

dig it! magazine

Dig It!



environment issue

examining the real meaning of climate change

Sustainable lifestyle

Are we doing our bit? Results of surveys show stumbling blocks and offer some solutions

Human footprint

A positive look at how humans have transformed life on earth

Just hot air?

Buzzwords of the 21st Century examined...

While stocks last...

Dig It! goes shopping to check out what's happening to the earth's superstore

Take stock with stats

See the numbers and how much more we need to do...

Competing demands for the law

Is current legislation working or creating more problems?

PLUS: The importance of consumers 'closing the loop' and 'buying recycled' and popular myths and consumer survey results discussed



Human footprint in the limelight

To balance the doom and gloom about the impact of man's ecological footprint on earth, **Dig It!** reviews the history books with a positive look at how modern man has transformed life on earth in the last century.



Despite what your tired head may tell you after a late-night, humans stand apart from all other species by their sophisticated level of intelligence and skills.

One of the youngest inhabitants on earth; present for only 2.55 million of the earth's 4.55 billion years' existence, our ability to make use of the earth's resources has enabled us to achieve some awe-inspiring feats during this relatively short time.

Traditionally a hunter-gatherer species focused on getting the basics such as food and shelter, our creativity and curiosity have led us to discoveries that have vastly improved our quality of life, and changed it beyond recognition.

We have amassed a wealth of knowledge and developed our skills in industry, engineering, manufacturing, energy production, science, medicine and technology. Able to treat and prevent a vast range of health problems and enjoy life well into old age, the average life-expectancy has increased to 66 years, which, compared to our ancestors

is astounding — Stone-age man lived only until around 33, and Bronze-age man 18.

Food is in excellent supply in the developed world: sophisticated methods of producing and storing large quantities of food mean we are capable of nourishing everyone. We are able to grow vegetables and fruits out of season, and control crop diseases that in the past would have inevitably resulted in famine.

Over the past few decades, we've developed technology to such an extent that we can now communicate efficiently across vast distances in real-time, allowing the simultaneous exchange of information and ideas so vital to development.

Education has become more widely available. Learning is no longer confined to the classroom, nor to an elite few via teachers and books, it is now possible to carry our collective knowledge in hand-held devices and access it at the touch of a button.

"An impressive range of interactive systems allow us to be entertained and inspired at work, rest and play; offering us new ways of exploring and developing our knowledge and skills in 'virtual' worlds"

Methods of transportation now include high-speed vehicles of all types. Distances once considered too far to travel in a day now take a matter of minutes. Countries divided by oceans are now reached in a few hours.

We can now generate the energy needed to build communities and services, and trade with others across the world; producing, buying and selling goods which create a healthy economy capable of sustaining life.

Our footprint is a mark of ingenuity, not a symbol of our destructive impact on the earth and its resources. ■

Just a lot of hot air?

With Climate Change and Global Warming the latest buzzwords of the 21st Century, **Dig It!** examines what they actually mean...



The earth's climate has already changed dramatically several times since the dawn of time, so why is a naturally occurring phenomena making headline news in the 21st Century? Besides, wouldn't it be rather nice if we were able to enjoy longer and hotter summers in the UK?

The planet ecosystem is like a finely-tuned machine, capable of sustaining life by a series of complex, interconnected biological, chemical and physical processes. Despite many years of disagreement and uncertainty, scientists now agree (with the odd exception) that this balance has been upset by human activity — the negative impact of our 'footprint' — with the result that the climate is changing at an unprecedented rate, putting the earth and all its inhabitants at serious risk.

The main problem lies with the excess production of two greenhouse gases - carbon dioxide (CO₂) and methane (CH₄). Already present in the earth's atmosphere, these greenhouse gases provide a vital function: they keep the earth warm by absorbing heat and

preventing it from escaping. Just consider the moon: actually the same distance from the sun as the earth, it is incapable of sustaining life because it doesn't have an atmosphere. Without this 'blanket' of greenhouses gases, the moon's surface temperature is a chilly -18°C, compared to the earth's 14°C.

Certain forms of human activity have resulted in high amounts of these gases being released into the atmosphere and there has been an overall increase in the earth's surface temperature. This global warming affects normal weather patterns, causing water levels to rise as warm water expands and icebergs melt, leading to extreme weather conditions such as flooding and drought.

