



# Emit This

**13 strategies for squeezing more life out of less carbon**

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# More life, less carbon

Climate change is a massive problem, but by understanding your lifestyle's impact you can tackle it more effectively.

Climate change is such a huge problem that most of us don't know where to start tackling it. International negotiations focus on national emissions targets. Countries devise policies aimed at the emissions of industries. And companies look at the technologies and actions they can use to cut emissions.

These things are all essential, but are they the only way to tackle climate change? Do we have to wait for governments and companies to get their act together? Or can we also take climate action closer to home?

Climate change is being caused by people. We are the principal financiers of greenhouse gas emissions. And we have the power to drastically reduce them if we choose to. This book is about taking climate change personally by striving to squeeze more life out of less carbon.

It details 13 strategies to tackle your own carbon footprint as well as providing some global context for carbon budgets and climate stabilization.

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## Inside

### The Thirteen Steps

- 1 Get some perspective
- 2 Stuff your face
- 3 Eat the earth
- 4 Make yourself comfortable
- 5 Let your home chill out
- 6 Get on your bike
- 7 Love your local
- 8 Buy great stuff
- 9 Do more with less
- 10 Watch your watts
- 11 Pay the man
- 12 Pick other fruit
- 13 Tap your talent

### The Planetary Picture

Stable climate budgets  
A planet full of people  
Better not bigger

### The Big Squeeze



# 1. Get some perspective

Calculating your carbon footprint helps to understand the fastest and easiest ways you can make large cuts.

## Calculate

There is a saying in consulting that ‘you can’t manage what you can’t measure’. As an idea it can be a little irritating, because it can cause an obsession with all things quantifiable at the expense of other value. But for carbon footprints it makes great sense.

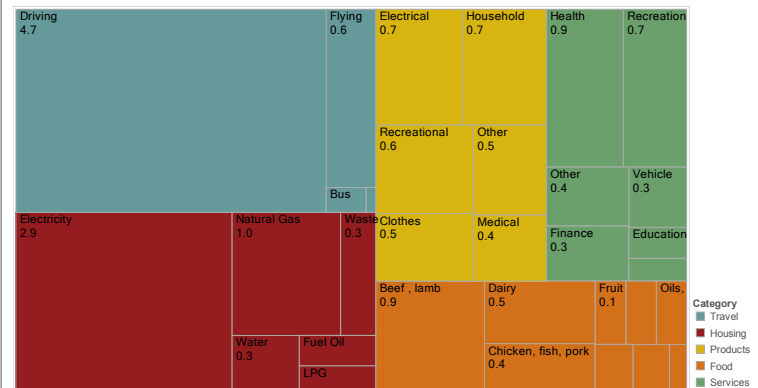
The perspective a good calculation can provide will prevent you wasting time and energy on trivial action. For most people a small number of carbon intensive activities dominate their carbon footprint, and these are the best things to target.

The American carbon footprint is a good example. The carbon footprint of a typical American’s personal spending was about 19t CO<sub>2</sub>e in 2010, while a further 5t CO<sub>2</sub>e generated by government and construction spending. Half of the American Personal Footprint results from just four things: driving, electricity, natural gas and red meat. But these four things account for just 10% of personal spending, making them the perfect targets.

Calculating your own footprint will help you prioritize the major sources of emissions in your lifestyle, avoid wasting energy on things of little consequence and teach you a lot about emissions.

Although your footprint will be unique it is common for five activities to dominate your footprint. These ‘big five’ are driving,

## The American Personal Footprint: 19t CO<sub>2</sub>e (2010)



Note: Government and construction emissions account for a further 5t CO<sub>2</sub>e

flying, electricity, heating fuel and meat.

Prioritizing emission reductions in these areas will often reap the biggest dividends. Indeed most of the strategies in this book address these ‘big five’ activities in one way or another.

A good calculation will help you pick the best strategies for putting a big dent in your own footprint [Click to learn more](#)

## 2. Stuff your face

Eating more of the food you buy can cut your foodprint, grocery bills and trash.

### Food

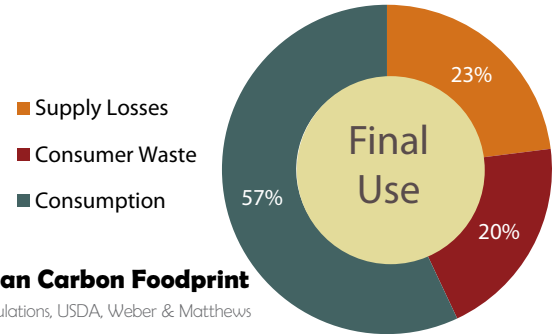
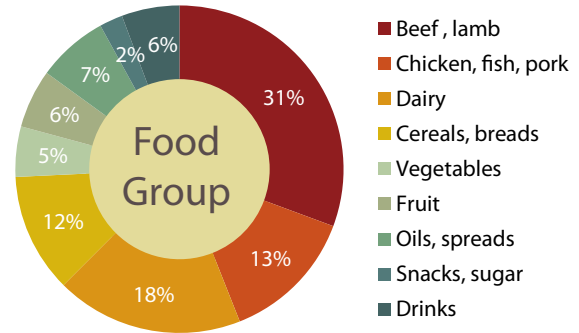
Around 12% of global greenhouse gases arise from agriculture, but once you consider its role in deforestation as well as freight and storage the food system accounts for almost a quarter of all emissions.

