Packaging in Perspective

Prepared by the Advisory Committee on Packaging

Supported by INCPEN, the Packaging Federation and Valpak

This publication has been produced to provide facts about the much discussed subject of packaging recovery and recycling. It aims to provide the public and others with an outline of what the UK has achieved and what is being done.

It is not generally recognised that businesses have already achieved a great deal and continue to do much to:

- design more effective packaging
- minimise environmental impact
- increase the amount of used packaging that is recovered and recycled.

Key facts

- 10 million tonnes of packaging are used each year to protect all the goods purchased by businesses and consumers.
- GDP has risen by 28% in the last 10 years. The amount of packaging has risen by only 8%.
- Packaging is less than 3% of all solid waste and 60% of it is recovered and recycled each year.
- £1.5 billion has been spent by businesses in the last 10 years to double the amount recovered and recycled.
- Government has set industry targets up to 2012 to increase recycling.

Contents

ACP Communications Task Force

ACP Chair
John Turner

BERR
Peter Askew

BPI
Andrew Green

Defra
Ian Atkinson

INCPEN
Jane Bickerstaffe

Packaging Federation
Dick Searle

Valpak
Steve Gough

WRAP
Andy Dawe

Foreword

John Turner, Chair, Advisory Committee on Packaging

" The ACP set up a Communications Task Force to look at how to bring a better balance to the debate about packaging.

Packaging receives a lot of attention which is out of proportion to its scale in the overall waste stream and comment is often weighted heavily against this important industry. Packaging is necessary to protect products in the modern world.

The Task Force concluded that many of the facts about what has been achieved and what is being done to reduce the environmental impact of packaging were not generally known. This publication is aimed at presenting these facts to bring more balance into the debate.

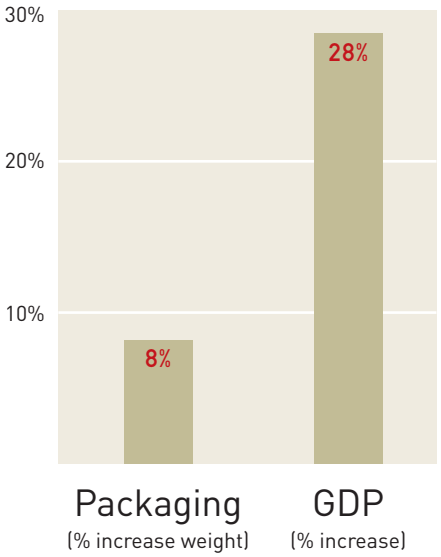
I am indebted to the members of the Task Force for the time spent on preparing this publication. "

Perceptions and Reality

Perception: Packaging is a major environmental problem

Reality: Each household's annual purchases of products weigh nearly **3 tonnes, and require 110 GigaJoules** of energy to produce. To avoid wastage of these products and the energy used to produce them, they need to be protected so they safely survive the stresses and strains of being transported from farm and factory through to the shops and then to consumers. **Less than 200 kg** of packaging does this job and the energy used to make the packaging is just **7 GigaJoules** – or one fifteenth of the energy used to produce the goods.

Food wastage in developing countries can be as high as 50%; thanks mainly to packaging **only 3%** goes to waste before it reaches the shops in the UK.

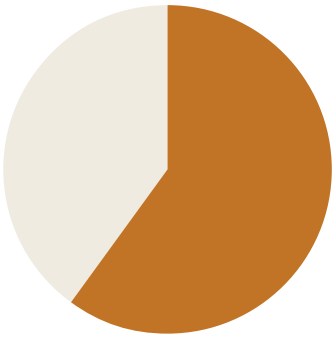


Perception: There is too much packaging

Reality: Packaging is a cost to industry so there is a commercial incentive to keep it to a minimum. The amount of packaging on the vast majority of individual products has gone down over the last twenty years but consumers now buy far more products so the total amount of packaging used has gone up, though at a much slower rate than household expenditure or GDP. Between **1998 and 2007 packaging grew by less than 8%** (8.7 million tonnes to 9.4 million tonnes, excluding wood) but **GDP rose by 28%.**

Perception: Nothing is being done to encourage packaging minimisation

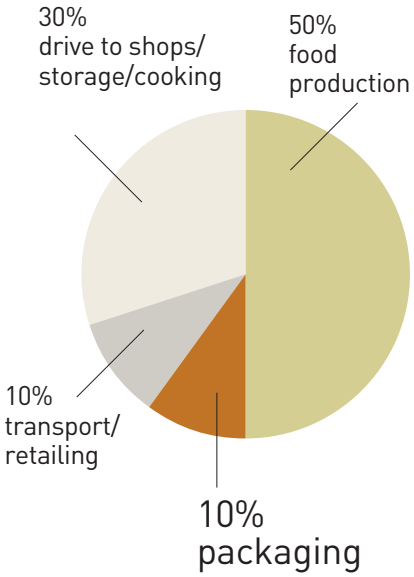
Reality: There are European and UK laws that require manufacturers to help fund recycling of used packaging and to use the minimum amount of packaging with financial penalties for non compliance. Government, retailers and manufacturers, and industry associations are working with Councils to ensure these laws are applied and enforced effectively.



60%
packaging
recycled

Perception: More packaging should be recycled

Reality: **Over 60% of all packaging** – from industry, commerce and households – is recovered and recycled. **£1.5 billion has been paid** by manufacturers and retailers in the last ten years to increase the recovery and recycling of packaging from 3 million tonnes to 6 million tonnes a year. Government and industry are working together to increase this further, with the help of consumers.



