
OtherStuff



Introduction

In other modules we have covered food and drink, heating and lighting for the home, and transport. In this module we cover everything else that we buy.

So this module covers, for example:

- Clothes
- Furniture and fittings for the home
- Electronic goods
- White goods for the kitchen
- CD's, DVD's and other music equipment
- Books, newspapers and other paper products
- All services that we purchase – from lawyers to cleaners, from holiday accommodation to the money we give to tickets for church fundraising concerts.



Other Stuff Module

Not surprisingly the emissions and impacts arising from the making, consumption and waste disposal of this range of items is large.

In *Carbon Detox* George Marshall estimates that they give rise to about 3.3 tonnes of carbon dioxide equivalent for the average UK person.

Then there are all the other implications for biodiversity and for the use of non-renewables, which *ecocell* groups will need to discuss.

A group is unlikely to cover this module until some time in the second year of the programme. This is just as well given the complexity of the calculation of emissions from this range of goods and services – discussed below.

By this time, also, we may have changed and developed this module further, as more and more people contribute to the collective *ecocell* learning experience.

Preparation for the Module

Firstly revisit <http://www.greenchristian.org.uk/ecocell/ecocell-documents>

and read (or re-read) Nine First Steps, especially steps five and seven, which are directly related to this module.

Read also the appendices at the end of this module.

- **Appendix One: Shopping**
- **Appendix Two: Rubbish**
- **Appendix Three: Water**

Appendices one and two are extracts from Mukti Mitchell's *Guide to Low Carbon Lifestyles* (published by The Low Carbon Lifestyle Tour). Appendix three was written by Pete Redwood for the original *ecocell* programme.

Secondly, please read Part 8, Chapter 6 and Part 9, Chapter 8 of *Carbon Detox* – the sections relevant to this module.

Thirdly, in the *ecocell* section <http://www.greenchristian.org.uk/ecocell/ecocell-documents>

open the original spreadsheet for recording consumption: *ecocell* Footprint Measurement Spreadsheet, and read and study the 'Other Goods and Services' sheet, and the four worksheets after it entitled: Other Goods and Services, Donations, Light Carbo Spending, Heavy Carbo Spending and Positive Spending. This is based on the Marshall method in *Carbon Detox*.

Note that we need to record (or at least estimate) our spending on domestic energy, food and travel (as well as our carbon emissions) in order to be able to do the calculations for this module.

If we have a full year of recordings on energy, food and travel it will be easier to do the calculations for this module.

Note any questions or difficulties that you have, and bring them to the group meeting for the module, or to your group accountant.

On the module:

As you convene for the first time for this module and after you have said a prayer and 're-connected' with each other:

Activity One – a discussion: what are the dimensions of this 'other stuff' challenge?

For the different consumer areas covered – clothes, music, etc – ask people to discuss the issues that they think are most significant in their households, and that will provide a particular challenge in their households.

Conclude by asking people to share out responsibilities for researching and suggesting action on the different areas.

Members can then communicate with each other on the different areas by email and at subsequent meetings. For instance, if Joan specialises on furniture, others can send their queries to her, and she can let members know about useful articles or websites that she has found.

Allow about 30 minutes.

Activity Two - a Q and A session on the **Other Goods and Services** sheet on the *ecocell 2* 'Footprint Measurement Spreadsheet', with the group carbon accountant or advisor prepared to explain this accounting process.

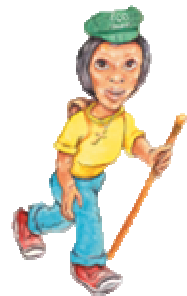
Allow about 45 minutes.

Activity Three – a discussion:

Developing a strategy for personal emissions and impact reduction

One member might lead off on this, basing his or her talk on the *Carbon Detox* chapters referred to above. The *Carbon Detox* strategy (or Marshall plan!) seems to be:

- Buy fewer goods, more (high labour content) services
- The goods we buy: second-hand rather than new



- The new goods we buy: more expensive longer lasting goods
- Then, even more challenging for some: a 'high earner' with a resulting high carbon and/or stressful lifestyle may consider 'earning light' or 'downscaling' moving towards a lower-earning lifestyle.