A great deal of these emissions result from food that is never eaten. About a quarter of human food produced globally is lost before ever making it to consumers. A further tenth is wasted by consumers in their homes, a share which is much higher in wealthy countries than in poorer ones.

The graphic on this page shows a breakdown of the average American foodprint in terms of emission sources. The top image splits emissions between food groups, while the bottom one does so between final uses.

In the US almost a quarter of food emissions are produced for food that is never sold, what is generally called 'supply losses'. Some of these losses occur naturally during food processing but a great deal is due to spoilage and aesthetics.

A further 20% of the US foodprint is generated by food that is purchased but never eaten, what we call 'consumer waste'. Again some of this is from natural waste like skins and bones, but the majority results from people letting things go out of date or not eating what they prepare.



### The American Carbon Footprint

Sources: Own calculations, USDA, Weber & Matthews

What can you do? It's ridiculously simple. If you just eat more of the food you buy you can often cut your foodprint by up to a quarter. Lots of simple tactics can help. You can measure your waste, improve storage, cook smaller portions, plan meals better and eat more leftovers.

Whatever tactic helps you stuff your face instead of your bin will shrink your foodprint. **Click to learn more**

# 3. Eat the earth

Eating more low carbon foods can both slash your foodprint and improve your diet.

## Food

When it comes to emissions foods vary enormously. Some food grows in the soil, needing limited fertilizer, no added light or heat, and requires little energy to harvest and process. Such food typically has a low carbon footprint. Things like potatoes and apples.

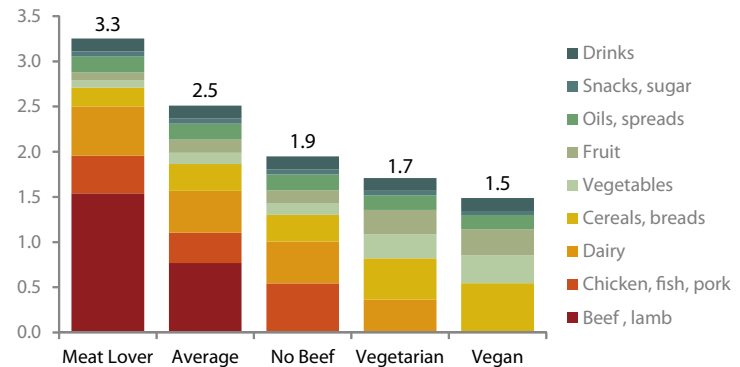
Other foods can require far greater energy inputs and as a result generate significant emissions. Beef, lamb and cheese are classic examples. Due to their feed requirements, methane production and processing losses red meat and dairy products are typically very carbon intensive to produce.

In a comparison of five different American diets we found that a meat lover can have a foodprint more than twice that of a vegan. Given that 60% of food energy is identical in all five of the diets compared this analysis highlights how a few carbon intensive foods can dominate a foodprint.

By eating more low carbon foods like grains, pulses and fruits in place of high carbon foods like meats and dairy you can reduce your foodprint greatly. In fact the potential for reductions is greater than these figures imply, because they are based on average food group intensities and assume typical waste rates.

If a person eats a lot of low carbon foods at the same time as minimizing their waste they can easily go below one tonne.

## 5 American Foodprints Compared: t CO<sub>2</sub>e/person



Sources: Own calculations, USDA, Weber & Matthews

Of course what we eat is about much more than just carbon emissions, and thankfully a healthy diet and a low carbon diet have much in common.

By focusing on eating more healthy low carbon foods we can both cut emissions and improve our diet. This strategy can also be a lot more successful than telling yourself what you shouldn't eat. **Click to read more**

# 4. Make yourself comfortable

Improving insulation and air tightness in your home can help cut both emissions and heating bills.

## Housing

The amount of heat you use in your home is a function of three things: the difference between the internal and external temperatures, how well insulated your home is and how air-tight it is.

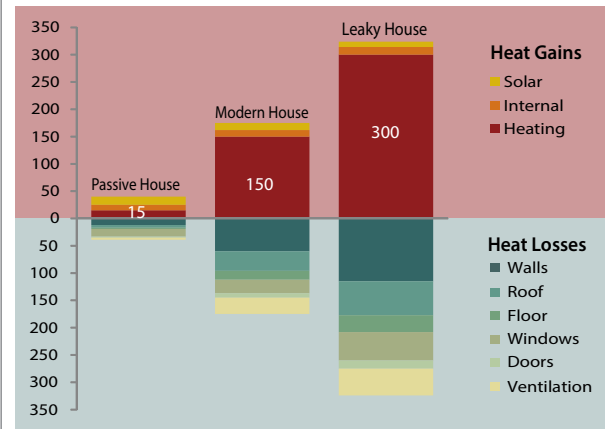
The better your insulation and draught proofing the more comfort you get from each unit of heating. The type of improvements you can make will depend a lot on whether you own your home, its construction type and what your local climate is like. But the principals are universal.

Because a home stays at a roughly constant temperature over the course of year the amount of heat it gains must equal the amount it loses. Houses gain heat from heating systems, the sun's energy and internal sources of warmth like appliances and people's bodies. Heat is lost via conduction through wall, roofs, floors, windows and doors, and also through ventilation.

A poorly insulated 'leaky house' needs a lot of heat to keep it warm, a better insulated 'modern house' considerably less and a super-insulated 'passive house' needs almost no heating at all.

