

# Baileys Bottle



## Improvement

**Minimisation of primary packaging**  
**Prevention of secondary packaging**

## Description of changes

Baileys Irish Cream is the number one selling liqueur in the world and the sixth largest selling spirit brand. Launched in 1974, Baileys is now sold in 130 countries and accounts for 6% of all Irish food and drink exports.

The change to the Baileys bottle design included a new label, and a slightly different shaped bottle which was, importantly, lighter than its predecessor. The new bottle has less glass without compromising the structural integrity of the bottle. The primary objective for this new design is to minimise the amount of glass being supplied by Baileys to the Irish and International markets. In addition five of the six cardboard slip trays with the re-usable plastic trays on each pallet (it is necessary to leave the top cardboard slip tray for stability reasons).

## Environmental benefits

- Cardboard packaging saved per annum: - 52.9 tonnes
- Glass packaging saved per annum: - 377.8 tonnes

## Balance of improvements

Packaging Reduction	Before	After	Prevention
Lightweighting of bottle	1265g	1118g	11.6%
Removal of Cardboard	1.32kg	0.27kg	80%

website: <http://www.baileys.com>





Glass never wears out and can be recycled for ever.

Recycling one glass bottle saves enough energy to light an 80w light bulb for three hours.

# Lucozade Bottle



## Improvement.

**Reduction of Lucozade bottle material weight and cardboard tray weight.**

## Description of changes:

GlaxoSmithKline is a leader in the worldwide consumer healthcare market. Its involvement in the dietetic foods market centres on the sports nutrition sector. Lucozade, one of its long established products, was re-positioned during the 1990s to take account of the growing popularity of sports drinks.

After a series of product quality testing, packaging technicians at the manufacturing sites discovered that it was possible to reduce the weight of material (PET) per bottle without affecting the quality of the product.

At the same time, new product equipment was installed which allowed the producer to move from the standard cardboard tray with sides to a simple flat board – thereby significantly reducing the amount of cardboard used per standard pack.

## Environmental benefits:

Significant annual reductions in waste packaging placed on the market.

## Balance of Improvements:

- 14% reduction in weight of PET placed on the market annually
- 40% reduction in weight of cardboard placed on the market annually.

Website: <http://gsk.com>





"I definitely think energy drinks could become our generation's coffee," ....

Chad Miller, college student, Indiana (idsnews 24/2/2005)

# Beverage Cases



## Improvement.

### Prevention and minimisation of secondary packaging

#### Description of changes:

C&C has a long history with the drinks industry in Ireland and is a brand leading manufacturer, marketer and distributor of beverages and snacks in the Irish and overseas markets. Its soft drinks brands include market leaders such as Club Orange, Ballygowan, 7Up, Pepsi and MiWadi.

Originally the 9 x 2 Litre pack consisted of a 73 gram cardboard pad and 49 grams of 75 micron polyethylene shrinkfilm. By removing the cardboard pad from this pack, it became possible to remove almost 300 tonnes of cardboard per year from this pack. New polyethylene shrinkfilm technology has also allowed a reduction in the thickness of the shrinkfilm used from 75 micron to 55 micron. This has led to a 30.6% reduction in the quantity of shrinkfilm used.

#### Environmental benefits:

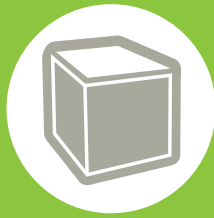
- Plastic packaging saved per annum:- 67.7 tonnes
- Paper packaging saved per annum:- 289.9 tonnes
- Use of one material instead of two
- Reduction in number of deliveries

#### Balance of Improvements:

Packaging Reduction	Before	After	Weight
Removal of Cardboard	73.0g	0	100%
Removal of Plastic	49.0g	34.65g	30.6%
Total	122g	34.65g	71.6%

website: <http://www.candcgroupplc.com/>





“PET offers numerous advantages over other packaging materials. Its low cost, light weight, durability and transparency qualities are just some of the reasons PET has become such a leading material. But it’s PET’s recyclability which makes it such a popular and effective packaging material,” ....