How easy will it be persuade yourself and all members of your household that you can really look nice with clothes you buy from Oxfam and other second hand shops, provided you spend enough time rummaging around these shops?

How does the recommendation to buy more expensive longer lasting products equate with Marshall's equating of money with carbon where £1 spent equals 1 carbo in the measurement sheets?

What do you think of the last suggestion in the 'Marshall' plan for stressed out 'high earners' to move to a lowerearning lifestyle? Does personal wealth tempt people towards high spending and personal luxuries? Or does John Wesley's precept still hold true today: 'earn as much as you can' and 'give as much as you can'. 'Downscaling' challenges the dominant current secular ethic of 'work hard, play hard' but is it relevant for carbon reduction? And how does this play when people are struggling with rising prices and static/falling wages (or unemployment)?



Allow about 45 minutes.

Activity Four – Teamwork

As with the Energy Module, divide up into pairs or trios of people – suggest pairs of people who are in similar living situations.

Each pair/trio make arrangements to work together supporting each other **on action and learning plans to reduce emissions and impacts from the set of activities covered in this module.**

Members of pairs or trios commit to working with each other between group meetings on these plans, using the members who have agreed to specialise in particular areas as sources of advice.

Time: about 20 minute

Future meetings of the group on this module

As with other modules, future group meetings should then give people the opportunity to tell each other what they have done, what they have achieved and what difficulties they have experienced.

Members may need time to share and discuss these experiences. And of course share ideas on solutions and expertise.



Activity Five – a discussion: Developing further sophistication in measurement and action

George Marshall admits that the measurement tool he uses – basically equating money spent on a particular category of good or service with a certain level of carbon emissions – is quite crude (but a good starting point).

There are numerous websites available, of varying reliability, that will estimate the emissions and impacts of particular products. We also recommend Mike Berner-Lee's book *How Bad Are Bananas?* Profile Books, London, 2010. It is a very useful source book to have, to look up when you need some figures, particularly with the *Food*

and *Other Stuff* Modules, where measurement is more difficult. As he says in the introduction: 'it won't be exact, but you'll get the number of zero's right.' Also, it will "... help you work out where you can get best return for your (emission-reduction) effort ... and (help you to) pick your battles."

As we identify the purchases that we make that cause most harm, can we find a measurement tool that measures the carbon emissions and impacts more accurately?

Your washing machine is packing up, for example, and you are going to spend say £600 replacing it (after having a reliable repair person in to look at it and he or she saying 'sorry...').

Rather than use 600kg CO₂ as your emission figure (white goods are 'heavy carbo' and £1 equates to 1kg), you would research the emission and impact data of particular machines, and then use the figure for the one you purchase.

In this way you can gradually both reduce your impacts and improve the accuracy of your footprint measurement



Appendix One - Shopping

There are three ways that shopping produces CO₂: (1) You getting to the shops. (2) The product getting to the shops. (3) How the product is made.

Getting to the shops

The Weekly Shopping Trip: Kg CO₂ per year

Transport	10 Miles	20 Miles	30 Miles	40 Miles
Car	150	300	450	600
Bus	50	100	150	200
Bicycle	3.5	7	10.5	14

A weekly 20-mile drive to the supermarket (40-mile round trip) mounts up to 600kg of CO₂ emitted in a year. Buying in bulk could save enough CO₂ over the year for a train ride to Barcelona.

Four Ways to save CO₂

- 1) Buy in bulk every other week. Save up to 300kg c & £240 a year.
- 2) Alternate trips with your neighbour. Save up to 300kg CO₂ & £240 a year.
- 3) Go by bus. Save up to 400kg CO₂ a year.
- 4) Cycle to nearby shops. Save up to 586kg CO₂ & £480 a year.