If you have poor loft insulation, an unfilled wall cavity, no draft excluders or uncaulked air gaps these will be a cost effective way to start. More expensive options can include new windows and external wall insulation, but simple things like

Heat gains and losses by house type: kWh/m<sup>2</sup>a



Sources: Own calculations, PHPP

rug, curtains and radiator panels can also help.

Improving insulation and airtightness can be beneficial for almost any home, whether it is blocking a few leaks or doing a full retrofit. The benefits also extend well beyond cutting carbon and reducing bills by improving comfort too. [Click to read](#)

# 5. Let your home chill out

Dropping your thermostat by a degree or two in winter is an easy way to reduce heating emissions and bills.

## Housing

This tactic will not be for everyone, but when you don't own your home or can't afford to make big efficiency improvements simply letting your home chill out can be a great way to cut your heating bill and emissions.

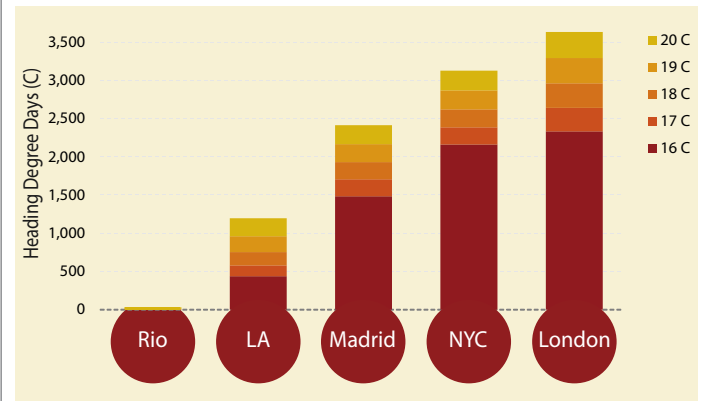
As we noted in the last section heating demand is a function of your home's insulation, its air-tightness and the difference between internal and external temperature. In fact both the heat lost through surfaces and via ventilation are directly proportional to the temperature difference. So reducing the difference will reduce heating needs.

We can measure the difference between internal and external temperature using what are called degree days. For example if it is 10°C for a week, and you kept your home at 20°C all that week, the difference would be 70 degree days.

In this chart we compare heating degree days for five different cities using five different base temperatures. The difference between each city just reflects the weather. But looking at the individual cities is more interesting.

Take London, using a base temperature of 16°C it has 35% fewer heating degree days than with a 20°C base. That means a 16°C home has heating bills and emissions 35% lower. Of course most people don't want a home that cold, but the

Heating Degree Days Compared by Base Temperature (C)



Sources: Degreedays.net

principal has many useful applications.

If you drop your thermostat by 1°C (1.8°F) in winter you will use roughly 10% less heat. Segmenting your home into warm areas and cooler areas will also reduce heating needs. As can ensuring you don't unnecessarily heat when sleeping or out.

Letting your home chill out when practical can do wonders for cutting heating emissions and bills. [Click to read more](#)

# 6. Get on your bike

Efficient cars, public transport and bicycles can provide miles with a fraction of the footprint.

## Travel

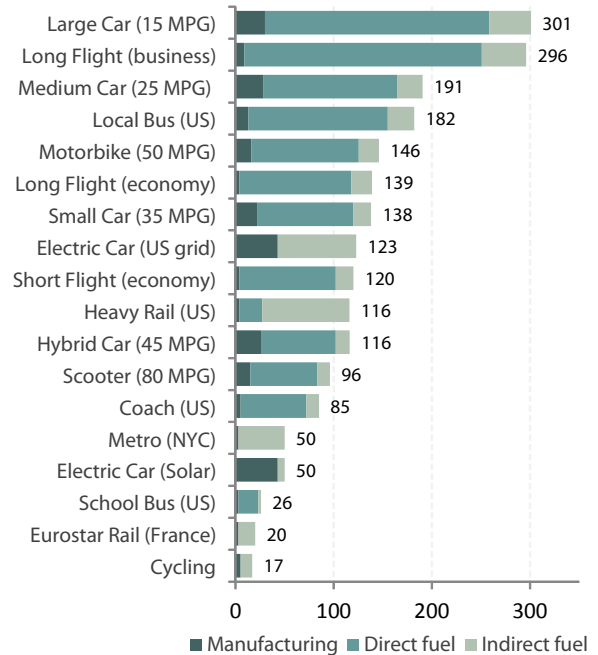
The carbon intensity of transport varies hugely depending on vehicle type, fuel source and occupancy rates. To make a comprehensive comparison of transport modes we need to consider the full emissions involved in vehicle manufacturing, fuel use and fuel production.

Taking all these things into account and dividing by average occupancy tells us how carbon intensive a mode of transport is. The metric we use in this chart is grams of equivalent carbon dioxide per passenger kilometer (g CO<sub>2e</sub>/pkm). Occupancy for each of the cars is 1.6 people, for bikes it's 1.

The large car is the most carbon intensive way to travel, while cycling is the least carbon intensive even once you include the footprint of the excess energy needed to pedal. The poor fuel economy of the large car means it is around three times more carbon intensive per kilometer than the hybrid vehicle, and six times that of the solar powered electric car.

Public transport is heavily influenced by occupancy rates and fuel source. Electrified systems are generally quite low carbon, particularly if they use low carbon electricity.

The best option of all is the humble bicycle which is both very low carbon and substitutes well for short car trips which are inherently high carbon due to low speeds, idling and



## The Carbon Intensity of Travel: g CO<sub>2e</sub>/pkm

Sources: Own calculations, DEFRA, EIA, EPA, Chester & Horvath

breaking. An electric bike would also perform very well.