Packaging's contribution to society

Without packaging:

- Consumers could not live the way they do today. Worldwide, more people now live in urban than rural environments. Food and other goods are therefore made at some distance from where they are consumed – packaging is needed to ensure they survive the journey from production to consumption.
- No liquids, gels or powders would be available.
- Fruit and vegetables would not be available out of season.
- Consumers would have to grow their own food or shop daily for it.
- The environmental damage from broken goods and spoiled food would be enormous.
- Food waste has at least ten times the environmental impact of packaging waste and that's before taking account of the impact of methane from decayed food.
- **Of the total energy used in the food chain, 50% is used in food production, 10% on transport to the shops and retailing, 10% to make the packaging and the remaining 30% is used by shoppers to drive to the shops and store and cook food.**

Fresh for 14 days

Grapes in-store wastage
DOWN by 20%

New potatoes
in-store wastage
DOWN to <1%

Packaging contains, protects, preserves, promotes, carries information – and reduces costs

- Food and other goods have to be protected and contained on their journey from farm or factory via warehouses and shops until they arrive at consumers' homes.
- Roughly 10 million tonnes of packaging are used each year, of which 4.7 million tonnes is the sales packaging that protects the 100 billion items bought each year by UK households.
- In addition to containing and protecting goods, packaging has to perform a wide range of other roles including carrying an increasing amount of information, much of which is required by law; being easy to open and re-close; tamper-evident and child resistant and dispensing products.
- An unwrapped cucumber loses moisture and becomes dull and unsaleable within 3 days. Just 1.5 grams of wrapping keeps it fresh for 14 days. Selling grapes in trays or bags has reduced in-store waste of grapes by 20%. In-store wastage of new potatoes reduced from 3% when sold loose to less than 1% after specially designed bags were introduced.
- Even fruit and vegetables that are sold "loose" need packaging to get from the farm to the shop and a bag of some sort to get them home.

Packaging Waste

- Packaging from all sources (industrial, commercial and household) is **less than 3% of waste sent to landfill**, measured by weight or volume.
- **60% of packaging from industry and households is recovered and recycled.**
- Each household generates **23 kg of waste each week** (recyclables and residual waste) of which **4 kg (18%) is packaging**.
- Household waste is 9% of all solid waste generated. **Household packaging waste is therefore less than 2% of all solid waste**.
- Dustbins might look full of packaging because empty bottles, pots, tubs and trays are full of air and take up a lot of space but these containers are necessary to enable food and other goods to be safely delivered. Most packaging is essential and the majority of it can be recycled. Even if it isn't recycled, it will be squashed in landfill to a tiny fraction of its original volume.

Packaging recovered and recycled

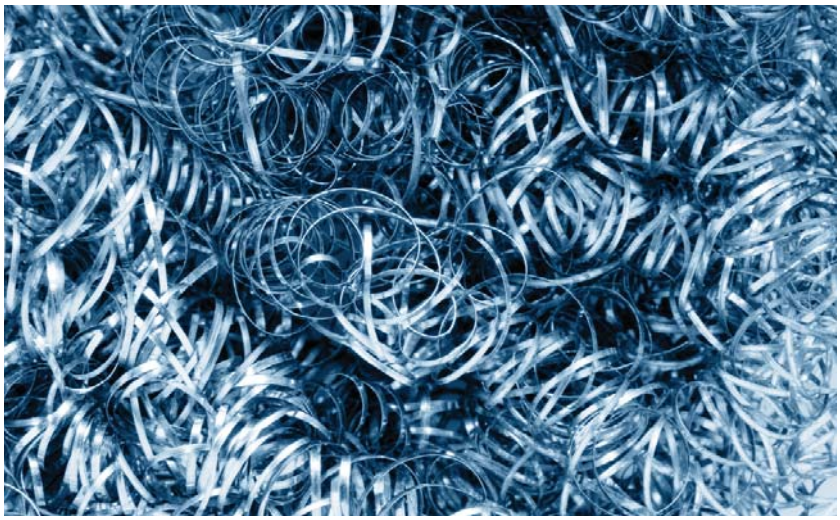
- Most local authorities provide collection schemes for recycling the majority of used household packaging – typically bring-banks and/or kerbside collection for glass bottles and jars, cardboard, food and drinks cans and plastics bottles. Some collect other things so it is important to check locally what each local authority wants.
- Some packaging can be left in with the mixed waste. In an increasing number of areas energy will be recovered from the packaging in energy-from-waste plants.

The UK compared with other European countries

- The UK uses less packaging per person than most other large EU countries – less than Denmark, France, Germany, Ireland, Italy, Netherlands, Spain.
- The UK recycles more packaging waste than many other EU countries – more than Finland, France, Greece, Italy, Portugal, Spain, Sweden.

Challenges for industry

- Increase efforts to design product and packaging systems that minimise the use of materials, energy and water and minimise the environmental impact throughout the product lifecycle.
- Provide food and other goods in a wide range of portion sizes to suit the needs of different lifestyles and preferences.
- Design all packaging to be resource-efficient.
  - Design for recycling if an infrastructure is in place to collect, sort and clean the packaging in a way that will yield a net gain in resources.
  - Recycling does not currently make sense for packaging made from thin layers of mixed materials or plastic film because it requires more resources to collect and clean it than can be recovered. This sort of packaging has environmental advantages by allowing more product to be packaged onto one delivery vehicle which means less traffic and lower fuel use. At the end of its life energy can be recovered from it.
- Provide clear, reliable information to consumers and other stakeholders
- Continue to work together with local authorities and compliance schemes to fund increased availability of collection facilities.



Challenges for consumers

- Choose products in a type of packaging to suit requirements eg a bag of apples to make a pie, a "loose" single apple for lunch, a pack of four in a wrapped tray for the household fruit bowl.
- Support local recycling schemes.
- Think about:
  - Could the product have got to the shop without packaging?
  - Could it have been transported home without packaging?
  - Will it keep in good condition for as long as it needs to be stored?
- If a product seems to be excessively packaged:
  - Contact the retailer or manufacturer
  - Call or go on-line to Consumer Direct – 08454 04 05 06 www.consumerdirect.gov.uk
  - Call or go on-line to www.recycle-more.co.uk

Challenges for government

- Ensure that policy on packaging enables businesses to respond to the varied needs of society with minimal environmental impact.
- Examine the options for increasing opportunities for consumers to recycle more.
- Provide training for local authorities to help all of them operate packaging collection schemes to the best practice standards.
- Set stretching targets for all stakeholders to ensure continued progress towards recycling more packaging.
- Encourage the development of a society that accepts recovery and recycling of waste as an everyday activity.
- Fund research into best practice for design, manufacture, distribution and recovery of packaging.
- Encourage collection and sorting methods to deliver high quality recyclables.

Facts and Figures

Amount of Packaging Used

The amount of packaging used in the UK has increased between 1998 and 2007 by less than 8% (8.7 million tonnes to 9.4 million tonnes – excluding wood).

