



Unpack those Hidden Savings



Summary

This Guide will help you to cut costs and raw material use associated with packaging, handling and storage, without compromising basic packaging requirements, eg for product protection. Companies that are carefully managing their packaging use are saving money and increasing profits, as well as saving valuable resources and reducing the volume of waste sent to landfill.

Most of the tips in this Guide relate to optimising the use of packaging and packaging materials. Adopting some of these ideas may help to reduce your company's legal obligations for the packaging it handles. Other tips relate to ancillary use of raw materials falling outside the legal interpretation. You will find that these tips will help you to take a fresh look at your overall operations and obligations, and cut your operating costs.

The ideas presented apply to companies of all sizes. Even companies not obligated under the packaging waste regulations can benefit. If you are just starting to look at ways to reduce your packaging-related costs, this Guide will show you where to start, and help you to make savings quickly and easily. If you are already taking action, it will help as a source of fresh ideas.

Use this Guide as a quick reference tool to help your company towards developing a systematic approach to packaging management. Good Practice Guide (GG140) *Cutting Costs and Waste by Reducing Packaging Use* sets out in more detail a practical step-by-step approach that you can adopt. The Environment and Energy Helpline on 0800 585794 can also provide you with more specific Case Studies, advice on what to do next or where to go for further help.

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Cutting Packaging Costs

Cutting Packaging Costs

What is packaging?

Packaging may be involved at each stage of a process, from raw materials to processed goods. In common usage, the term is used to describe materials that **contain and/or protect goods, help with handling and delivery, and identify products.** A wide range of materials is used, including paper, cardboard, plastics, glass, metals, wood, ceramics and fabrics.

In addition to common usage of packaging terms, there are legal definitions for packaging and packaging waste under the EC *Directive on Packaging and Packaging Waste* (94/62/EEC) and in the UK under the *Producer Responsibility Obligations (Packaging Waste) Regulations 1997* (PRO).

The objective of these regulations is to reduce the overall volume of packaging waste. The Environment Agency/Scottish Environment Protection Agency have also produced guidance on what constitutes packaging in the leaflet *The agencies' interpretation of 'packaging' second edition*. Some items which, in common usage, might be referred to as packaging are not listed, and vice versa. You can refer to the leaflet for clarification on 'packaging' in relation to any obligation you may have under the regulations. The Environment and Energy Helpline can also provide more information on the legal definitions.

There are three main categories of packaging:

- **primary (sales) packaging**, around a product at the point of purchase by the user/consumer, eg a bottle, plastic bag or a band around a magazine;
- **secondary (grouped) packaging**, which groups a number of items together until the point-of-sale, eg a box or strapping around a number of items;
- **tertiary (transport) packaging**, which allows handling and transport of a number of grouped items as a unit, eg a pallet or banding/shrink-wrap.

If you review your packaging use, you will find that there are many product items and accessories that can easily be overlooked - see the non-exhaustive list in Appendix 1.



Are your costs escaping?

What is packaging waste?

For the purpose of this Guide (and not a legal definition) packaging waste can be considered as waste arising from two main sources:

- New packaging can be considered as **being wasted if more than is needed is used to secure, transfer, contain or market the product.** For example, a double thickness of shrink-wrap, where one would have adequately contained the product, is waste.
- Packaging that enters your business and **leaves the business as waste** will incur a disposal cost. This can include packaging products that do not meet the appropriate specifications, excess transit packaging, or materials damaged in transit.

When looking for opportunities to reduce packaging waste costs, it is important to take a broader view in order to recognise the **true cost of waste.** This includes not only the disposal cost, but the cost of raw material and any other processing/handling costs that have gone into the material which then becomes a solid waste. In keeping with this broader view, in addition to packaging as **legally** defined, there are many items which have a function related to support, presentation or application of products which may be sold

along with or as part of a product. Examples are a lollipop stick, or a product applicator. Even though they may not result in packaging waste in the legal sense, they do use raw materials and other resources.

The type of reasoning applied in this Guide to the reduction of (obligated) packaging use can equally apply to the reduction of waste in supply of such product ancillary or accessory items, and there may be similar scope for cost savings. They have, therefore, been included in a broader view of packaging waste in the tips provided in this Guide.