The predicted lack of water will not simply mean having to take a shower instead of a bath; it will mean failed harvests, hunger and not enough drinking water in those areas affected. "Scientists believe that by 2025, two-thirds of the world's people are likely to be living in areas of acute water stress"

(www.climatechallenge.gov.uk), while others will face high rainfall; potentially causing serious damage to life and livelihoods.

"The two main culprits for high CO₂ emissions are energy production from the burning of fossil fuels for energy and from deforestation. For methane, strange though it may seem, it's cattle and rice paddy fields"

Basically, every time someone flicks on a switch — be that a toaster, kettle, car ignition, PC monitor or industrial machine — or produces and consumes something, animal, vegetable or mineral, they're contributing to global warming and, therefore, climate change. ■

While stocks last...

Climate change and global warming are not the only things that could end up costing the earth; our lifestyle comes at a price too. With the world population set to rise to '9 billion by the year 2050' (UNPD), Dig It! goes window-shopping to check out what's happening to the earth's superstore.



All living things exploit their environment in order to survive. Taking resources from the earth and using them as nourishment or shelter is part of the grand design. Remember those primary school projects about food chains and the cycle of life? Owl eats shrew, shrew eats centipede, centipede eats woodlouse, and woodlouse eats oak trees — all of which go back to nourish the earth when life is over. Life is sustained and nature kept in balance by this cyclical process of renewal. So what's gone wrong?

Until fairly recently, Mother Nature managed to keep up with demand, but man's quest for more and more products and services — all of which originate in some form or another from the earth's resources — is taking its toll, damaging the environment and all its inhabitants. Food production, packaging and transport account for nearly a third of our negative impact on the climate. (DFES Sustainable Schools).

Since 1900, the human population has gone from 1.9 billion to 6 billion and the numbers are growing. According to the BBC, "the human race is consuming the earth's resources at a rate that is 20% faster than it can replenish itself, with the result that we would need 1.2 earths to sustain this lifestyle". The World Wildlife Fund says this is a conservative estimate and puts it at three planets.

"It sounds melodramatic, but it isn't. You don't have to look far to see our huge eco-footprint — it is all too visible in the heaps of rubbish we produce daily, not to mention the polluted waters, the smog-filled air and the creeping deserts of infertile land"

In the UK, we are currently producing around 420 million tonnes every year of what we call rubbish — solid waste equivalent to the weight of five cars per person per year — yet only 11% is recycled (www.recycle-more.co.uk).

Landfill can be used to generate electricity, but in the current climate (literally speaking) landfill is not acceptable for all types of waste. Despite strict regulations to limit the pollutant effects of landfill, it must become a last resort.

Our appetite for consuming and producing things seems insatiable. Yet, within six months, 90% of the consumable goods we buy in the UK become waste (DFES Sustainable Schools), and a third of food grown for human consumption is thrown away (Sustainable Development commission, Fare Share). Yet, in the winter, kiwi fruit is frequently imported to the UK from New Zealand — using five litres of kerosene for every kilo of

fruit flown.

Around 26,000 kilometres of rainforest are being cut down every year (more than half the size of Switzerland) taking with it not only the homes and habitats of other creatures, but a treasure-trove of flora and fauna on which complex life and medicinal science depends. 137 different species become extinct every day.

The good news is that some governments are now in agreement about the urgent need for action to reduce greenhouse gas emissions and the size of our ecological footprint. Working together, alongside an increasing number of individuals and not-for-profit organisations, thousands of small and large-scale projects have been set up, with both public and private funding, to combat the problem by promoting sustainable living: reducing, reusing and recycling as many products and services as possible, and using less energy.

The bad news is that the message is not getting through to everyone: we're not doing enough, fast enough — and no-one is sure why. ■

Competing demands for the law

At first glance, legislation would seem an ideal way to limit the damaging effects of pollution and waste, yet opinions differ as to its effectiveness and some people feel it can cause more problems than it solves. **Dig It!** investigates why.

Using laws to force individuals and businesses to protect the environment is nothing new. In 1863, the first modern air pollution legislation, the Alkali Act, was introduced, resulting in the safer disposal of hazardous waste from chemical processing plants called Alkali works. Created in response to concerns about the health of people living close-by, the noxious solids and gases were a by-product of a chemical process for making soda ash, used for making glass, textiles and paper.