Source: [piranet.com](http://piranet.com)

# Batchelors Cans



## Improvement.

### Lightweighting of food cans.

#### Description of changes:

Batchelors have been a leading producer of branded canned vegetables and other food products in Ireland for many years. Batchelors Baked Beans and Batchelors Peas continue to be market leaders in their sectors and many of the company's other food products are also strong brands.

A programme of lightweighting food cans has resulted in many positive benefits. This required the application of critical design features to add strength to the lightweighted can to withstand handling, filling, processing and final transportation of the finished pack. Simultaneously, innovative technologies were introduced to improve convenience features such as easy opening lids and more advanced and effective lacquer systems to facilitate reduction of tin coating. Other design features such as re-engineered compression rings were utilised to enhance can performance during processing and storage.

#### Environmental benefits:

A reduction of steel, tin and energy in can manufacture while continuing to support recycling targets.

#### Balance of Improvements:

##### PACKAGING

Lighter cans which have achieved packaging and cost reductions in the context of increasing costs in energy, steel and tin.





The development of canned foods can be traced back to the Napoleonic Wars but began to achieve widespread popularity in the 19th Century, as the new urban population demanded ever-increasing quantities of varied, good-quality food that could be kept safely on the shelves at home.



# Ritz Bottle



## Improvement.

**Change in material used in sleeve resulting in a lighter more recyclable material.**

## Description of changes:

Bulmers Ireland is a member company of the Cantrell and Cochrane (C&C) Group and is Ireland's only cider manufacturing company. Its flagship brands are Bulmers Original Vintage Cider and Magners Cider for the UK and export market. Bulmers is also responsible for the production and marketing of Ritz and Stag.

Ritz have moved from a PVC sleeve to a PET sleeve. PET is more recyclable than PVC and polymer usage is 6.4% less. The resulting PET sleeve provides a higher gloss level on the sleeve with more impact resistance. In addition, the new sleeve has better shrink ability on the application line with less heat required in the shrink process.

## Environmental benefits:

- PET more recyclable than PVC
- PET has less harmful dioxins
- The production process of PET is less harmful to the environment

## Balance of improvement:

Reduction of PET polymer usage is 6.4% less than PVC film  
 Savings on PET Polymer yield is approximately 3.3% less than PVC film

Website: <http://www.ritz.ie>





PET (which stands for polyethylene terephthalate) is the name of the resin used to manufacture transparent, lightweight, shatter proof bottles and packaging.

PET is a highly recyclable material. The material from 27 recycled PET bottles can make one fleece jacket.

# Paint Containers



## Improvement.

### Prevention of secondary packaging

#### Description of changes:

Dulux Paints Ireland, based in Cork, have been involved in the manufacture and distribution of paints in Ireland for many years. The company, now part of the ICI group, produce a range of products which include Dulux paints, Dulux Weathershield and Cuprinol garden products.

A new packaging minimisation initiative resulted in the elimination of the cardboard cartons used to pack 5L plastic containers. The 48 cartons used per pallet (weighing 8.64kg) were replaced with four layer pads (weighing 0.846kg) and 0.3kg of stretch wrap. These changes along with eliminating the cardboard packaging allowed Dulux to increase the pallet capacity by 4%.

#### Environmental benefits:

Reduction of packaging being placed on the market

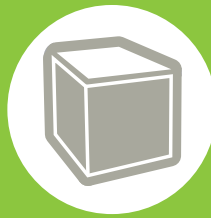


#### Balance of Improvements:

Packaging	Weight Reduction	Minimisation
Secondary packaging (Cardboard cartons per pallet)	7.794kg	90.2%
Overall packaging per pallet		42.6%
Tertiary packaging		4%

website: <http://www.dulux.ie>





The value of the Irish hardware and DIY market is more than €510m (2002) and is currently experiencing strong growth. There are over 1,000 retailers in the sector, employing 24,000 people.

# Broadband Modem



## Improvement.

### Prevention of packaging material.

### Description of changes:

eircom plc. is Ireland's leading provider of telecommunications and provides an extensive range of advanced voice, data and internet services.

