (Sources – Sainsburys, WRAP, lovefoodhatewaste.co.uk)

and now for some good news...

Whilst the COVID19 pandemic has been devastating, there have been some positive 'by-products' of lockdown, whether international, national or local...

The planet breathed an albeit temporary sigh of relief when pollution levels dropped dramatically during lockdown and organisations re-discovered their philanthropic side – from companies re-organising their factories to produce PPE to those sharing their gargantuan computers to help speed up the research into COVID19.



People in India could see the Himalayas for the first time in 'decades,' as the lockdown eased air pollution. People in the northern Indian state of Punjab reacted with awe at the sight of the Himalayan mountain range, which became visible from more than 100 miles away due to the reduction in air pollution caused by the country's coronavirus lockdown.

Venice's famous canals are the clearest they have been in 60 years, thanks to pollution levels and tourist numbers in the Italian city rapidly dropping. With less boats on the canal, the once-murky, grey waters are now crystal clear because the sediment is still. This has welcomed swans, fish and seabirds back to the canals.



Whether it was goats in Llandudno, wolves in Normandy, or cows at the Giant's Causeway in Northern Ireland (a herd of Irish Dexter cattle were welcomed to help revive wildlife — and settled into their new surroundings in peace.), animals asserted their presence all over the place...especially squirrels.

A reduction in seismic noise because of changes in human activity was a boon for geoscientists. Researchers who study Earth's movement reported a drop in seismic noise — the hum of vibrations in the planet's crust — that could have been the result of transport networks and other human activities being shut down. They say this might allow detectors to spot smaller earthquakes and boost efforts to monitor volcanic activity and other seismic events.

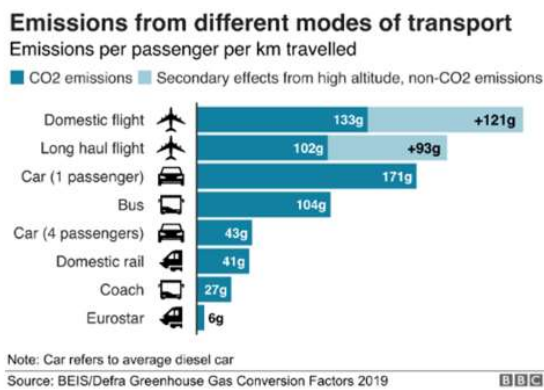


Travel

What's the most environmentally friendly way to travel?
The obvious answer is by foot or bike, but how about when we need to go further afield?



Data from the BBC website shows the differences between the CO₂ emissions of various modes of transport. (The light blue represents the additional emissions produced at high altitude which are thought to be even more damaging than CO₂.)



If we were feeling bad about how much our roast beef was damaging the environment, the statistics for the aviation industry are mind boggling. Flying is by far the worst way to travel from an environmental point of view. An economy-class return flight from London to New York emits an estimated **0.67 tonnes** of CO₂ per passenger. (International Civil Aviation Organization) Travelling by air is clearly not the answer for now, although the aviation industry is starting to make some progress in helping the environment, from the Delta Wing Concept to using solar powered electricity...

But the emissions figures vary according to airline...

Easyjet came in 'best' in a report looking at the number of grammes of CO₂ per passenger, per km, in economy class, coming in at 'just' 75g versus Korean Air with 172g, and the International Airlines Group (IAG), which includes British Airways at 112g.

Easyjet's 'good' performance is partly down to its modern, efficient fleet and its push to fill every seat.

- their figures look better because they can squeeze in lots of passengers, restricting legroom and luggage allowances.

according to where you sit...

For long haul flights, the figures are about 3 x higher for business class and 4 x higher for first class, according to the Department for Business, Energy and Industrial Strategy.

and according to how your journey is planned...

Taking off uses more fuel than cruising, so for shorter flights, this accounts for a larger proportion of the journey, and it means lower emissions for direct flights rather than multi-leg trips.

Would a train be better environmentally?

The short answer is yes, but it depends on the type of train (diesel or electric) and how the energy source is produced.

By Car?

According to the chart on the previous page, we should all be travelling by Eurostar wherever possible, but until Eurostar expands its network (!) most of us are stuck with our cars to carry out the vast majority of our journeys to work, to school, to the shops... so how can we minimize the environmental impact of our cars?

Smarter driving techniques can help a lot! We probably all know these tricks, but do we use them?

Removing excess weight from the vehicle will help improve fuel efficiency.



Having the correct air pressure in your tyres results in better petrol mileage, better handling of the car, cheaper maintenance costs and a smaller environmental impact. This simple step can make a big difference.