The terms used for describing the effects may not have been terribly scientific, but the effects were felt by all who lived in the vicinity. These notes were presented during a law suit against one Alkali works in 1839: "The gas from these manufactories is of such a deleterious nature as to blight everything within its influence, and is alike baneful to health and property. The herbage of the fields in their vicinity is scorched, the gardens neither yield fruit nor vegetables; many flourishing trees have lately become rotten naked sticks. Cattle and poultry droop and pine away. It tarnishes the furniture in our houses, and when we are exposed to it, which is of frequent occurrence, we are afflicted with coughs and pains in the head ... all of which we attribute to the Alkali works."

"As the industrial revolution stepped up a pace, further legislation was created in an attempt to stem the tide of damage to land, air and water from the increasing number of factories and chemical processing works that appeared during this period of rapid development"

Today's environmental laws now cover just about any and every eventuality in the modern world; from noise pollution to greenhouse gases, and all types of household and commercial waste. Despite some clear UK successes (there has been a 75% reduction in 1990 sulphur dioxide emissions and a 65% reduction in water pollution), there is increasing controversy surrounding the value and role of law in this area.

Business owners feel that the environmental laws have become so complex that they can't cope with the burden of all the paperwork: wasting time and money trying to prove they are doing



the right thing which, for many, could lead to lower profits. Some home-owners are incensed that many local councils will now only collect a set amount of household rubbish per week — and can fine people who fail to comply — despite the argument that this 'encourages' people to recycle more. Nevertheless, we have to ask ourselves how aware the general public is that local councils themselves will be fined if they exceed the waste limit for their area!

The nightmare of addressing these conflicting demands — finding a balance between meeting the needs of the planet and those of the economy, and of the individual — often falls on the Environment Agency (EA) and local councils.

Nevertheless, environmental campaigners and local communities do not believe that these measures are enough and want to see far tougher controls on all hazardous activities and levels of waste production to provide maximum protection against damage to the environment and human health. They want to see a much thicker 'stick' on the tails of those who risk the health of individuals and the environment. The question remains: how can this be done fairly?

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Competing demands for the law (continued)...

Stop press...

Controversial carbon clampdown

There has been a mixed response in the UK to a proposal, by a chief scientist and an environmental minister, to introduce a form of energy rationing.

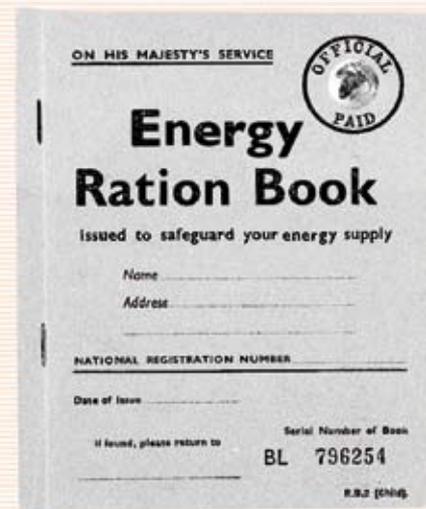
Not yet law, and perhaps unlikely to become so, many people feel that the scheme would be unworkable or unfair. The idea is that each person would be allocated a 'carbon allowance': a fixed amount of energy use per year to heat their homes, run their cars, travel by plane, etc. Anyone wishing to use more than their quota, perhaps because they travel or drive more often, would have to buy extra carbon allowances from those who use less.

He who buys pays

France has quietly introduced a new green tax on white goods and electronic equipment. Resulting in an average price increase of around £1 on a washing machine or fridge, this money will be used to provide or improve recycling and disposal facilities.

Energy alternatives

Toyota brings new meaning to conserving your energy for a good night out, by creating a dance floor that generates electricity by the movement created when people dance on it.

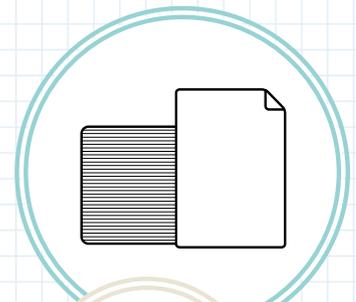


Take stock with stats

Despite a growing number of green collection schemes and centres springing up all over the UK, we're still leaving a trail of mess behind us rather than reusing or recycling products or disposing of our waste safely. Try these numbers for size to see how much more we need to do to make sure we can see the woods and the trees in the future...