The original packaging on the eircom plc. broadband modem consisted of a cardboard box with a colour-printed sleeve. To facilitate posting, the modem was placed in a second plain box.

As the associated packaging weight was significant, there were growing issues relating to procurement and warehousing as sales volumes increased. Investigations were carried out on ways to reduce the packaging without reducing its effectiveness.

The new packaging arrangement dispensed with the use of the coloured sleeve, which necessitated the use of a second box. This resulted in a packaging saving of 15 tonnes per annum as well as other logistics improvements.

### Environmental benefits:

- Reduction in use of inks
- Per pack weight reduction 158.3g
- 41% reduction in cardboard packaging per unit  
Paper packaging saved per annum: - 15 tonnes
- Use of one material instead of two
- Reduction in number of deliveries

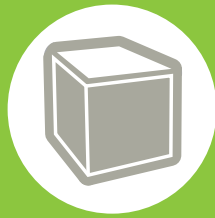


### Balance of Improvements:

	Before	After	Reduction	%Reduction
Primary (box)	229.2g	229.2g	0g	0
Secondary (colour printed sleeve)	53.6g	0g	53.6g	100
Secondary (second box)	104.7g	0g	104.7g	100
<b>Total</b>	<b>387.5g</b>	<b>229.2g</b>	<b>158.3g</b>	<b>41</b>

Website: <http://www.eircom.ie/>





There are now more than 230,000 broadband lines in Ireland, and 85% of telephone lines are connected to a broadband enabled exchange.

# Toilet Tissue



## Improvement.

**Removal of cardboard cores in toilet tissue rolls; Reduction in packaging for toilet tissue.**

## Description of changes:

Georgia-Pacific is one of the world's leading manufacturers and marketers of tissue, packaging, paper, building products and related chemicals.

Unlike conventional toilet tissues, the Lotus Professional Compact Coreless Toilet Tissue System features a 'coreless' toilet roll - i.e. a roll that does not require a cardboard core to be left behind at the end of the roll. When the last sheet is used, literally nothing is left behind. In addition, because it's compactly wound, the rolls and packs are smaller. Two rolls of Compact are equivalent to nine rolls of conventional toilet tissue. This means that one case of Compact rolls is equivalent to 4.5 cases of conventional toilet paper. Normally 4.5 cases of toilet tissue would have 162 cores, weighing more than 0.7kg - this is reduced to zero. The packaging for 4.5 cases of toilet tissue would weigh around 0.5kg - this is reduced to 0.12kg - a reduction in packaging waste of 76%. Pallet fill is also improved, optimising transportation and warehousing. Moving from conventional toilet tissue to Compact gives a 66% improvement in pallet utilisation. Finally, the paper used in Compact is 100% recycled from waste paper, so it has further positive impacts on the recycling loop.

## Environmental benefits:

- Elimination of cardboard cores
- Reduction of packaging film
- Improved pallet utilisation +66%
- 100% recycled paper tissue

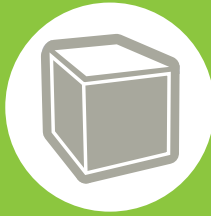
## Balance of Improvements:

Packaging	Weight	Reduction
Removal of cardboard cores	-0.70kg	-100%
Reduced primary packaging	-0.38kg	-76%



Website: <http://www.gp.com>





Premium toilet tissue holds 60% of the market, while economy holds 23.8%

# Animal treatment



## Improvement.

**Reduction in paper packaging of more than 40%**

### Description of changes:

Waterford-based Novartis Animal Health Ireland Limited, in line with other measures taken across Europe involving major international brands, have taken an initiative to make a significant reduction of paper packaging distributed with products in Ireland.

Significant savings have been achieved with one-litre units of Poron S.P., an external parasite protection product for animals, despite this product being classified as hazardous for road transport.

Inner cartons have been removed, transport multiples reduced from 10 to 6 allowing a downgrade on the shipping carton without compromising its ability to meet the stringent UN testing requirements (ADR regulations).