In the same period, GDP rose by 28% (source: National Statistics).

Population and economic activity has increased and therefore more products have been bought by consumers. Despite this, the total amount of packaging has increased at a much slower rate because companies have reduced the amount of material in each pack.

UK Packaging Waste Generated

Thousand tonnes	1998	2001	2005	2006	2007
glass	2,200	2,200	2,500	2,600	2,650
plastics	1,700	1,679	1,901	2,080	2,121
metals (steel) (aluminium)	844	970	827	825 (683) (143)	823 (679) (144)
paper and board	4,000	3,855	3,726	3,763	3,801
Total (ex wood and other)	**8,744**	**8,604**	**8,954**	**9,268**	**9,395**
Wood	1,300	670	1,404	1,180	1,192
Other			22	23	23
TOTAL	**10,044**	**9,274**	**10,380**	**10,471**	**10,610**

Source: DEFRA (2007 figures from Consultation on recycling targets for packaging 2008 and thereafter, October 2007)

The above table shows packaging used for industrial, commercial and household products. The Government's Waste Strategy 2007 produced an estimate of the split between commercial and industrial, and household sources. For 2005 data, it showed that **44% of packaging ends up at households and 56% in industrial and commercial waste streams.**

Packaging arising in UK Household and Commercial/ Industrial waste streams

2005	total	household stream		Commercial and industrial stream	
	thousand tonnes	thousand tonnes	percent	thousand tonnes	percent
paper	3,726	931	25%	2,794	75%
glass	2,500	1,875	75%	625	25%
aluminium	142	134	95%	7	5%
steel	686	480	70%	206	30%
plastics	1,901	1,217	64%	685	36%
wood	1,404	0	0	1,404	100%
other	22	22	100%	0	0
Total	**10,380**	**4,660**	**44%**	**5,720**	**56%**

Source: Waste Strategy 2007

If this split still applies, (which is likely) this means that households generated 4.7 million tonnes of used packaging in 2007.[1]

The role of packaging in protecting products and preventing waste

The average UK household is 2.3 people, 0.4 cats and 0.3 dogs. In a year the average household buys over 4,300 items.

This means that the UK's 26 million households buy over 100 billion products each year of which 66% are food and drink.

Product types purchased by average household

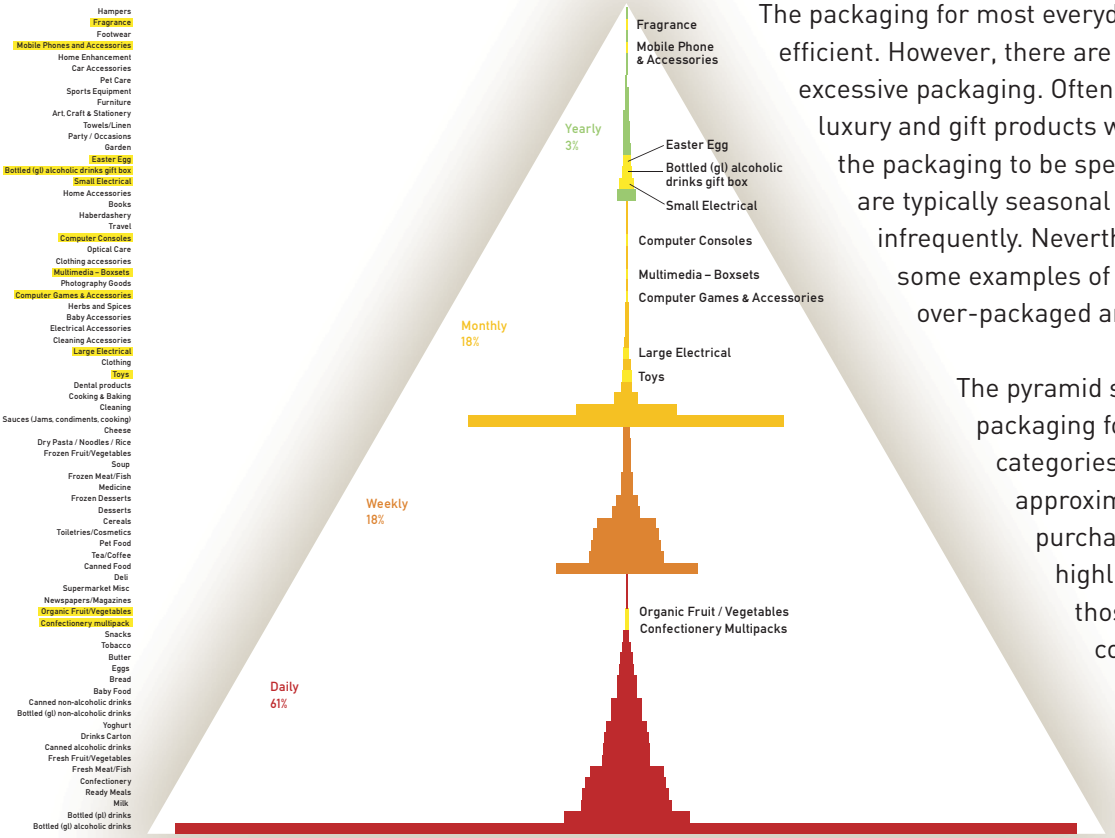
type of product	number of products purchased (percent)
food and drink	66
education, leisure, transport	19
clothing and personal care	11
home and interior	4

(Source: Dr J M Kooijman for INCPEN, derived from UK Family Expenditure Survey)

1 A figure of 5.9 million tonnes is sometimes used but this is derived from analysis of packaging waste (Source: Government agency WRAP – the Waste and Resources Action Programme, based on local authority waste composition studies of household and civic amenity waste and waste data flow information).

Note that the WRAP estimate will include moisture, residual product and contaminants. Level of contaminants varies per material. In 1991 a major survey of contamination levels carried out by Government agency, AEA Technology concluded that on average across all waste packaging materials, 14% was moisture and contamination. Applying this to the estimate of 5.9 million tonnes gives 5.1 million tonnes of actual material.

Packaging Pyramid



The packaging for most everyday items is extremely efficient. However, there are concerns about excessive packaging. Often this is packaging for luxury and gift products where the giver wants the packaging to be special and these products are typically seasonal or purchased infrequently. Nevertheless, there are also some examples of products that really are over-packaged and should be improved.