How to use this Guide

Using this Guide, take the opportunity to have a good look at your packaging use - do you know how much you currently use and handle? Can you reduce the amount of packaging used? How much do you really need? Are you using more raw materials than your product requires? Can you re-use your existing packaging?

By looking closely at how you use packaging and how much is wasted, you could make considerable savings. This Guide includes examples of how companies have made savings by changing their approach to packaging; in some cases these savings have been over £200 000/year. Find out how your company can make packaging savings too.

The Guide provides numerous cost-saving tips for minimising your packaging use and packaging waste, and related use of raw materials. The tips, which cover the three main types of packaging listed on page 2, have been categorised into:

- packaging supply and transfer;
- packaging reception;
- packaging handling;
- packaging re-use, recycling and disposal.

To the left of each tip, where appropriate, an icon appears to categorise how the tip will help you to reduce your costs:

H

Mainly good housekeeping issues that are relatively simple to implement, with very low or no associated costs. Savings should appear in a short period of time.

C/S

These tips are likely to involve, to differing degrees, your supplier(s) or customer(s) and are likely to result in shared benefits and cost savings.

The savings achievable are always going to be site-dependent and company-specific. While most of the tips are no or low-cost, you will need to assess any capital investment requirements on a case-by-case basis.

Use this Guide as a quick reference tool to help your company towards developing a systematic approach to packaging management. Good Practice Guide (GG140) *Cutting Costs and Waste by Reducing Packaging Use* sets out in more detail a practical step-by-step approach that you can adopt. The Environment and Energy Helpline can also provide you with more specific Case Studies, advice on what to do next or where to go for further help.

Why you should reduce packaging

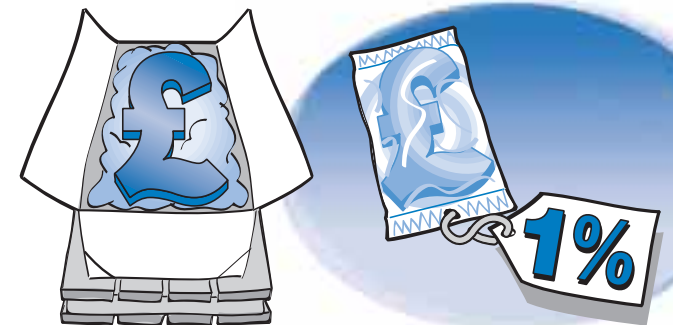
Seven good reasons

1 Lower packaging costs = higher profits = good business sense.

This is true even for companies that have legal obligations for the packaging they handle. Companies that are carefully managing their packaging use are saving money and increasing profits. Can you afford not to join them? Industry Examples throughout this Guide show how other companies are applying these tips for profit. Details of how one company has incorporated these tips into a waste minimisation initiative can be found in Appendix 3 at the back of this Guide, showing what can be achieved.

2 Waste minimisation benefits you and the environment.

Significant savings, as much as 1% of turnover, can be achieved through the introduction of a well-structured waste minimisation programme. Rethinking your use of packaging is a good starting point and is one area where simple low-cost changes are likely to yield substantial savings and make dramatic reductions in your waste disposal levels.



3 Minimising packaging waste at source helps to minimise the costs at source. Bear in mind the waste hierarchy as a focus for considering your options. Try to find ways to **eliminate** packaging waste at source - this is usually best for the environment and offers the best route to cost savings. Next, you should aim to **minimise** waste or at least **re-use** it, ie using the packaging in the same form as you used it originally so that it doesn't need further costly processing. Where these are not possible options, look to **recycle** packaging waste outside your organisation, eg such as shredded paper or cardboard for animal bedding. Incineration with energy recovery may be attractive. Finally, **disposal** ranks as the lowest option in the waste hierarchy because it is least beneficial.

4 Companies rarely add up how much packaging and its associated waste is costing them. If you are to reduce your packaging costs, you need a thorough understanding of the source of **all** costs relating to the production, use and disposal of packaging materials. As with any other type of waste, many of these costs will be hidden but may significantly affect the bottom line of the company figures. As well as material costs, make sure you include those of: each process input; labour; waste storage; waste disposal; compliance with legislation; and any special customer/supplier requirements.