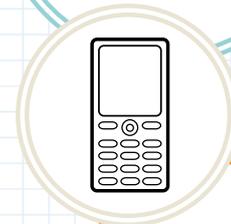
Stat 1

In 2003, only 1.1 million tonnes of household paper was collected in the UK for recycling but five million tonnes went to landfill. (www.wasteonline.org.uk)



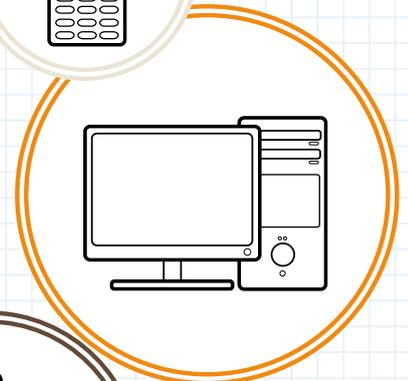
Stat 2

Despite mobile phones being easily refurbished and sold on to developing countries, there are over 20 million discarded mobiles in the UK alone. (www.wasteonline.org.uk)



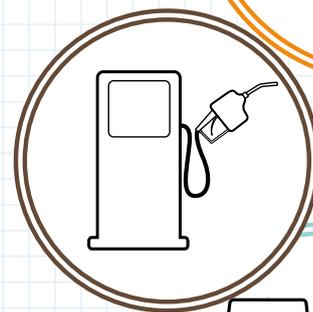
Stat 3

Since 1999 the market for refurbished computers has increased by 500%, but still less than 20% of all discarded UK computers are recycled. Carnegie Mellon University estimated that by the year 2005, 55 million PCs would end up on landfill sites in the US and five million in the UK. (www.wasteonline.org.uk)



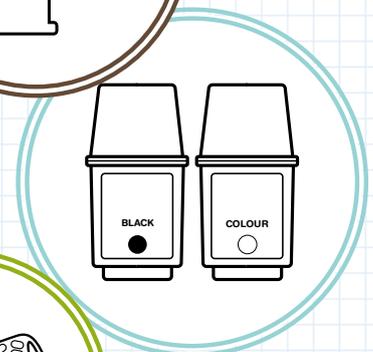
Stat 4

Waste car oil from nearly three million car oil changes in Britain is not collected. If collected properly, this could meet the annual energy needs of 1.5 million people. One litre of waste oil is sufficient to contaminate one million litres of water and oil poured on to the ground will affect soil fertility. (www.wasteonline.org.uk)



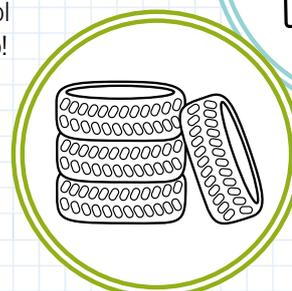
Stat 5

In 2003, 30-40% of the 40 million inkjet and toner cartridges sold in the UK were remanufactured or recycled, with 12-14,000 tonnes ending up in landfill. (www.wasteonline.org.uk)



Stat 6

Amazingly, recycling aluminium requires only 5% of the energy it takes to make new aluminium and produces only 5% of the CO2 emissions. Despite this we still only recycle around 50% of them. Whether it be at home, school or work – remember to keep recycling those cans, they all add up! (www.alupro.org.uk)



continued >>

Stat 7

Glass can be infinitely recycled (www.wasteonline.org.uk), but only if it's sorted for recycling. In one year an average family will use 330 glass jars and bottles, but will recycle less than a third of them. Recycling just one glass bottle saves enough energy to power a 25W energy saving lightbulb for 4 hours.

Stat 8

The average household bin contains about 38% organic content, all of which can be made into rich compost to feed the earth. So why in 2003-2004, did 72% of municipal waste in England still end up in landfill sites?