The pyramid shows the amount of packaging for 73 product categories grouped by the approximate frequency of purchase. The items highlighted in yellow are those that are sometimes considered to be excessively packaged. In total these account for less than 3% of all used household packaging.

Actual and perceived excessively packaged products.
Products listed by likely frequency of purchase.

Source: Valpak

Each household's annual purchases weigh nearly 3 tonnes, and require 110 GJ of energy to produce. To avoid wastage of these materials and energy, they need to be protected so they safely survive the stresses and strains of being transported from farm and factory through to the shops and then home. Less than 200 kg of packaging does this job. The energy used to make the packaging is 7 GJ.

Of the total energy used in the food chain, 50% is used in food production, 10% on transport to the shops and retailing, 10% to make the packaging and the remaining 30% used by shoppers to drive to the shops and store and cook food.

As well as making environmental sense, it is in companies' commercial interest to use as little packaging as possible. The following table shows examples of packaging reduction over the years.

Packaging Reduction Examples

	1950s	1960s	1970s	1990s	2000	**2008**	**per cent change**
washing-up liquid bottle 1 litre			120g	67g	50g	43g	64%
soup can 400g	90g		69g	57g	55g	49g	46%
yogurt pot 165g		12g	7g	5g		4g	67%
plastics fizzy drinks bottle 2litre			58g		43g	40g	31%
metal drinks can 330ml		60g		21g	15g	14g	77%
glass beer bottle 275g			450g		325g	176g	61%
glass milk bottle 1 pint	538g		397g	230g		186g	65%

Source: INCPEN

Consumers are usually unaware of the various roles that packaging plays in containing, protecting and preserving products, carrying vital information, enabling easy use and helping them reduce their environmental footprint.

Packaging for food prevents wastage of the significant resources that go into growing, harvesting and transporting it. According to the Government, UK consumers typically waste as much as 30% of the food that they buy. Packaging plays a key role in preventing more waste.

In addition to reducing waste, packaging also provides protection from contamination, which is particularly important for food that is often eaten raw or straight from the pack.

Cucumber

A cucumber is 96% water which it begins to lose as soon as it is picked. After 3 days, it has lost so much water that it becomes dull, limp and unsaleable. Wrapping it in just 1.5 grams of plastic film extends its shelf life to 14 days and it lasts longer at home. (Source; Cucumber Growers Association)

Grapes

Traditionally grapes were sold in loose bunches in an open tray from which the consumer selected and paid by weight at the checkout. Some of the grapes inevitably fell off and would be discarded by the shop. Any that fell on the floor were potentially hazardous if slipped on.

Grapes are now sold either in bags or sealed trays so that the loose ones stay with the bunch and are sold and there's no danger of slipping. This has reduced waste in store typically by over 20%.

Prepared salads

Prepared salads typically contain three or four varieties of washed, cut, ready-to-eat salad leaves in a bag specially designed to contain a modified atmosphere which keeps the leaves fresh and extends their shelf life. Without the bag and its modified atmosphere the edges and stalks would quickly go brown.

If consumers bought individual lettuces to create the same mixture at home, eleven times the amount of salad would be produced at four times the cost and there would be five to ten times more waste.

Modified atmosphere bags make a significant contribution to reducing food waste.

Bananas

Bananas have their own natural packaging: their skins. That makes people think further wrapping in a plastic bag is wasteful and unnecessary.

However, large amounts of bananas over-ripen and are thrown away. WRAP (Waste and Resources Action Programme), a Government Agency, reports that UK consumers throw away 1.6 million bananas a day.

Bunches of identical bananas stored for 7 days loose and in a modified atmosphere bag

Wrapping in a modified atmosphere bag greatly reduces waste because the bag:

- absorbs the ripening substance, ethylene, that bananas give off, extending shelf life by 2-3 days so fewer fruits become waste.
- prevents the ethylene affecting other nearby fruit and vegetables, stopping them ripening too quickly and going to waste.
- prevents shoppers breaking bunches up, which bruises the fruit and which leaves odd bananas that are unsold and get wasted.

Avoiding waste of fruit helps keep costs down. Labels on the bags also help consumers distinguish organic and Fair Trade bananas (sticky labels often become loose).

Potatoes

If potatoes are sold loose, on average 3% are wasted in store because of deterioration on exposure to light – they go green, and put out shoots. New potatoes are particularly prone because they have thin skins. Green potatoes contain glycoalkaloids which may cause food poisoning and which are not destroyed by cooking.

If they are packed in a modified atmosphere plastic bag, their shelf life in store is extended by 3 days.

A survey carried out with a large grower and major supermarket showed that in-store wastage reduced from 3% for potatoes sold loose to under 1% after modified atmosphere bags were introduced.

Wastage of potatoes at home is generally due to greening and sprouting, which is why they should be kept in the dark. WRAP estimates that 5.1 million potatoes are thrown away each day.

As early new potatoes are typically expensive, and air freighted, there are cost and climate change benefits too (fewer replacement deliveries are needed if there is less waste).

Packaging and Carbon

Good packaging is packaging that protects products throughout their journey from farm or factory to the final end user with minimum environmental impact and minimum waste from product and used packaging.

Packaging has to be considered alongside the product and how it will be used. Sometimes it makes sense to use more packaging if, as a result, the overall carbon footprint of the product is reduced.

For example, a 100g serving of chips can be bought in a box (weighing 19 grams) for cooking in a microwave oven or it can be taken from a bag of frozen chips, where the packaging for that serving is much less – just 1.2 grams. However the carbon dioxide emissions from cooking the frozen chips in a regular oven are 10 times higher than the emissions from the microwaved ones. (Note that this is only a partial assessment but it shows that assessing packaging on just one factor is not sufficient. It is important to take account of the materials, water, energy, carbon used at all stages of the life of the product and its packaging.)

Single portion of chips from microwave pack versus bag of oven chips

	microwave chips	oven chips
packaging weight	19g	1.2g
CO_2 emissions from cooking	41g	452g

More packaging but less climate change impact

Source: INCPEN

Packaging Recovery and Recycling

The Packaging and Packaging Waste Directive was adopted in Europe in 1994, and is covered by two UK laws, see page 26. **Over 60% of all packaging – from industry, commerce and households – is currently recovered and recycled. £1.5 billion** has been paid by manufacturers and retailers in the last ten years to increase the recovery and recycling of packaging from 3 million tonnes to over 6 million tonnes.