By slowing your travel speed by 10km/h, you could improve your car's fuel consumption by 25%.



When the time comes to change your car

Stop and think, do you really need another car, can your household manage without another one?

Buy second hand – manufacturing vehicles uses an awful lot of energy.

Consider the range of alternative fuel types carefully...

Vehicle manufacturers are spending a lot of time and money developing new ways of powering cars. Most of them are working with electric as it is the most readily available non-fossil fuel, but some are also looking at hydrogen and even sea water.

However, each manufacturer has a different offering in terms of electric vehicles which makes things difficult to compare, measure and evaluate for those considering their next choice of car.

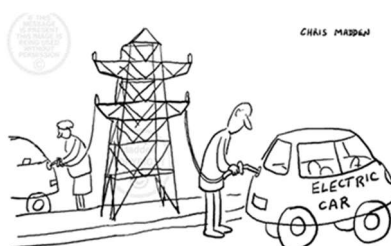
Do you know your PHEVs from your HEVs? your MHEVs from your BEVs? and what about the EREV's? Not all electric vehicles work in the same way. So let's start with a quick guide to the terminology used by the manufacturers...

A Quick Guide to Electric Vehicles

Type	Examples	How do they work?	Range
BEV Battery Electric Vehicle also known as 'pure' or 100% electric cars.	Nissan Leaf, BMW i3, Renault Zoe and Kia Soul.	Charged at a chargepoint. They do not produce any tailpipe emissions.	Currently typical battery-electric cars have a real-world range of over 100 miles, with many of the newest travelling up to 300 miles on a single charge.
PHEV (Plug-in Hybrid EV)	Mitsubishi Outlander PHEV, VW Golf GTE	A vehicle which has a battery, electric drive motor and an internal combustion engine (ICE). It can be driven using the ICE, or the electric drive motor, or both, and can be recharged from an external power source.	Typical PHEVs will have a pure-electric range of up to 30 miles. Once the electric battery is depleted, journeys can still continue in hybrid mode, meaning that there is no range limitation. PHEVs are only efficient if they are regularly charged, otherwise they can be more expensive to run than a conventional petrol or diesel.
E-REV (Extended Range EV)	BMW i3 range-extender (no longer available to buy new).	These are a version of plug-in hybrids. An E-REV combines a battery, an electric drive motor and a small petrol or diesel generator. The electric motor always drives the wheels with the ICE acting as a generator when the battery is depleted.	The range can be between 150-300 miles.
M-HEV Mild Hybrid Electric Vehicle	Ford Fiesta	Self-charging, low voltage system that increases the engine's efficiency.	Increases fuel efficiency by approximately 10%

There are also HEV hybrid electric vehicles – these are not plugged in, the battery is charged by the vehicle motion (braking). Examples include Toyota Yaris and the Honda Prius.

If you would like more information about electric vehicles, the Energy Saving Trust has a handy guide on its website - go to <https://energysavingtrust.org.uk/transport/electric-cars-and-vehicles>



There's always a 'but'



Salar de Uyuni

Batteries contain lithium, a valuable metal. One of the largest deposits of lithium is believed to be stored under the Salar de Uyuni, the vast salt flats in northern Chile and southern Bolivia. The Bolivian Andes mountain range has been estimated to contain over two-thirds of the world's total lithium supplies, according to some experts. Over the period from 2016-2018, the price of lithium has more than doubled and is expected to keep on rising as global demand continues to increase. The problem is that extraction of lithium impacts negatively on other facets of the environment. In a climate so dry and arid as the Atacama Desert and the Salar de Uyuni, 500,000 gallons of water are needed to produce just a single tonne of lithium. This takes away this most precious of resources from neighbouring farmers, who need it to cultivate their crops and livestock. There are lots of other environmental concerns about the use of lithium, not least the thorny problem of battery disposal. The information below is taken from an article from the [Institute for Energy Research](#) based in the USA and discusses some of the options available.

'Automobiles have overtaken consumer electronics as the biggest users of lithium-ion batteries. Because batteries contain toxic chemicals that should not be placed into a landfills, they need to be either recycled, which involves an intensive manufacturing process, or repurposed for other uses.'

Recycling

Recycling them is not easy due to the sophisticated chemical procedures involved. If not handled properly, the heavy metal contained in the battery can lead to contamination of the soil and water.

Batteries can be recycled through smelting, direct recovery, and other, newer processes. While the cost of fully recycling a lithium-ion battery is about €1 per kilogram, the value of the raw minerals reclaimed from the process is only about a third of that. Another way to look at the cost of extraction of lithium from old batteries is that it is 5 times more expensive than mined lithium.