Your own options for low carbon transport will depend greatly on where you live and work but there is invariably a way to get more miles from less carbon. This is particularly true if you have good access to bike paths, public transport or an efficient car. [Click to read more](#)



# 7. Love your local

Flying is the fastest way to generate big carbon footprints so any avoided flight will result in a large emissions cut.

## Travel

The problem with flying is not that it is incredibly carbon intensive per mile, but that it is so efficient at covering those miles. Moreover there is simply no practical alternative for long distance overseas travel that provides the same type of convenience as flying does.

Jet engines produce carbon dioxide emissions at an incredible rate in order to keep a plane in the air. We can make this clear by showing how much travel you get from the same carbon budget using a plane, a car and a bike.

A flight from London to New York and back over a weekend has a 1.5 t CO<sub>2</sub>e footprint (radiative forcing multipliers not used). This is equivalent to a year's car travel for the average UK citizen, or a lifetime's cycling for a Dutchman. That is just how fast flying burns a hole in your carbon budget.

What can we do about flying? Beyond flying less the options are limited. In Europe and Asia high speed rail alternatives are getting better, and these are great options in terms of emissions if you can use them. Technology like video conferencing and skype can also reduce the need to fly a little. Holidaying close to home can make a big difference. And if you are going to fly then going for longer but less frequent trips is a useful tactic.

But at the end of the day flying is what it is. It is an

### Flying

London-New York economy return

1.5 t CO<sub>2</sub>e

### Driving

A year's driving for a UK citizen

1.5 t CO<sub>2</sub>e

### Cycling

A lifetime's cycling for a Dutchman

1.5 t CO<sub>2</sub>e

### Traveling on a carbon budget

Sources: Own calculations, DEFRA, no RFI multiplier

extremely convenient way to travel long distances that generates very high emissions. Beyond biofuel options there is limited likelihood it can be significantly decarbonised soon.

To have a carbon footprint consistent with a stable climate we really shouldn't fly at all. If we must fly we should try to fly less. And if we do fly we should consider compensating for those emissions by funding a reputable offset, or some other form of climate action.

Just one avoided flight can take a big chunk out of your carbon footprint. [Click to learn more](#)

# 8. Buy great stuff

Choosing quality rather than quantity is an easy way to reduce product emissions.

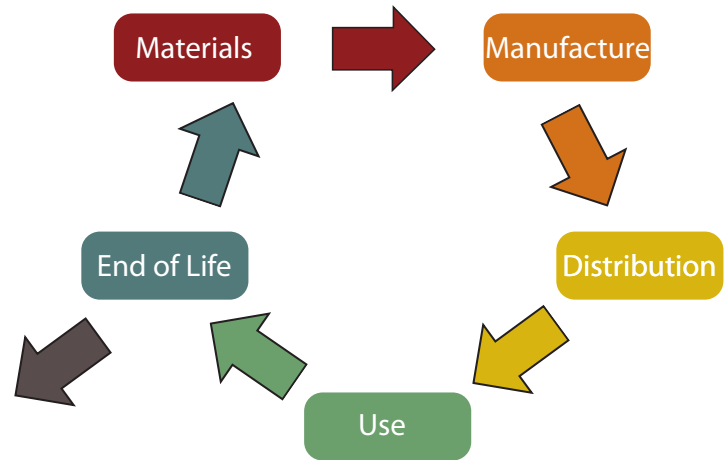
## Products

A product's lifecycle can be split into five stages: materials, manufacture, distribution, use and end of life. Depending on the nature of the product considerable emissions can occur in any of these stages in any corner of the globe.

The main way an individual can reduce the emissions caused by their demand for products is through their purchasing habits. Owning fewer but better things can be a great way to cut down your product emissions. By buying great stuff you typically extend a product's use phase by many years, making sure you get the most pleasure from its production.

New purchases, and their resulting emissions, can also be avoided when good used alternatives are available. The web has made finding quality second hand items much easier. Also, if a product you are buying requires energy to operate then ensuring it is as energy efficient as possible is important for ensuring you minimize use phase emissions.

Low carbon design is beginning to become more commonplace. Some companies now differentiate their products by choosing materials and manufacturing processes that require less embodied energy, as well as using lower carbon energy sources. And finally when a product can't be reused, or re-purposed, recycling as many of its materials as possible provides



## The 5 Stages of a Product's Lifecycle

Note: recycling completes the material loop

lower carbon materials for future products.

Regardless of the stuff you buy the principals of reducing product emissions are the same. A low carbon product is one that lasts, is energy efficient, embraces low carbon materials, limits unnecessary packaging and is recyclable at the end of its life. You may already own a number of products that fit this description. **Click to learn more**

# 9. Do more with less

Buying or producing low carbon electricity can power more life with fewer carbon emissions.