Packaging Recovery and Recycling

	2006		1998
	sent for recovery and recycling thousand tonnes	recovered and recycled percent	recovered and recycled percent
paper	2,910	77%	47%
glass	1,303	50%	23%
aluminium	47	33%	23%
steel	391	57%	
plastic	456	22%	7%
wood	845	72%	13%
total recycling	5,952	57%	28%
energy recovered	475	5%	
total recovery	**6,427**	**61%**	**33%**

Source: DEFRA (1998 figures provided by UK to European Commission)

Most local authorities provide collection schemes for recycling the majority of used household packaging – typically bring-banks and/or kerbside collection for glass bottles and jars, cardboard, food and drinks cans and plastics bottles. Some collect other items so consumers need to check what their local authority wants.

In order to demonstrate that they have met their obligations to contribute financially to the recovery and recycling of used packaging, companies have to purchase Packaging Recovery Notes (PRNs). Most companies belong to compliance schemes which buy PRNs on behalf of their members.

The country's largest compliance scheme, Valpak, has estimated that **33% of the PRNs issued in 2006 contributed to recovery and recycling of household packaging.**

Household Packaging recycled

2006	Total PRNs thousand tonnes	Household thousand tonnes	Household percent
glass	1,440	1,160	81%
aluminium	45	23	50%
steel	370	100	27%
plastic	460	150	33%
paper	2,785	225	8%
total	**5,100**	**1,658**	**33%**

Source: Valpak

Used Packaging in the context of all waste

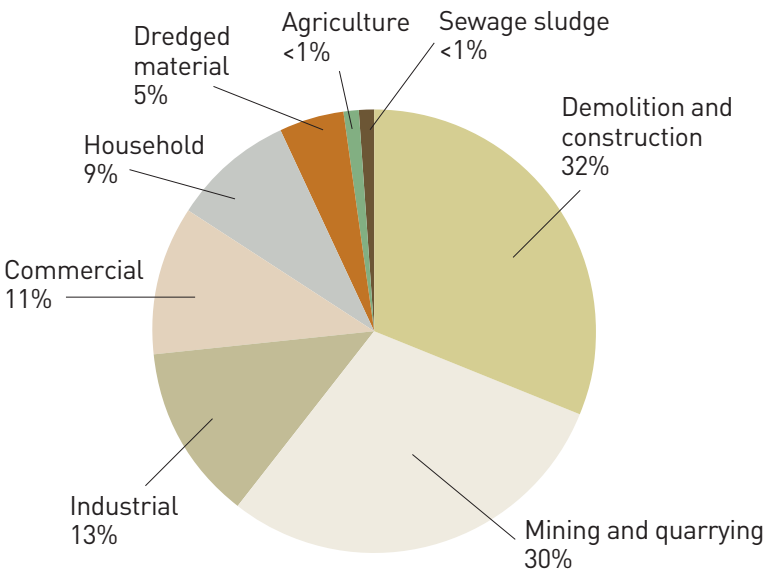
Data on all waste should be used with caution. It is not collected routinely or on a UK basis. According to DEFRA, waste arisings in England in 2006/2007 were 285 million tonnes per annum. 90% of this waste is non-municipal, roughly a third from construction and demolition, a third from mining and quarrying activities[2] and a quarter from commercial and industrial sectors.

Total municipal waste in 2006/7 in England was 29 million tonnes – of which 89% (26 million tonnes came from household sources).

Grossed up by population (England 49 million; UK 58.7 million) household waste generated throughout the UK is 31 million tonnes. In rounded numbers, **household packaging is 5 million tonnes which equates to 16% of household waste.**

2 Not classified as a controlled waste under the Environment Protection Act (Controlled Wastes) 1992

Annual waste arisings England



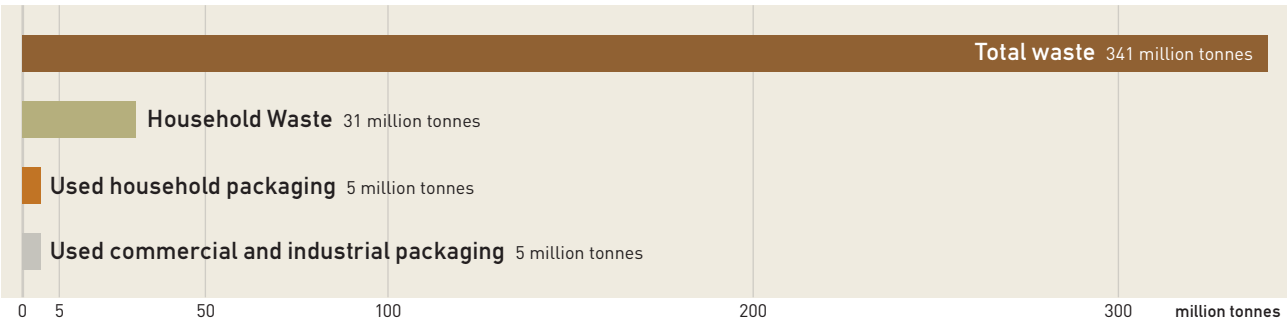
Note that all these figures are estimated so it is probably fair to say that household packaging accounts for somewhere between 15% and 20% of household waste – DEFRA states 18%. This lines up with the European Commission's estimate that packaging is 17% of EU household waste.

The amount of packaging generated by households for final disposal has gone down because manufacturers have reduced the amount of packaging per product and also because much more packaging is being recycled.

This means that packaging from households is 1.6% of all waste (ie 18% of 9%).

The fractions of household waste that continue to grow are food, magazines and unsolicited mail and clothing.