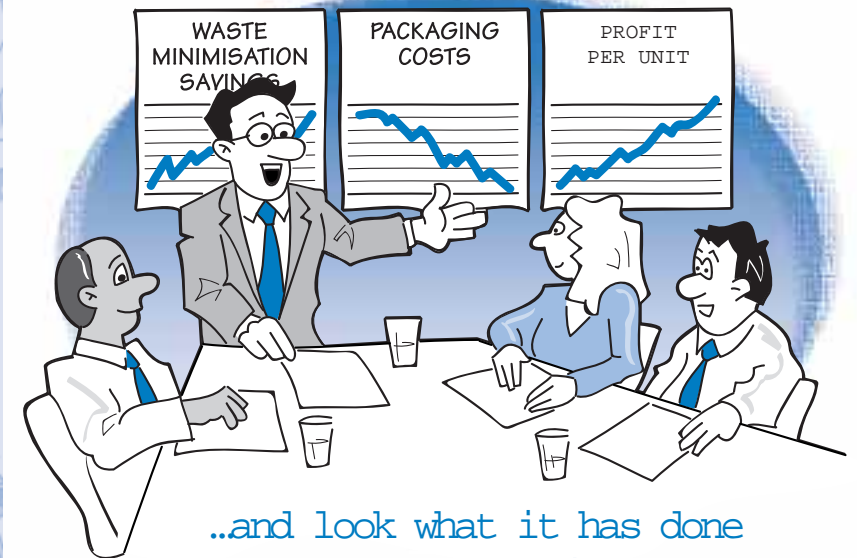
INGREDIENT PACKAGING
 + PRODUCT PACKAGING
 + PROCESS PACKAGING
 + TRANSIT PACKAGING
 + COST OF WASTE
 = **MORE THAN I THOUGHT**



5 Any elimination or re-use of packaging will reduce costs and obligations. For many companies, legislative pressure has been a key driver for addressing packaging use and waste. Cutting the quantity of packaging used will reduce your company's obligations **and** cut the cost of compliance. Minimising the use of packaging is required under the Packaging (Essential Requirements) Regulations 1998. Good Practice Guide (GG140) *Cutting Costs and Waste by Reducing Packaging Use* contains details of the packaging waste regulations and whom they affect. Contact the Environment and Energy Helpline for the latest information. Even if your company is not obligated, you may be affected - by others in your supply chain wishing to reduce the packaging they use.

6 Packaging management provides wider benefits. Companies that optimise their packaging use save money directly on packaging costs and also through reduced product damage, reduced waste disposal costs, increased efficiency and lower transport costs. They also benefit from an improved company image, and know that their actions will help them to comply with current and future legislation.

7 Time spent on packaging management is never wasted. An existing system can nearly always be improved. Changes to packaging can significantly reduce material costs and help to minimise component and product damage.



Cost Saving Tips

Cost Saving Tips

Packaging supply and transfer

The packaging you supply - practice and materials use

By eliminating or minimising the packaging materials you use for the supply of your products you can reduce your purchasing costs and minimise packaging waste for the companies you supply. By encouraging your suppliers to do the same, you can reduce your costs. These actions will also help you to meet any requirements under the Producer Responsibility Obligations (Packaging Waste) Regulations 1997 and will give you a head start on any future legislation. Call the Environment and Energy Helpline for more information on current packaging legislation.

C/S

1

Remember the waste hierarchy. Consider every type of packaging material that you use, handle or place on the market. **Is it really necessary?** If not, eliminate it. Where it cannot be eliminated, **can the amount used be reduced?** **Can it be re-used** by you, your suppliers or those you supply? If not, **can it be recycled?**



SOMETIMES
PACKAGING IS
ESSENTIAL!

2

What kind of packaging do you need? Consider your total packaging use - primary, secondary and tertiary. Aim for an overall reduction in packaging use without compromising its purpose - **a reduction in one type should not be over compensated for by an increase in another.**

3

Would minor product or production changes reduce your packaging requirements? Again, look at the overall picture. Do your products need to be **the shape they are?** Could **alternative materials** make packing easier? Can product handling be improved? Assess any new packaging design against the *Responsible packaging code of practice - for optimising packaging and minimising waste*, available from INCPEN (see Appendix 2 for details or contact the Environment and Energy Helpline).