Stat 9

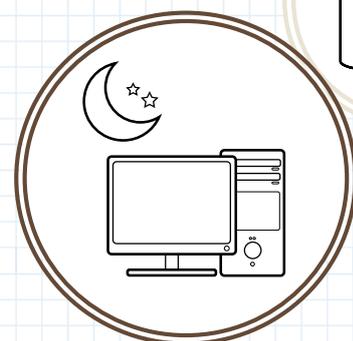
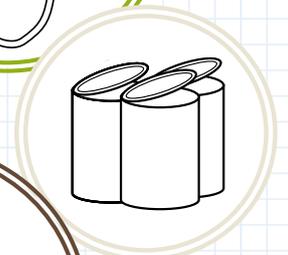
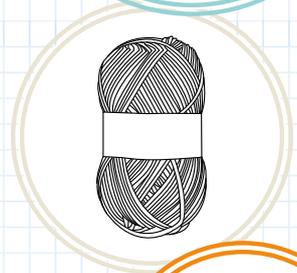
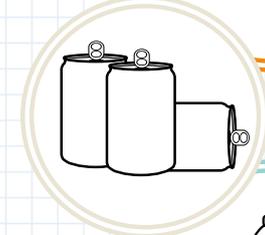
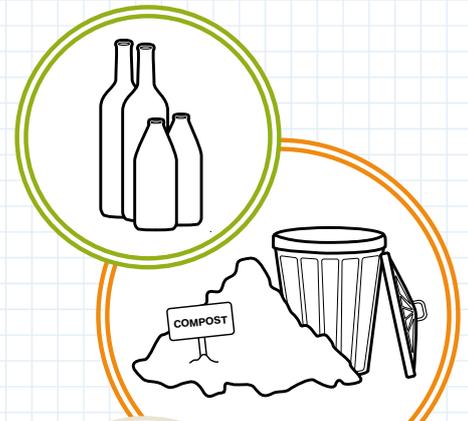
In 2001 the UK consumed five billion aluminium drinks cans, of which 42% were recycled. Although a great improvement on the 2% recycled in 1989, there were still a massive three billion cans that were landfilled.

Stat 10

We produce and use 20 times more plastic today than we did 50 years ago: from around five million tonnes in the 1950s to nearly 100 million tonnes today. One tonne of plastics is equivalent to 20,000 two litre drinks bottles or 120,000 carrier bags. An estimated 56% of all plastics waste is used packaging, three-quarters of which is from households. (www.wasteonline.org.uk)

Energy saving stats

- » If everyone in the UK bought one reclaimed woollen garment each year, it would save an average of 371 million gallons of water (the average UK reservoir holds about 300 million gallons) and 480 tonnes of chemical dyestuffs. (Evergreen)
- » If everyone boiled only the water they needed to make a cup of tea instead of filling the kettle every time, we could save enough electricity to run practically all the street lighting in the country. (DEFRA)
- » Recycling two glass bottles saves enough energy to boil water for five cups of tea. (www.wasteonline.org.uk)
- » An ordinary shower uses 40% of the hot water needed for a bath. (EST)
- » Recycling seven steel cans saves enough energy to power a 60-watt light bulb for 26 hours. (www.wasteonline.org.uk)
- » According to the Carbon Trust, a typical PC and monitor left on for 24 hours a day uses around £45 of energy per year. Turned it off at night and weekends and use other energy management techniques, and it will only use around £10 of energy per year. (Energy Saving Trust)
- » Recycling just one glass bottle saves enough energy to power a computer for 25 minutes. (www.britglass.co.uk)
- » One energy-saving light bulb takes around £100 off your electricity bill over the lifetime of the bulb - and lasts up to 12 times longer than an ordinary one, therefore reducing greenhouse emissions and saving resources. (www.energysavingtrust.org.uk)
- » Buying recycled paper saves trees. How many depends on the type of recycled paper and the percentage of post-consumer content (i.e. the proportion of 'second-hand' paper used to make the 'new' paper). One example is that 12 trees are saved when one tonne of 50% post-consumer content copier paper is made. (www.conservatree.com)
- » For every tonne of plastic carrier bags (polythene) we recycle, we are saving around 1.8 tonnes of oil. (www.wasteonline.org.uk) ■



Surveying sustainable solutions

Despite numerous national campaigns to get people to 'go green', success has been limited and the majority of people are still not 'doing their bit'. So, what's the hold-up? **Dig It!** gathers together the results of some surveys to locate the stumbling blocks and offer some solutions.

The myths according to a survey carried out by www.climatechallenge.gov.uk

- » Human activity doesn't cause climate change
- » It's too late to make a difference
- » There's no point in me taking action
- » Tackling climate change means making big sacrifices
- » The climate is always changing
- » Climate change has no basis in science
- » Climate change will make life more comfortable in the UK

Selling-in the idea of sustainable living is not a science, it is an art. Marketing people know only too well that there is no magic formula for getting people to alter their habits, buy a new product or make the 'right' choice, yet everyday they manage to influence people's behaviour and opinions in a big way through advertising and the media. How do they do it?