UK waste

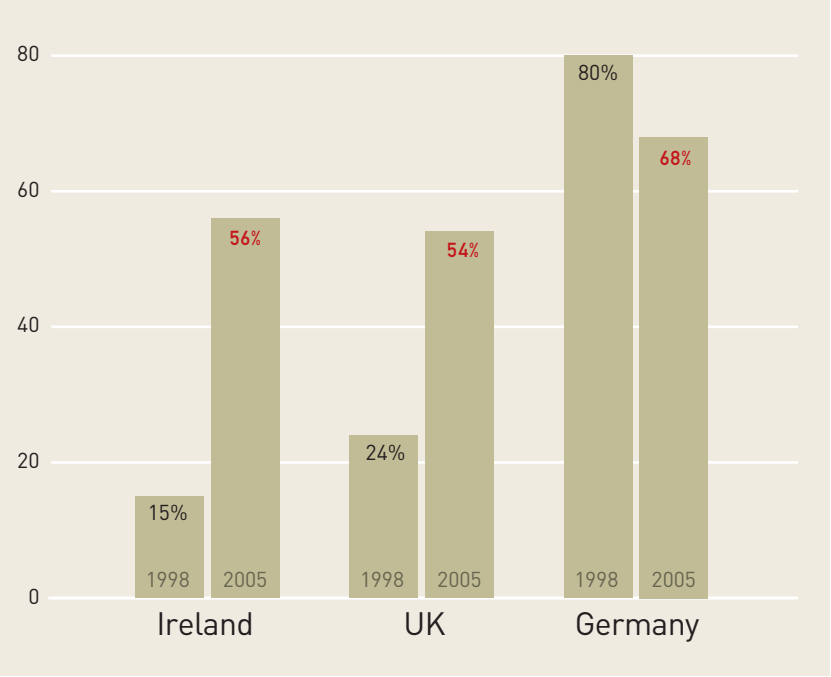


Comparing the UK with other European countries

Between 1997 and 2005, the average annual increase in the amount of packaging placed on the market in the 15 "old" EU countries was 2.2%; in the UK it was 1%. The average annual growth in GDP over the same period was 3.9%.

The overall EU packaging recycling rate increased by 11%. Largest increases were Ireland – from 15% to 56% and the UK – from 24% to 54%. Germany's recycling rate has fallen by 12% (from 80% to 68%).

Packaging recycling rates



Amount of Packaging used in 2005

	Kg per person
	2005
Greece	90
Finland	91
Sweden	117
Austria	123
Portugal	130
Belgium	138
UK	**147**
Italy	156
Germany	158
Spain	158
Denmark	158
France	162
Netherlands	172
Ireland	183
Luxembourg	189
average EU	145

Source: EU Commission

Packaging Recovered 1998 and 2005

	Recovered percent	
	2005	1998
Belgium	93	73
Netherlands	92	84
Denmark	90	89
Luxembourg	88	51
Germany	87	81
Austria	85	70
Finland	68	55
Italy	65	34
France	64	56
UK	**61**	**33**
Ireland	59	15
Sweden	56	82
Spain	56	37
Portugal	51	35
Greece	42	35
average EU	70	54

Source: EU Commision

Packaging Recycled 1998 and 2005

	Recycled percent	
	2005	1998
Belgium	77	64
Germany	68	80
Austria	67	65
Luxembourg	63	42
Netherlands	59	62
Ireland	56	15
UK	**54**	**28**
Italy	54	32
Denmark	53	50
France	53	42
Spain	50	34
Sweden	48	75
Portugal	44	35
Finland	43	45
Greece	42	35
average EU	57	47

Source: EU Commision

FAQs

Why is there so much packaging?

Most packaging is designed to use the minimum amount of material to get goods and food safely from the farm or factory into people's homes, and to other industrial and commercial users, in prime condition. As well as protecting goods and preserving food, it has to carry information about the product and ensure it is safe and easy to use. Manufacturers are continuously improving and reducing their packaging because it cuts their costs and reduces environmental impact.

A very few items are excessively packaged and the industry encourages the regulators to get rid of them. Some toys, for example, are not just excessively packaged but are difficult to open. Most of these are made in the Far East for a global market so all countries need to put pressure on the manufacturers to improve.

Why aren't things sold "loose" without packaging?

Consumers can choose to buy some products loose, eg fruit and vegetables, delicatessen foods. It's up to them to choose based on what suits their lifestyle and how long they want the food to last. For example, a cucumber doesn't need packaging if it is picked for consumption that day. If it is kept for longer, 1.5 grams of thin plastic wrapping extends its shelf life from 3 to 14 days and keeps it fresh for longer at home.

Many products would simply not be available without packaging. Drinks, other liquids, gels and semi-solid items like paint have to be contained. Most products need packaging to maintain their quality and condition and they all need it to get products to the shops even if they don't have packaging on them when they are displayed.

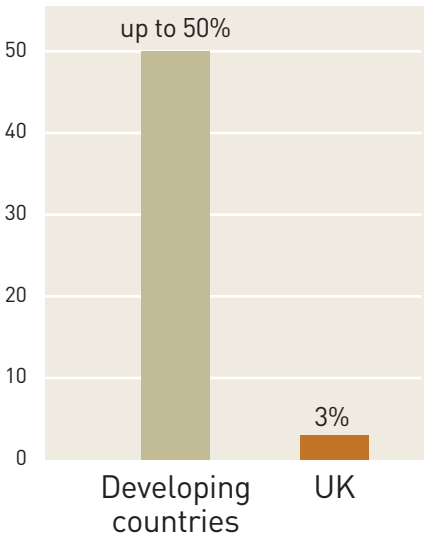
Why do consumers have to pay for packaging twice – at the checkout and for its disposal?

They don't. Like delivery lorries, packaging is part of the system for getting products to the shops. Without packaging, many foods and other goods would not be available. All goods would be more expensive to compensate for the high levels of waste from damaged goods and spoilt food.

Like old trainers, potato peelings, fish skins, uneaten food, junk mail and everything else that ends up in municipal waste, consumers pay through Council tax for waste collection and disposal – a service that is provided primarily for public health reasons. Waste collection and disposal costs depend on the amount of labour and vehicles used as well as the amount of waste. Even if a household generates no waste, most of the costs are still incurred because the service is still provided.

The cost of packaging depends on the amount of protection that a product needs and how it is retailed. Products sold packaged sometimes cost more than equivalent ones sold loose. This covers the extra cost of the packaging and the labour needed to select and pack them but damage and wastage in-store and at home is lower. On the other hand, the cost of sliced ham from

a delicatessen counter is usually higher because of the labour to slice and wrap and because more packaging is used to wrap any unsold ham every night. More ham goes to waste because it does not last as long as packaged ham.