### Environmental benefits:

- Removal of inner cartons (packaging prevention)
- Reduction in shipping case quantity (reduction in board grade)
- No compromise in safety - UN approval of packaging (ADR transport requirement) still achieved

### Balance of Improvements:

More than 40% reduction in paper distributed





# Beverage Cartons



## Improvement.

**An improved packaging material offering an enhanced package performance and a superior environmental profile.**

### Description of changes:

Tetra Pak is the world's leader and largest supplier of carton packaging for milk, soup, fruit juices, and other liquid products. Tetra Pak today supplies hundreds of different types of carton packaging formats.

Wide packaging material, a new standard of packaging material now used by Tetra Pak in its cartons worldwide, offers superior packaging performance, having a new innovative inner plastic coating that is stronger and more robust than the previous packaging material. Because the new plastic coating is thinner than the previous one (approximately 30% lighter), the overall package weight is reduced. Moreover, the reduced use of plastic material in the package determines an increase of proportion of material from natural, renewable sources in beverage cartons (paper) and a more efficient production process by polymer suppliers determines a superior environmental profile of the final package. However, this improvement is cost-neutral to the packer due to the higher cost of the new polymer.

### Environmental benefits:

- package weight reduction
- polymer saved by annum: 50,000 tons (globally)
- reduction of energy use in packaging manufacturing

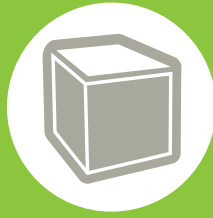
### Balance of Improvements:

	Prevention
Total Packaging Weight	3%
Plastic content in packaging	2.5%
Reduction of the Gross Energy Requirement (GER <sup>1</sup> ) for production of plastic used in packaging material	16%
Reduction of the GER of overall package	4%

<sup>1</sup>GER is the sum of all resources with energy content.

website: <http://www.tetrapak.com>





Nearly 60% of all packaging made is directed for food and beverage product protection and preservation. Food and beverage packaging technology is evolutionary and responsive to marketing and distribution stimuli. Innovation in the industry continues to be driven by fast changing social trends and the increasing consumer demand for convenience and safety.

# Fabric Cleaning Powder



## Improvement.

**Lighter packs and less powder per wash by concentration.**

## Description of changes:

Unilever's Irish headquarters are located at Citywest Business Campus and this forms part of an international company that currently owns many of the world's leading consumer product brands in foods, beverages, cleaning agents and personal care products. Unilever has been producing soap and washing detergents since the early 1900's and many of these products are well established on the Irish market.

In 2005, the concentration of detergent powders was carried out as part of a voluntary industry-wide initiative to reduce the weight of chemicals and packaging materials used per wash... Persil still has the same great cleaning power in its new recommended dosage, but you use less and the packs are smaller. So, the new powder gives consumers the same great cleaning results, but with the convenience of less weight to carry home, less chemicals in the environment and less packaging to dispose of.

## Environmental benefits:

- Less Packaging
- Less Chemicals
- Less Waste

## Balance of Improvements:

- Packaging reduction per pack 6%
- Packaging reduction per wash 6%

Website: [www.unilever.com](http://www.unilever.com)



Unilever





The use phase in the washing of clothes has a much greater environmental impact than the manufacture of either the washing machine or the fabric detergent production and associated packaging waste. Useful tips for consumers to help the environment when doing laundry include:

- avoid underfilling the machine - this will save on water and energy;
- measure detergent according to water hardness and the soil level of the laundry;
- use the lowest recommended temperature; most of today's detergents work well at low temperatures;
- reduce packaging, and keep permanent or refillable packaging.

# Plastic Bottle Beverage



## Improvement.

### Minimisation of packaging weight.

### Description of changes:

Coca-Cola first came to Ireland in 1952, and today Coca-Cola Bottlers Ireland produce and distribute the Coca-Cola Company brands for the Irish market. These include Diet Coke, Sprite, Fanta and Lilt.

The company has a continuous programme to prevent and minimise packaging and has led many innovations in this field. Due to technical optimisation, it was possible to reduce the quantity of material used to produce a standard plastic drinks bottle (PET). As a result, the 500ml bottle is now 0.5g lighter.