Whatever your message, it must be communicated in simple terms. The Department for Environment, Food and Rural Affairs (Defra) found out from a recent survey, 'Today's Challenge', that the majority of people don't even understand the terminology. Not only have words like 'sustainability' left people confused, creating some potentially damaging myths, but it seems to have also left people feeling powerless to do anything about the problems. When asked what could help improve climate change, only 12% felt they themselves could help a lot – which is the opposite of current thinking; that we all have a big

part to play in making things better.

Good communication starts with knowing your audience. Influencing behaviour means finding out what makes people tick. After all, we are all different. Although we can't cater for every individual on the planet, we can group them by general character traits and target our messages to suit their circumstances, needs and wants.

continued »



Surveying sustainable solutions (continued)...

Green Engage (www.green-engage.co.uk), an environmental consultancy service, took a straightforward approach and asked people, anonymously, why they aren't doing more and what should be done to support them to take action. The results of their survey, published in their report 'Painting the Town Green', reveal the types of barriers we have yet to negotiate: time, money, ignorance and apathy.

Just making people aware of the issues doesn't always lead to action; solutions have to take account of human wants and needs in the 21st Century. An international research project found that "whilst 90 per cent of people know that drinks cans can be recycled, only 50 per cent say they've actually ever done it." (NOP World Research – WRAP, 2004). Despite knowing that our over-reliance on cars is one of the greatest contributors to global warming (transport accounts for a whopping 35% of our total energy consumption), in 2004, the average UK citizen made 625 journeys by car and only 15 by bicycle. Between 1991 and 2004, the number of pupils walking or cycling to school actually fell from 53% to 47% (Department for Transport).

The reality is that people have different goals and different lifestyles. Some are driven by fame and fortune; the latest flash car or designer clothes, while others get their kicks from being with family and friends; walking in the countryside or watching a good film. It's not about making a judgement call; it's about recognising difference and using it to advantage. Some schemes should concentrate on motivating people using financial incentives: do this and you'll save money, others, social ones: awards that bring status or recognition within the community.

The Green Engage Survey

When asked, why don't you 3R / reduce your energy use?

- 57%** said "I don't have time"
- 38%** said "I don't know what to do"
- 32%** said "Others around me aren't doing anything"
- 23%** said "Action by me won't make much difference"
- 13%** said "I've got bigger problems to deal with"

When asked, would any of the following things encourage you to do more for the environment?

- 82%** more facilities to help greener lifestyles such as recycling bins
- 81%** more advice from experts on what to do
- 74%** more info on environmental threats and problems
- 61%** more encouragement in newspapers and on TV
- 53%** regulations that mean others have to do their bit too
- 44%** financial incentives
- 26%** it becoming more trendy and less nerdy to go green

"We need to attack the problems from all angles; as well as motivating individuals and groups to get involved, we need to provide easy-to-use solutions – ones that suit people's pocket; their way of life and their personalities. The Green Exchange calls it 'green-living on a plate'; the equivalent of a quality take-away for busy people"

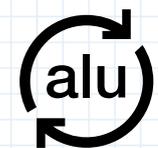
Despite the power of popular culture, we have yet to tap into the huge potential of using pop stars and celebrities to endorse a greener way of life. There are no rap songs; no soaps or films portraying green living as the cool thing to do. In fact, when Green Engage asked people to suggest famous people they believed cared about climate change, 68% could not suggest any names whatsoever.

Image is everything; not only is there a lack of role-models leading the population towards a healthier planet, but green issues are still not really seen as 'cool'. Add this to the mistaken belief that sustainable living means big sacrifices and it's obvious there is more to do. ■

Consumers needed to close loop

Many consumers are not aware of the importance of ‘closing the loop’: buying products made from recycled materials. Essential to the money-go-round, ‘buying recycled’ creates a demand for collected material, thus encouraging the development of more recycling centres and facilities, which in turn creates new business and more jobs. It’s all about supply and demand in the economy.

Although these symbols are becoming more widespread, many people don’t automatically know which ones mean the material can be recycled and which have been made from recycled materials. Take a look...

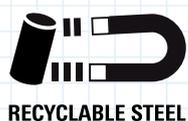


Recyclable aluminium



RECY symbol

Made from recyclable materials



Recyclable steel



European Eco-label

This ‘flower’ symbol is found on products that meet a set of strict criteria showing that all aspects of its production and final disposal are environmentally friendly



The Mobius loop

Item is recyclable



The Mobius loop

Made from x percentage of recycled materials



Organic material that will degrade

So you can put it in the compost or in a compost collection bin



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