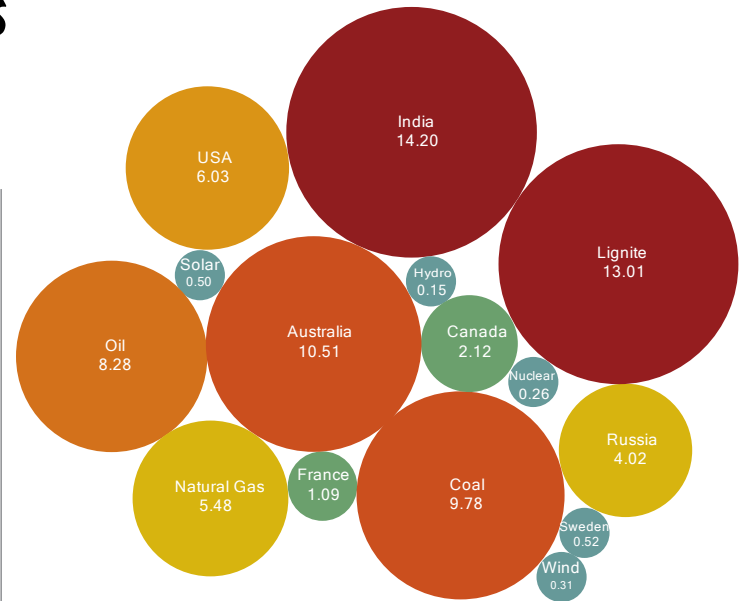
## Housing

The carbon intensity of electricity you get from the grid varies enormously depending on the fuel mix. The chart on this page shows the carbon footprint of using 10,000 kWh of electricity, which is roughly similar to a US or Canadian home's annual power demand. In each case the figures include emissions for fuel combustion at power plants, fuel and plant production, and grid losses.

If we look at the fuels we see that to get 10,000 kWh of electricity to our home using coal generates almost 10t of CO<sub>2</sub>e. Using oil it is 8.3t and for natural gas about 5.5t. While for each form of low carbon power that figure is 0.5t or less.

Before considering buying or producing low carbon electricity you should first check the carbon intensity of your local grid. In India, Australia and certain states in the US high coal use means grid electricity is very carbon intensive. In such places accessing low carbon power will make a big difference. But in France, Sweden and parts of Canada nuclear and hydro mean the grid is already quite low carbon, so it might be best to invest in other technologies that will reduce your emissions.

To get low carbon power you have two options, generate your own or pay a utility to produce it for you. In most situations solar panels are the best option for producing your own energy.



## The Carbon Footprint of 10,000 kWh: t CO<sub>2</sub>e

Sources: Own calculations, DEFRA, WEC

If you do opt for a green tariff be sure to check your provider actually has a low carbon mix of generation assets and is developing new projects that it is not already obligated to.

To live well on a small carbon budget low carbon electricity is essential. **Click to learn more**

# 10. Watch your watts

Monitoring your electricity use can avoid wasted energy, save money and reduce emissions.

## Housing

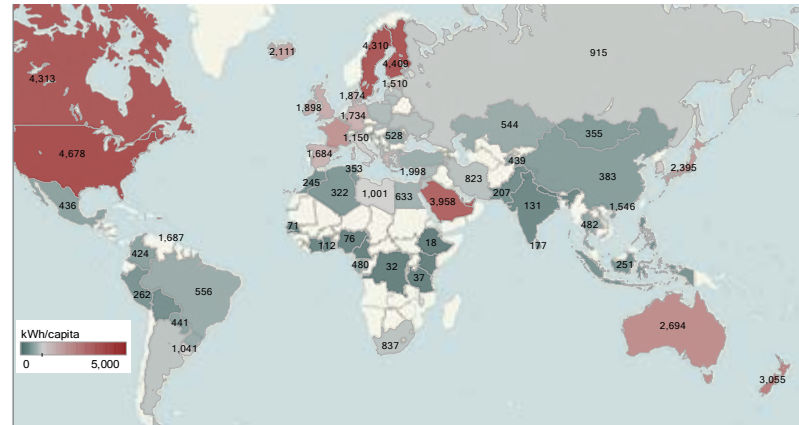
In an ideal world we would all have access to inexpensive low carbon power. But that isn't always the case. If you have limited opportunity to generate your own energy, no good green tariff options or just want to cut your bills, it will help to monitor your electricity use.

The first thing to do is ask yourself how much electricity you use each year. Your electricity bill should tell you what your home used last year, so simply divide that by how many people live in your home and you have a rough estimate of your usage.

To help get motivated put this figure in perspective. The average American uses 4,678 kilowatt-hours (kWh) a year in their home, in the UK it's 1,898 kWh, in China 383 kWh, in parts of Africa less than 100 kWh. The global average is 730 kWh each.

The key to cutting electricity use without compromising lifestyle is to watch your watts. The two most effective ways to monitor your electricity use are in real time for the whole home and by doing a once off audit of all your different appliances.

Using a monitor that displays your real time usage can be a simple way to prompt you to turn off things when you aren't using them. Such monitors can often display your current usage in terms of electricity, money or even colours. In addition keeping a weekly account might also help motivate you.



## Per capita residential electricity use: kWh/year

Source: Enerdata

A second good way to watch your watts is to do your own audit of appliances using a plug-in meter and labels to help you understand where your power goes. This will tell you where your power hungry appliances are and how they can be improved.

Watch your watts properly and you'll be surprised how quickly your electricity use can tumble. [Click to learn more](#)

# 11. Pay the man

Spending more money on services is a simple way to reduce your carbon footprint

## Services

The more money we spend on people the lower our carbon footprint is. We can show this using estimates of the carbon intensity of spending in America. Spending a dollar on electricity or natural gas generates around 5.2 kg CO<sub>2</sub>e. For gasoline the figure is 2.9 kg, for flying it is 1.9 and for food it is 1.0. The average for products is 0.5 while for services it is just 0.2 kg CO<sub>2</sub>e/\$.