Why don't companies use less packaging?

They try to use the minimum amount because packaging costs them money and because the Essential Requirements law requires that they do. A process of continuous improvement and lightweighting has been happening for many years and will continue in the future.

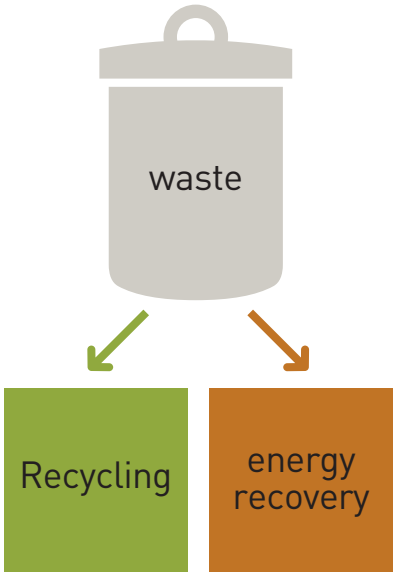
What would happen if there was no packaging?

Modern society would not be able to exist. In 2008, for the first time ever, more people worldwide live in urban rather than rural environments. This means that food and other goods have to be made at some distance from where they are consumed. Packaging is needed to ensure the goods survive the journey from production to consumption.

Food wastage in developing countries can be as high as 50%; by contrast in the UK only 3% goes to waste before it reaches the shops.

Why is so much packaging used just to sell products?

Packaging is used for marketing and promoting brands alongside all its other functions. The Essential Requirements law requires that the minimum is used and it allows companies to use an appropriate amount for marketing purposes.



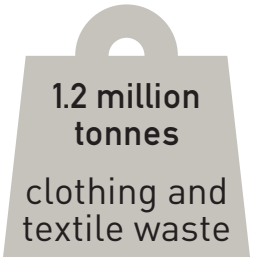
Is there more and more packaging?

Since 1998 the UK population and the number of single-person households have grown and GDP has increased by 28%. Consumers have therefore bought more products. Despite this, the total amount of packaging has increased by less than 8%, mainly as a result of companies reducing the amount of material in each pack.

What should consumers do with packaging after it has been emptied?

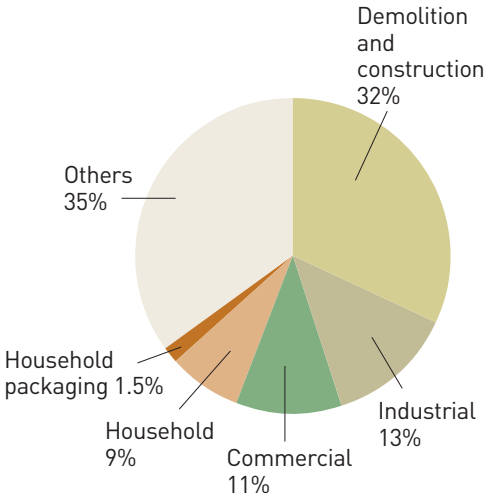
Support their local council's waste collection and recycling schemes. To check what can be recycled in specific areas see www.recyclenow.com and www.recycle-more.co.uk

Other packaging should be left in with the mixed waste. In an increasing number of areas energy will be recovered from it in energy-from-waste plants.



Why are households' dustbins so full of packaging?

Government figures show that packaging is 18% of the weight of household waste. Consumers can reduce the amount sent for final disposal by separating out the recyclable items for kerbside collection or to take to recycling centres. There is more food waste than packaging in the average household bin. Packaging waste has been reducing over the last 20 years unlike waste from newspapers, junk mail, food and clothing which have been growing. According to the Defra-funded Centre for Remanufacturing and Reuse, clothing and textile waste is the fastest growing household waste stream with 1.2 million tonnes ending up in landfill each year.



Why is packaging such a large proportion of waste?

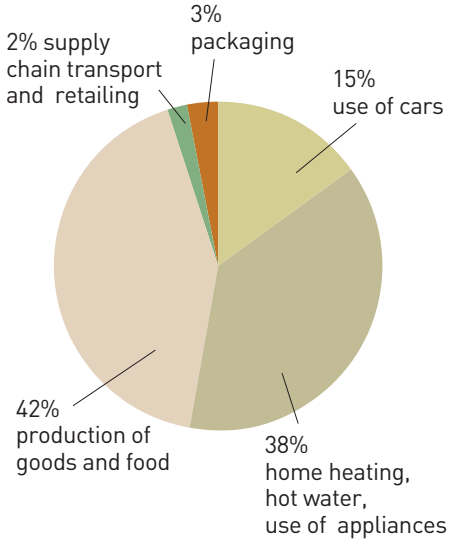
It isn't. According to Defra, industrial, commercial and household packaging is less than 3% of the waste that goes to landfill. Household packaging is 1.5% of all waste arisings. Demolition and construction is 32%, industrial 13%, commercial 11%, household 9% and others 35%.

Is doing something about packaging more important than global warming?

No. The average household buys 4,300 items a year. These are protected by 190 kg of packaging. Packaging is typically 9% of the weight of the packaged product and uses on average 8% of the energy used in the production and delivery of products.

Use of cars, home heating and hot water and use of appliances account for 53% of a household's energy. Energy used to make packaging represents just 3%.

Household energy use



Are the recyclables that councils collect actually recycled?

All separated recyclable materials are sent to sorting centres and then sold to reprocessors for turning into new materials. Some recycled materials are used for other goods and some for packaging. Packaging manufacturers have a long history of using recycled materials eg over 80% of the material in cardboard boxes has been recycled.

Why is some packaging waste exported to the Far East and is it recycled there?

Far fewer products are made in the UK today than even ten years ago. Many are imported from the Far East so that is where the demand for materials and recycled materials is greatest. If the ships bringing packaged electronics from the Far East did not take the old boxes back for recycling, they might well go back empty. There is a legal requirement that recycling that is done abroad is done to standards equivalent to those in the UK.

Why isn't all packaging recyclable or compostable?

Packaging is designed first and foremost to protect products throughout the supply chain. Manufacturers also have to design it so that it can be reused, recycled or energy recovered from it after use.