The author's shopping is done as follows:

Flour, pasta, rice, lentils, nuts, raisins, vegetable oil, shampoo and other storing products are delivered in bulk every 2 months. Vegetables come from a market garden a mile away for 9 months of the year. A friend drops off a 5kg piece of cheddar every 2 months. Eggs, milk and other small products come from the village stores. A monthly bus trip is made to a nearby town for herbs, spices and other items. Annual emissions are around 50kg, and there are considerable financial and time savings.

The product getting to the shops

The type of transport is important. Avoid air-freighted goods where possible, as this is very inefficient. Shipping is very efficient.

Distance you can transport 1 kg of goods for 1 kg of CO₂ emissions

Transport:	Ship	Rail	Road	Air
Miles:	33,333	20,000	12,500	370

Most dried products, fruit and bottles are shipped. Dried and concentrated products are best because they save transporting water. For example 1kg rice will feed a family for a week, 1kg bananas will feed a family for one light meal, and a bottle of wine (1kg) is just an accompaniment to one meal.

Here are the CO₂ emissions for transporting 1kg of goods from abroad:

Kgs CO₂ emitted to transport 1kg of goods from abroad

Country	Road	Rail	Ship	Air*	(Miles)
South France	0.06	0.04		2.16	800
Germany	0.06	0.04		2.16	800
Italy	0.12	0.08		4.05	1,500
Central Spain	0.12	0.08	0.02	4.05	1,500
Israel	0.32	0.20	0.04	10.80	4,000
India			0.08	21.60	8,000
Argentina			0.08	21.60	8,000
South Africa			0.08	21.60	8,000
California (sea)			0.10		10,000
California (land/sea)			0.29	21.60	8,000
Chile			0.11	29.70	11,000
Australia			0.15	40.50	15,000
China			0.15	40.50	15,000
Japan			0.15	40.50	15,000

*Air freight includes factor of 3 for extra destructivity of high altitude emissions (Figures are approximate and depend on routes)

Rule of thumb

Buy local first. Then buy British. Then work roughly in order of the countries in the table above, being France and Germany, followed by Israel if goods are shipped. Next buy from Spain, Italy, India, Argentina and South Africa, which are about the same. Then come Chile and California for shipped goods. And finally Australia, China and Japan. In all cases, goods emit more than their own weight in CO₂ when airfreighted. This reaches 10.8kg of CO₂ to fly a kilo of goods from Israel, and 40kg from Australia.

Inside the UK, locally produced products are best, especially if they have not had to travel elsewhere to be packaged and then brought back again.

How the product is made

Product CO₂ emissions have two factors: (1) CO₂ produced in manufacture. (2) Product lifespan.

Cars

According to research by Ford in 1995, manufacturing a car emits approximately the same CO₂ as 1.4 years average use. As you can see from the following table, your choice of car will have a big effect on your annual emissions. Manufacturing a small diesel car emits around 3,900kg of CO₂, which is 328kg per year for a 12 year

lifespan. So the total annual emissions for driving 14,000 miles are around 3,100kg. In a medium size car the total annual emissions are 4,600kg, and for an SUV 9,400kg.

Manufacturing CO₂ Emissions for Cars (All CO₂ figures in kg)

Car Type	Car mpg 14,000 miles	Annual CO ₂ emissions	Manufacturing CO ₂	Yearly share Manufacturing*	Total CO ₂ emissions
Small Diesel Car	60	2,814	3,940	328	3,142kg
Hybrid Car	45	3,234	6,403	534	3,768kg
Medium size Car	35	4,158	5,821	485	4,643kg
SUV	20	8,442	11,819	985	9,427kg

* Based on a 12-year lifespan (Figures are approximate and vary between manufacturers and models)

Is it worth scrapping your existing car before its time for a more efficient one? It will take a number of years for the CO₂ saving to overtake the CO₂ wasted by not using your old vehicle until the end of its life. The answer to the question depends on how much you downsize.