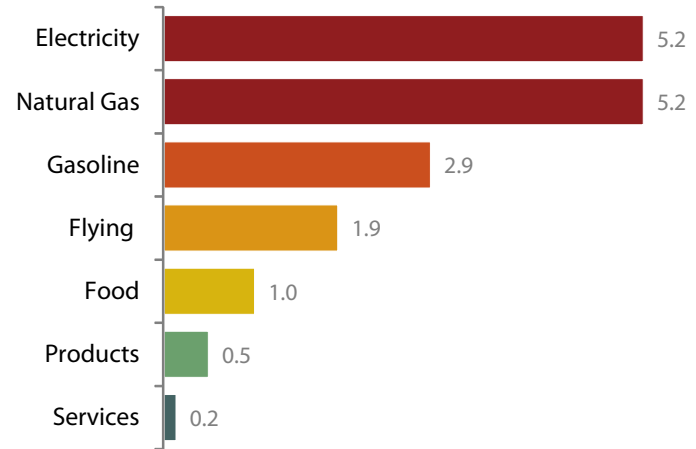
The reason services are relatively low carbon is that much of the money you spend on a service goes towards paying people, rather than towards energy or materials. Spending that is energy heavy tends to have the highest carbon intensity, while for labour heavy spending the carbon intensity is minimal.

The large differences in carbon intensities mean that a small share of spending causes the majority of emissions. In the US less than 15% of consumer spending relates to electricity, natural gas, gasoline, flying and food and yet these five things account for more than 60% of personal emissions.

If by spending more money on services you spend less on anything else it will likely reduce your footprint significantly. We can give some concrete examples using the US figures.

Let's say that by heating less you save \$100 on natural gas and instead spend that money on a service. That will save 500

## Carbon Intensity of Spending kg CO<sub>2</sub>e/\$



Sources: Own calculation, BEA, EPA, IO-LCA studies

kg CO<sub>2</sub>e. Spending \$100 on services instead of gasoline will save 275 kg, for flying the saving is 175kg and for food it's 85kg.

If it means spending less on anything else then paying the man is a simple way to cut carbon. **Click to learn more**

# 12. Pick other fruit

If correctly motivated and well researched carbon offsets can be a useful addition to your carbon cuts.

## Offsets

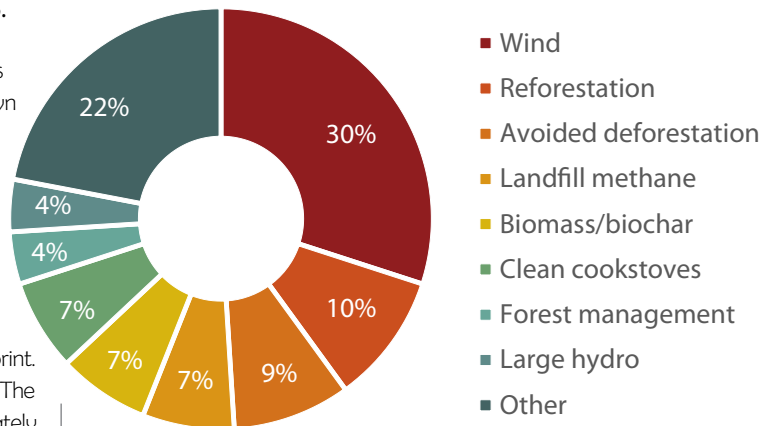
The most valid criticism of carbon offsetting is that it sends the wrong message. That rather than deal with our own emissions we can simply offset them at a limited cost in a faraway place. If this is your motivation for offsetting then the critics have a point.

If however you choose to buy offsets as a way of supplementing your own actions it can be a useful tool. In fact at their best carbon offsets are nothing to do with 'offsetting' at all. They are the voluntary funding of cost effective emission reductions beyond that of a person's footprint.

A good quality offset should meet a number of criteria. The project should produce a real emissions reduction, be accurately measured against a baseline, be additional (not occur without the project), permanent and independently verified by a third party. Verifying additionality can be particularly tough.

After some very rocky beginnings the general quality of carbon offsets is improving due to the widespread adoption of voluntary carbon standards and greater buyer awareness. Despite these improvements anyone interested in buying offsets should do some careful research.

If you do buy an offset be sure it comes from a reputable company, meets a good third party standard and is a



## Voluntary Carbon Market by Offset Type

Sources: Ecosystems marketplace, BNEF

technology you approve of. It can also be useful to ask whether the project you support provides benefits over and beyond carbon mitigation, like the health benefits of clean cookstoves.

Some of the 'lowest hanging fruit' in terms of emissions reductions are nothing to do with your footprint. With the right research and motivation you might want to pick them.

**Click to learn more.**

# 13. Tap your talent

Using your unique talents you can have a climate impact that reaches far beyond your own footprint.

## Innovate

If you make a serious attempt to calculate and reduce your carbon footprint you will understand the enormous challenge we face in trying to stabilize the climate.