Packaging is recycled if it can be collected, transported and cleaned using less energy and resources than would be used to make virgin raw materials. In areas where councils compost waste, dirty paper and board can also be composted.

Some packaging, especially lightweight mixed material packs, which often contain food residues, are not currently worth recycling because it takes more energy and resources to do so than is recovered. However, this sort of packaging often has environmental benefits earlier in its life because it is less bulky and therefore fewer lorries are needed to deliver products, saving on fuel used for transport. Value can still be recovered from it in – the increasing number of – areas where councils have energy from waste plants.

Kerbside collection, bottle and can banks and recycling centres exist for over 85% of packaging – glass, metals, paper and board and plastic bottles. Composting often generates methane which has over twenty times the climate change impact of carbon dioxide, so compostable packaging is not always a better choice.

Does burning packaging waste increase global warming?

Energy generated from waste replaces the use of fossil fuel. Biodegradable waste decomposes in landfill and gives off methane which is over twenty times more powerful as a greenhouse gas than carbon dioxide. Energy from waste plants have to conform to stricter pollution controls than regular power generating plants. The UK has caught up with Europe on recycling but is still behind on energy from waste. The government's waste strategy is addressing this.

The EU countries with the highest recycling rates also have high rates of energy recovery from waste.

Does the UK use more packaging than anyone else in Europe and recycle less?

No, the UK is roughly in the middle. In 2005, the European average for all packaging put on the market was 145kg per person; the UK was 147kg. The European average recycling rate was 57%; the UK was 54%.

Sources

ACP – Advisory Committee on Packaging

AEA Technology – www.aeat.co.uk

BERR – Department of Business, Enterprise and Regulatory Reform www.berr.gov.uk

British Glass – www.britglass.org.uk

British Plastics Federation – www.bpf.co.uk

Confederation of Paper Industries – www.paper.org.uk

DEFRA – Department of Environment, Food and Rural Affairs www.defra.gov.uk

Environment Agency – enforces the Producer Responsibility Obligations (Packaging Waste) – www.environment-agency.gov.uk

INCPEN – Industry Council for Packaging and the Environment www.incpen.org

LACORS – coordinates Trading Standards Officers who enforce the Packaging (Essential Requirements) Regulations – www.lacors.gov.uk

LARAC – Local Authority Recycling Advisory Committee www.larac.org.uk

LGA – Local Government Association www.lga.gov.uk

Metal Packaging Manufacturers Association – www.mpma.org.uk

Packaging and Films Association – www.pafa.org.uk

PRAG – Packaging Recovery and Recycling Action Group

Valpak – the largest UK compliance scheme for packaging recovery www.valpak.co.uk

WRAP – the Waste and Resources Action Programme www.wrap.org.uk

Regulations

The Packaging & Packaging Waste Directive 94/62/EC was adopted at the end of 1994 and subsequently amended by Directive 2004/12/EC. It was introduced to prevent European Member States from implementing measures that would discriminate between types of packaging and / or result in restricting free trade of goods within the European Community. http://ec.europa.eu/environment/waste/packaging/legis.htm.

In the UK it has been implemented by the following two laws:

- The Producer Responsibility Obligations (Packaging Waste) Regulations 2007 (S.I. 2007 No. 871). http://www.defra.gov.uk/environment/waste/topics/packaging/index.htm.

Most EU countries have adopted a "Green Dot system" to implement the Directive's recovery and recycling targets. The UK has taken a "shared approach" where companies in all parts of the supply chain – raw material suppliers, packaging manufacturers, product manufacturers and retailers – take a share of the financial obligation to meet the targets. Most companies belong to one of roughly 20 "compliance schemes" which operate on behalf of their members to comply with the Regulations. The Regulations apply to all companies that handle more than 50 tonnes of packaging a year and have a turnover in excess of £2 million a year.

It is monitored through an online system developed between industry and government known as the National Packaging Waste Database. This unique development was designed and installed in record time and has greatly improved the monitoring of the process and reduced cost.

Companies have spent £1.5 billion in the last 10 years to support recovery and recycling. Government funds have directly supported research into new end markets for recyclables, training programmes, identification of best practice and other investigations.

- The Packaging (Essential Requirements) Regulations 2003 (S.I. 2003 No. 1941), as amended by the Packaging (Essential Requirements) (Amendment) Regulations 2006 (S.I. 2006 No. 1492). http://www.opsi.gov.uk/si/si2003/uksi_20031941_en.pdf and http://www.opsi.gov.uk/si/si2006/uksi_20061492_en.pdf. BERR (2007), Packaging (Essential Requirements) – Government Guidance Notes. http://www.berr.gov.uk/files/file36659.pdf .

These Regulations require companies to ensure that their packaging is designed to be fit for purpose and is the minimum weight and volume needed for safety, hygiene and consumer acceptability. The packaging may be reusable and it must be capable of being recovered through at least one of material recycling, incineration with energy recovery or composting and biodegradation. The combined concentration of cadmium, mercury, lead and hexavalent chromium must not exceed 100 ppm.

INCPEN – the Industry Council for Packaging and the Environment is a research organisation established in 1974 to study the environmental and social impacts of packaging. It draws together an influential group of companies that operate throughout the supply chain, with a common interest in packaging, the environment and sustainable consumption and production.
www.incpen.org

The Packaging Federation is the trade association for the UK packaging manufacturing industry.
www.packagingfedn.co.uk

INCPEN Charter members

Valpak is the UK's leading provider of compliance and recycling solutions. www.valpak.co.uk

The Advisory Committee on Packaging was set up by the Environment Minister in 1996 to advise Government on the drafting of Regulations implementing parts of the European Directive on Packaging and Packaging Waste EC/94/62. This group which represents the key players in the packaging supply chain with Government departments and devolved administrations in attendance has made a number of important recommendations for improved operation of the regulations.

ACP Communications Task Force

ACP Chair John Turner
BERR Peter Askew
BPI Andrew Green
Defra Ian Atkinson
INCPEN Jane Bickerstaffe
Packaging Federation Dick Searle
Valpak Steve Gough
WRAP Andy Dawe

First printed October 2008

Design: www.jebensdesign.co.uk

Printed on recycled stock using soya based inks