### Environmental benefits:

Reduction of 52.58 tonnes of PET plastic per annum.

### Balance of Improvements:

Packaging	Weight Reduction	Minimisation
Primary packaging (PET Bottle)	0.5g	2%

Website: <http://www.coca-colabottlers.com>





Plastic packaging across industry for a given unit has seen an average decrease in weight of approximately 28% in the last 10 years.

Without plastic packaging overall packaging consumption would increase by 291% by weight, leading to an increase in manufacturing energy by 158%.

Source: *Plastics contributing to environmental protection*, [www.plasticinformation.com](http://www.plasticinformation.com)

# Prevent and Save



Waste prevention, also known as source reduction, means using less material to get a job done.

Waste prevention methods help create less waste in the first place-before recycling. These methods include prevention (removal or avoidance of certain packaging) and minimisation (light-weighting of packaging). This “stop waste before it happens” approach is an integral part of how industry now approaches packaging decisions - avoiding overpackaged, disposable, and nonreusable or nonrecyclable products where possible. There are many examples of this approach in the case studies. Other examples of how this approach has a positive environmental impact include

- *Standard 400g food cans have reduced in weight by 21% since 1970 - this means that for every 1 million cans made today, there is a typical saving of 250 tonnes of steel compared with 1970;*
- *A supermarket chain in the UK has reduced the gauge of carrier bags from 30 to 25 microns - this has reduced the tonnage of plastic used by 1,450 tonnes a year*

The life cycle of a packaging product must be considered as part of that decision. Once the packaging material has fulfilled its function, then it should become a resource rather than a waste through reuse, recycling or recovery.

- *Manufacturing aluminium cans from recycled material takes only 5% of the energy needed to manufacture them from the raw material;*
- *Glass can be recycled indefinitely, as its structure does not deteriorate when reprocessed. In the case of bottles and jars, up to 80% of the total mixture can be made from reclaimed scrap glass. Recycling one glass bottle saves enough energy to light a 100 watt bulb for four hours.*

The total environmental impact of the packaging is also a major consideration. This must consider factors such as total energy and resource use.

Reducing the environmental impact can only be successful if the entire packaging production chain is taken into account. This also needs to take account of demographics and other consumer requirements.

Smaller households are on the increase in Ireland. The average household size has fallen from 4.01 in 1966 to 2.94 in 2002. Single-person households now account for more than one in five of all households. This means that many consumers are looking for smaller packs and more single serve portions

- *A study carried out by Packforsk, Sweden has shown that if milk is produced only in one litre cartons, there is a saving in the amount of packaging produced. But single-person or smaller households may not need a litre carton and some of the milk may sour and be wasted. If there is an increase in the number of smaller half-litre packages, there is an increase in packaging waste and energy consumption. But the use of smaller packages means that less milk turns sour and there is an overall saving in the energy used in the production, distribution and storing of milk.*



Repak



Prevention of packaging is a process of continuous improvement. Good design can play a hugely supportive role in determining where packaging can and should contain a high proportion of recycled material.

But consumers also have choices to make. Research on the environmental impact of household has shown that

- *a household which replaces a 4-wheel drive vehicle with fuel consumption of 20 miles to the gallon with a 40 mpg family car, will save more energy than it would save by four centuries of glass bottle recycling;*
- *Lowering the room temperature by 2°C would save almost all the energy used for a year's supply of packaging for the average household.*

## Industry working for the Environment

The case studies contained in this brochure come from Repak member companies, and are positive demonstrations of how industry is adopting a "prevent and save" approach to packaging materials.

Repak's Packaging Waste Prevention programme aims to assist Irish businesses with positive and practical ways to reduce packaging and to promote those achievements to a wider audience. The programme includes publications, seminars, best practice initiatives and the Repak Recycling Awards, which highlight further examples of how Repak members are demonstrating best practice in light-weighting, reducing and eliminating their packaging production.

Prevention means saving - savings on packaging, savings to the consumer and savings to the environment.

For further information regarding the Repak Packaging Waste Prevention Program please contact:

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