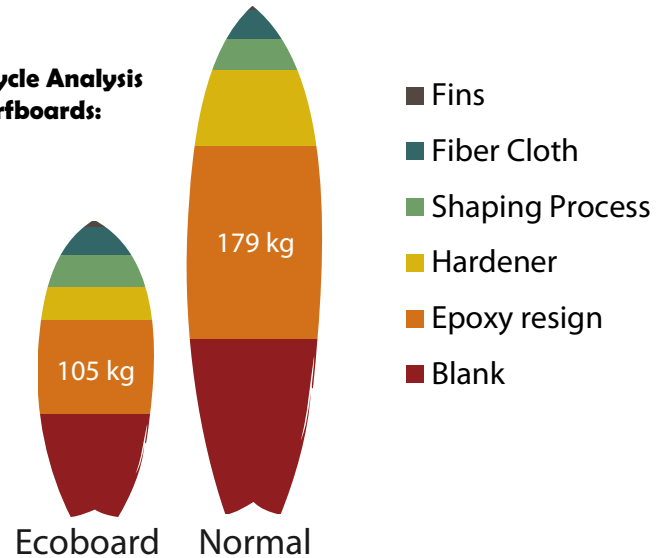
Because greenhouse gas emissions occur due to such diverse forms of human activity our climate solutions must also be diverse. While it is imperative that we improve low carbon energy supplies we don't all need to be an engineer to come up with positive solutions. You could:

- Help reduce emissions in your workplace
- Campaign for walk-ability, cycling and public transport
- Support action to tackle deforestation globally
- Engage politically to promote carbon pricing
- Invest in a business developing low carbon technologies
- Volunteer your time to promote climate change awareness

Better yet, you may think of an original form of climate action that builds on your existing skill set. In the adjacent graphic I've represented a lifecycle analysis of two surfboards.

One is a normal board and one is an **eco-board** made from recycled polystyrene that pays close attention to energy inputs thus reducing emissions by 50%. It's easy to look at a surfboard and think it's just a surfboard, but it's not just a surfboard. It's a solution. It's a couple of guys taking a problem like wasted

## Lifecycle Analysis of Surfboards: CO2



Source: Sustainable Surf

polystyrene and reinventing it into something better that has real climate benefits. We all have talents we can bring to the climate problem. [Click to learn more](#)

# Stable climate budgets

Spending by consumers is responsible for two thirds of greenhouse gas emissions and can be a key driver of cuts.

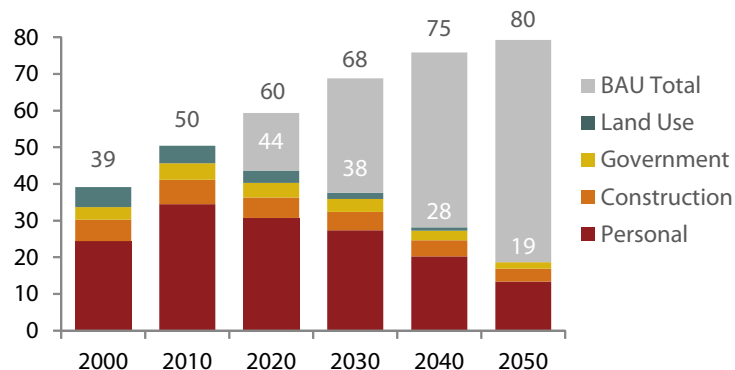
## Budgets

In 2010 mankind emitted 50 Gt CO<sub>2</sub>e of greenhouse gases. These emissions contributed to the increased atmospheric concentrations of gases that are warming the planet. We can divide emissions up between gases, countries, fuels or even industries to help us understand the problem. But just how useful is it to the average person to know that carbon dioxide, China, coal and electricity are big drivers of climate change? In fact while such accounting is valuable for policy purposes it can dis-empower people by making the problem feel too big to tackle. There is however an alternative approach.

Consumption footprinting uses input-output analysis to understand emissions in terms of the spending that pays for them. In 2010 consumers paid for almost 70% of global greenhouse emissions in the form of transport, housing, food, product and service purchases. This is what we call the 'personal footprint'. The remaining emissions came from a mix of government spending, construction and land use change.

Consumption emissions can also be used to understand the challenge of stabilizing the climate. Based on the business as usual (BAU) trajectory of global emissions the world is on track to be about 3-4 degrees centigrade warmer than the

## Global Carbon Budget for 2°C Target: Gt CO<sub>2</sub>e



Sources: UNEP, IEA, own calculations

preindustrial level by the end of this century.

To have a decent chance of limiting warming to 2 degrees we need to cut emissions drastically over the next 40 years, from 50 Gt currently to about 20 Gt by 2050, and then further.

Stuck between these extremely ambitious emissions cuts and the risks of a very hot planet we desperately need to find ways of squeezing more life out of less carbon. [Click to learn more](#)



# A planet full of people

The growing population and shrinking carbon budget means we must refuel our lives and limit fossil fuel use to industrial necessities.

## Budgets

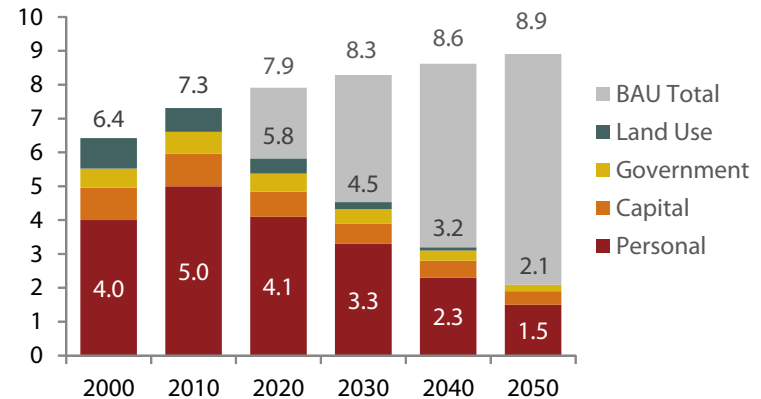
To make carbon budgets more useful to people it helps to express them in terms of individual emissions. Because our global carbon budget is expressed in terms of expenditure categories we can simply divide it by the expected population to estimate a personal budget.