4

Optimise your packaging design to give the required product protection, display and delivery with the minimum amount of materials. Carry out trials on packaging to **establish the minimum packaging requirements**, in terms of type of material used and design. Can you reduce or **eliminate the use of filler** by altering packaging design?

A pet food manufacturer lowered the sides of the cardboard transit trays used for the grouping of individual product boxes. This reduced the amount of corrugated cardboard used in the design by 49%, reduced ink use by 49%, provided an overall net reduction of 12% in the use of white kraft board and provided annual savings of £100 000.

5

Design packaging to prevent damage. Make sure that all packaging fulfils its purpose, particularly when it comes to **product protection**, otherwise this may lead to wasted product, wasted packaging or both. Look at the reasons for damaged goods - is it packaging design, a training problem, a labelling problem?

- 6** Consider alternative **shrink-wrap specifications**. Many companies find that they can reduce the grade of material used, say from 50 µm to 30 µm, without any reduction in product protection.
- 7** Reduce the number of boxes/cartons used. Consider alternatives. In some cases, shrink-wrap can offer the same level of protection for only a fraction of the weight.
- C/S** **8** Be aware of the heavy metals content of your packaging. The amount of heavy metals in packaging is limited under the Packaging (Essential Requirements) Regulations 1998. If you make packaging or are a converter within the packaging chain, make sure you know the limits. Contact the Environment and Energy Helpline if you need further information.
- 9** Replace virgin materials wherever possible. Assess the feasibility of replacing virgin packaging materials with recycled alternatives. Buying recycled materials not only cuts waste to landfill and preserves finite resources, but also helps to stimulate the market for reclaimed materials. If you've not already done so, you could introduce an environmental purchasing policy.
- 10** Maximise re-use and recycling. Ensure that as much as possible of any packaging materials passed onto others is re-usable or recyclable. Identify the materials used on the packaging itself, to help your customers to re-use or recycle. Let your customers know of any appropriate schemes or suggest ways to re-use packaging. Good Practice Guide (GG141) *Choosing and Managing Re-usable Transit Packaging* will provide you with some extra ideas and is available free of charge through the Environment and Energy Helpline.
- 11** Do you need to use laminates? Certain laminated (eg polyethylene-covered) boards and adhesives (eg regular hot melts and cold seal) cause problems for reprocessors. Low and high-density hot melts are easier to remove in the recycling pulp preparation process. In the plastics field, unpigmented plastics offer greater reprocessing flexibility.
- 12** Consider container volume. Would altering the size of outer (tertiary) packaging allow more efficient packing, for example, would changes allow more sales units per box?
- 13** Avoid double-skinned containers. Unless there is a clear technical justification, don't use double-skinned containers. Their cost per unit volume is high.
- 14** Standardise outer packaging where possible. Keep the outer layer of packaging simple and standardise as much as possible - use customised inner liners to fit the outer packaging for fragile items.

- 15** Could you use inflatable liners inside standard containers? Inflatable inner liners weigh little, yet provide excellent insulation and protection for fragile products.
- 16** Design containers for effective cleaning and maintenance. Make containers as simple and accessible as possible, avoiding dead space and unnecessary crannies that are difficult to clean.
- 17** Think about finishing touches. Consider the materials you use to close cardboard boxes. If tape is necessary, use a recyclable one such as kraft paper tape, or reduce the tape width. Staples can often tear the packaging at customer reception, preventing its re-use.
- H** **18** Could you improve filling procedures? Carry out tests to find the optimum balance between filling rates, loss of contents and loss of packaging.
- 19** If you use cans, consider the best material. Steel cans contain up to 25% of recycled steel. Steel is magnetic and, unlike other packaging, can be recovered easily at any stage of the waste stream. Aluminium cans have a high strength to weight ratio, offering considerable savings, eg in transport costs.
- 20** Add protection to your packaging, to make it last longer and encourage re-use. Use stronger materials, such as plastic or metal, along the vulnerable edges and corners of cardboard boxes to increase their life expectancy and re-use, and improve their stackability for transport. Make sure packages are not banded so tightly that they become damaged.
- If you use drums...**
- 21** It pays to invest in recyclable drums. Drums manufactured from steel less than 1 mm thick are not suitable for reprocessing. Although drums greater than 1 mm thick are generally more expensive, they have a higher resale value and can be used several times, thus minimising waste.