Years to save CO₂ when replacing a 6 yr-old car with a new car

Replacement	Years to save CO ₂
Replace a medium car (35mpg) with a hybrid car (45mpg)	8.6
Replace a medium car with a small diesel car (60mpg)	3.9
Replace an SUV (20mpg) with a medium car	2.8
Replace an SUV with a hybrid car	2.3
Replace an SUV with a small diesel car	1.6

Consider how you might arrange your transport differently, and the minimum size of car you need. If you can downsize considerably, then go ahead. If you need a medium-sized car but would like a hybrid engine, wait until your car is 9 years old before replacing it. Downsizing from an SUV saves CO₂ in 2-3 years, so is always worth it.

Household Appliances

The CO₂ produced in manufacturing is called the “embodied CO₂” of a product. On the following page are some figures for the embodied CO₂ in household appliances:

Embodied CO₂ in manufacturing appliances

Appliance	Embodied CO ₂ in kg	CO ₂ per yr 5-yr life	CO ₂ per yr 10-yr life	CO ₂ per yr 25-yr life
Cooker	509	102	51	20
Fridge	955	191	95	38
Washing machine	764	153	76	31
Tumble dryer	318	64	32	13
Microwave	191	38	19	8
Dishwasher	700	140	70	28
Electric Kettle	11	2	1	0.4
Electric Drill	15	3	2	1
Total	3,463kg	693kg	346kg	139kg

A typical range of appliances in a house have emitted 3.5 tonnes of CO₂ in their manufacture. If they last 5 years, this works out at around 700kg a year. If they last 25 years, it works out at 140kg a year. The energy it takes to make long lasting products is little more than short-life products. So it is worth buying quality products wherever possible. They give more satisfaction too.

If you have the choice between repairing a product or buying new, and they both cost the same, repair it. The CO₂ emitted will be much less.

The bigger the item you buy, the more CO₂ has been emitted to make it. For the above appliances, around 20kg of CO₂ is produced for every kilo of goods manufactured, and this can be used as a rough estimation for most products made of plastic, glass and metal.

The less we buy and the longer we make it last, the less CO₂ is produced. This frees up time that used to be spent in shopping for recreation. 25

Appendix Two Rubbish

Britain's landfill sites emit the equivalent of 8% of the nation's CO₂ emissions. We are also running out of landfill sites in which to bury our rubbish.

When we use the phrase "throw it away" we need to remember that there is no such place as "away". The phrase really means "bury it in the earth".



Six tips to reduce your rubbish

- Keep food leftovers for the next day or give to the birds.
- Put vegetable off-cuttings onto a compost. This could be your own compost bin, or take it to a local market garden.
- Recycle empty tins, bottles, jars and good paper.
- If you have a fire, use newspaper and cardboard to light it. Otherwise put cardboard on the compost with the kitchen waste. Cardboard contains a lot of carbon, which balances out the high nitrogen in kitchen waste, and makes better compost.
- If you have a fire and can burn wood rather than coal, the ash makes excellent compost. Wood takes a little more maintenance than coal as it needs to be seasoned, and emits less heat. But the CO₂ emissions are lower since the trees growing in its place are absorbing CO₂.
- Avoid buying goods in plastic wrapping whenever possible. Once rubbish has been put in all these places, there should be little left for landfill.

Appendix Three Water

Journalist Rageh Omar was born in Somalia. At age ten he travelled to England with his parents. They in Rome on the way and admired the fountains. "I cannot remember whether I was more amazed by the nakedness of the statues, or by the waste of so much water" ¹

Water, like shelter, food and warmth, is a basic necessity to human survival but each of these and many other aspects of our life are taken for granted and we take far more than our fair share without any thought for other people.

Our use of water has increased by more than 70% per person in the past forty years. Because we take it for granted it is too easy to waste it. This part of our journey towards a truly Christian lifestyle will help us to examine our extravagance with this most essential resource.