In per capita terms business as usual (BAU) emissions are expected to grow from a little over 7t CO<sub>2</sub>e per person in 2010 to around 9t in 2050. But to have a good chance of limiting warming to 2 degrees they need to drop to about 2t by 2050.

For the 'personal' budget including housing, travel, food, products and services this means a fall from about 5t currently to just 1.5t in 2050. But averages can be deceiving. In 2010 half the world's population was living off a personal budget of 1.5t or less. In contrast one billion high emitters had footprints over 10 tonnes and were responsible for the majority of global emissions.

To have any hope of stabilizing the climate we must find a way of delivering the lifestyles people aspire to while generating far fewer greenhouse gas emissions. Given that fossil fuels currently supply more than 80% of global energy that seems naive. But that is brutal math of climate change. To stabilize atmospheric concentrations of greenhouse gases there is little room in the budget for un-sequestered emissions beyond

## Personal Carbon Budget for 2°C Target: t CO<sub>2</sub>e/person



Note: Personal includes housing, food, travel, product and service emissions

industrial essentials like steel making, plastics, cement and shipping.

So is such a transition even possible? On a social level quitting fossil fuels currently looks very difficult. Economically it also looks challenging, though the benefits will likely outweigh the costs in the longer run. However on a technical level the prospects are far brighter. [Click to learn more](#)

# Better not bigger

By changing how we get our comfort, power, miles, calories and products we can drastically reduce emissions and still live well.

## Budgets

Whenever you spend it generates a certain amount of economic activity, and each part of that activity has associated emissions. Your personal carbon footprint is the sum of all the emissions that occur due to your spending. The easiest way to understand personal carbon footprints is to separate them into different categories like housing, transport, food, products and services.

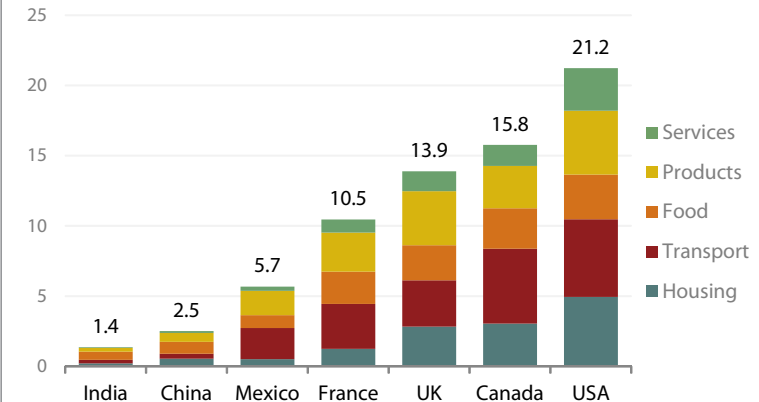
Personal footprints vary enormously between countries depending on levels of wealth, consumption patterns, energy use and energy production. In the example on this page we see that in 2004 the average American's footprint was roughly twice that of the French, and 15 times that of an Indian.

Looking at this chart it seems hard to conceive that we can transition to a world where the average personal footprint drops from 5 tonnes down to less than 2t. But living well and emitting a lot is not necessarily the same thing.

We all need food to eat, somewhere to live, a way of moving around and possessions. But the miles, kWh, calories and kilograms we consume today can often be delivered while generating far fewer emissions.

Super insulated houses exist, low carbon electricity is improving, food production awareness is growing, transport is

**Personal Carbon Footprints: t CO<sub>2</sub>e (2004)**



Sources: EUREAPA

being electrified and materials increasingly recycled.

We have a growing list of climate solutions that will be further improved by normal people using them more. And though we won't all start living one tonne lives any time soon we can each make a start by focusing on solutions that squeeze more life out of less carbon. **Click to learn more**

# The big squeeze

Finding a way to live that is both desirable and sustainable is a universally important challenge.

**O**ur food, housing, travel, product and service spending pays for two thirds of global emissions. Although many of these emissions occur in factories and businesses far from us they are a product of how we spend our money. So when we choose to invest in a low carbon solution we make an important statement.

When you act to improve your own carbon footprint you are taking responsibility for your climate impact. Using a combination of low carbon technologies and simple actions you should be able to improve your footprint greatly with limited inconvenience.

In 2010 the average personal footprint globally was around 5t CO<sub>2</sub>e. To stabilize the global climate this will need to

eventually decline to 1t CO<sub>2</sub>e or less.

In 2010 almost 3 billion people globally already had a footprint of less than 1t CO<sub>2</sub>e. In stark contrast a billion high emitters had footprints over 10t CO<sub>2</sub>e and were responsible more than half of global emissions. Those of us who are currently high emitters are best placed both to cut our own emissions and support global solutions.

It is perfectly possible to live within a 1t CO<sub>2</sub>e budget, as almost half the world's population does it. The challenge is to live really well within that budget. In order to stabilize the climate and improve energy access for billions of people we need to focus on solutions that are both practical and universally useful. We can all be part of the solutions that squeeze more life from less carbon.

We all need  
to squeeze more  
life out of less  
carbon

## Acknowledgments

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