Repurposing

As these advanced technology processes continue to develop, reusing batteries offers another route to their disposal and productivity. Many electric vehicle batteries which are 'spent' still have up to 70 percent of their capacity left—more than enough for other uses. After used electric vehicle batteries have been broken down, tested, and repackaged, they can be used for things like home energy storage.

Manufacturers like Nissan and Renault are using old batteries to provide new services. In Japan, Nissan repurposed batteries to power streetlights. Renault has batteries backing up elevators in Paris. And GM is backing up its data center in Michigan with used Chevy Volt batteries. Old batteries can also be useful for storing solar energy and backing up traditional electrical grids... the resulting significant increase in the demand for battery and battery materials may be a major challenge for suppliers.'

PERILOUS PLASTIC

At the first meeting of the Combroke Climate Change Club we talked about plastic and the damage it is doing to our world.

The war against plastic is ongoing, and although COVID-19 understandably re-focused people’s minds, one of the many unfortunate by-products of the pandemic has been a significant increase in global plastic usage, from people choosing to buy more packaged fruit and veg, to the exponential increase in PPE that we have all become accustomed to seeing and using. Plastic provides the best solution for PPE in many cases, but we need to be careful to use it wisely and dispose of it responsibly – our oceans are already suffering from PPE equipment carelessly disposed of.



However, Combroke people have continued the good work in reducing reusing and recycling our plastic, and it seems that lockdown inspired lots of creativity in our village...

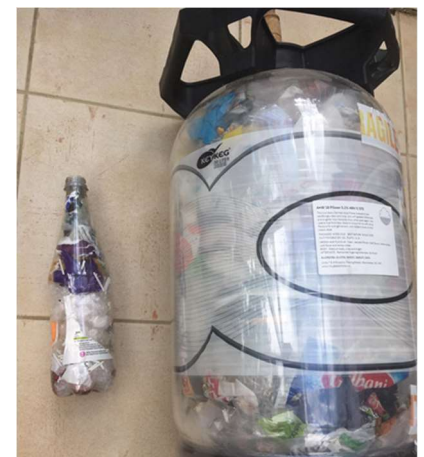
From making beautiful bottle gardens...



to helping our local feathered friends...



to making ecobricks – this one was destined to help make an eco-brick bench.



For more information about ecobricks, including how to make them, and how they can be used, go to <https://ecobricks.org/>

What else has Combroke been up to?

Homegrown and homemade definitely became watchwords during lockdown, from sourdough to yoghurt pot labels, lots of people found the time to be creative, help others and save the planet at the same time. Hurrah!

Lots of villagers have been helping their neighbours... a huge



to all those who organised and made deliveries to the village, from croissants to medicines, from fruit and veg to the all important bread flour, not only keeping people safe, but also drastically reducing the number of car journeys made, and helping us to support local suppliers and producers.

Plant swapping

Lots of people have been sharing their plants, finding new homes for unwanted or overgrown plants, and all with zero plant miles!

We want to hear from you! Let us know about the changes (big or small) that you have made to help the planet. We can then share these ideas with others to help make Combroke even 'greener'! What would you like us to discuss at future meetings? What would you like to know more about? Email parish-clerk@combroke.co.uk



Combroke Sewers (not sure if there is a better way to spell it, sorry sewing people!) helped the NHS during lockdown by sewing lots of scrubs, bags and masks, and many have continued to make their own reusable masks. Washable, re-usable masks are definitely better from an environmental point of view. Think before you buy another pack of single use plastic masks.



A new way of doing your washing – have you tried wash sheets?

They are biodegradable, hypoallergenic, vegan, paraben-free, and work at hot and cold temperatures – they also come in a cardboard box so no plastic packaging. Win win win!

Please note this newsletter is the editor's best attempt at presenting accurate information. Not definitive, all E&OE. No products or companies mentioned in this newsletter are endorsed by CCCC or the Editor.

Next Meeting! Our next meeting will be held via Zoom on **Sunday 6th December 2020 at 3pm**, when we will talk about how to have a more sustainable Christmas. Why not take a break from your online shopping and join us! If you would like an invitation, please email parish-clerk@combroke.co.uk and we will send you a link to the meeting.

Last word. Better late than never...it's taken a while to issue this second edition of the Combroke Echo – apologies. Hopefully you won't have to wait so long for the next one! If you are reading this on paper, please remember to re-use – pass it on to someone else to read, use it to make a paper aeroplane, or use it to light your fire. At the very least, please put it in your recycling bin.