¹Only half of me - being a Muslim in Britain by Rageh Omar, published by Penguin 2007

Understanding the problem

Like every other resource, our demand for water is increasing year on year. In the past 25 years it has increased by a staggering 50%. Currently, on average, each individual in the UK uses between 135 and 165 litres per day.² If you had to walk to the pump and collect those 16, 17, 18 bucketfuls would you still use as much? How much do you actually need? About 10 litres is probably about right. That is how much a large proportion of the world's

The average lavatory cistern flushes 9 - 10 litres of water each time. 9 - 10 litres of purified, drinking quality water wasted! This represents one third of all water supplied to domestic properties.

population has available for use each day.³ It is also the amount we waste each time we flush the loo! A running tap can use 6 litres a minute⁴

If you are a one or two person household, a dishwasher may use more energy and more water than washing up by hand. Above two people it can save on both.

Extreme cleanliness has become a priority so we wash more, bathe more, shower more and wash our clothes more often than our grand-parents did.

Our use of washing machines has increased nearly 25% in the past fifteen years. In 1991 it was only used three times a week. Now it is more than four times a week.

All of this requires more water. A few years ago, during drought periods we were urged to shower rather than bath because it used less water. Then we learned about power showers which can use more water than a bath.⁵ More of us have cars than ever before, which need washing frequently. It is all too easy to get the hosepipe out to do the job quickly.

300 litres of water. Using a bucket uses less than 50 litres.

Our gardens are all neat and trim with nice green, carefully cut lawns. They need regular watering to keep everything growing green and lush. A hosepipe on the garden disposes of eight or more litres a minute.⁶

According to the Met Office, over the last ten years average rainfall across the UK has decreased by 8% with more rain falling during the winter months.

Water is measured in cubic metres (m³). 1 m³ = 1,000 litres = 220 UK gallons

What to do

Waste and pollution are against God's Law. We do not have the right to misuse a resource so precious, so sacred, even if we do not directly see the results of our pollution. Over 1 billion people (nearly 16% of the world's population) live without a safe and reliable water supply. Half of those in developing countries live without adequate sanitation. One toilet flush wastes more water than most people in developing countries use in a day for drinking, washing, and cooking.



²Offwat

³Tearfund

⁴Calculations from Thames Water

⁵12-15 litres per minute

⁶500 litres per hour according to Thames Water

- A water saving device in your toilet cistern can save up to three litres per flush.
- Replace tap washers regularly. A small drip from a tap can waste as much as four litres of water a day.
- Two thirds of the water used in the home is used in the bathroom. Leaving the tap running while you clean your teeth can waste up to nine litres of water.
- A five minute shower uses about a third of the water of a bath, saving up to 400 litres per week. Cutting one minute off your shower time can save 31,500 litres of water per month.
- Fit a water meter. Only 20% of all households have a meter yet water consumption usually drops 18-25% when a water meter is fitted. Bills usually drop significantly as well.
- Keep a jug of water in the fridge rather than run the tap till it runs cold.
- Waiting until you have a full load for your washing machine can save up to 70 litres. The half-load programme is rarely economical on either water or energy.
- Waiting until you have a full load for your dishwasher can save up to 30 litres. The half-load programme is rarely economical on either water or energy.
- Wash dishes in a bowl, not under a running tap.
- Rainharvesting can replace up to 50% of a household mains water consumption.
- Get a water butt - or two or three. Most local authorities can supply them at a reduced price. Collecting rain from your roof can reduce surface water by up to 60% per property. With so many gardens now covered in paving, decking and parking areas, surface run-off is a major cause of flooding in urban areas.
- The roof on an average 4-bed family home captures more than 100,000 litres of rainwater each year.
- Cut the grass less and let it grow longer! It can survive dry periods far better.
- 'Grey water' from the bath, shower or hand-wash basin can be used for watering the garden provided it is passed through a basic filter.
- Investigate systems that allow you to use 'grey water' for flushing the toilet.
- Do not dispose of tampons, sanitary towels, condoms, cotton buds or anything else down the toilet. Somebody has the unpleasant job of retrieving it at the other end! Bag it and bin it!