Square 100-litre, open-top plastic drums are available. These save on storage space and fit perfectly on standard pallets for safe handling and transportation.

22 Use plastic liners if you can. Plastic liners reduce the risk of damage to a drum. Often, liners are easier to clean and, even if disposed of more frequently, are cheaper than drums. See Case History (CH64) (available free of charge through the Environment and Energy Helpline) for an example of successful liner use.

23 Consider alternatives to steel drums. Plastic drums are lighter, rust-free and resistant to attack by many chemicals and solvents.

C/S 24 Consider intermediate bulk containers. IBCs are large, cubic alternatives to drums, which are easily stacked and well-protected from damage during transportation. For large volumes, they also add significant economies of scale.

Guinness Packaging, Runcorn, swapped glue pails for IBCs and cut plastic polyethylene use by 1.5 tonnes/year. The change also allowed the Company to bulk-buy glue, saving £13 000/year, and reduced waste glue (previously left in pails), saving a further £7 500/year.

25 Does size matter? Some drums that are damaged at the rim only, can be cut down to produce a good quality drum for smaller volumes. Could you or your customers use reduced volume drums instead of standard sizes?

C/S 26 Maximise packaging usage when filling UN-certified drums. Pira (see Appendix 2 for details) states that a drum may not be suitable under 80% brimful, unless the product foams excessively.

If you use pallets...

C/S 27 Do you really need to use pallets? Consider alternatives. Slip sheets or corrugated trays can be used where lighter loads are involved, and offer a cost saving of around 75%. They can be handled easily using a special type of fork-lift attachment called a push-pull unit.

A bottle supplier delivers empty plastic bottles to factories in collapsible corrugated trays that can be used for about four trips. Re-using trays has provided savings of around £900 000 for one of the supplier's large customers.

C/S 28 Consider weight issues. Consider using one-trip cardboard corrugated pallets for export to reduce packaging costs. There are added benefits of weight reduction in air freight.

H 29 Make the best use of pallets. Do the dimensions of your primary and secondary packaging fit the pallet dimensions?

C/S 30 Use standard pallets. Using standard ISO or EURO pallets will ensure that you and your customers can use the pallets more efficiently. These pallets are also more economical to refurbish.

31 Don't neglect pallet design and associated packaging. Poorly designed pallets can damage product.

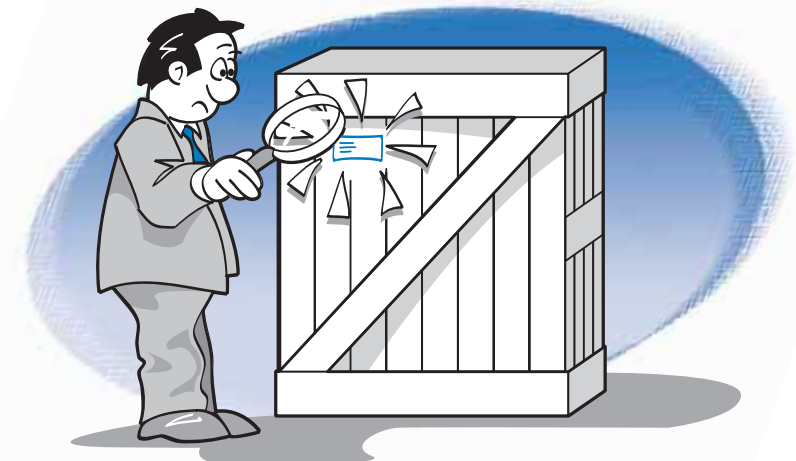
Pontrilas Group Packaging, based in Llangennech, established that foam was more effective in preventing products sliding than a central wooden peg. In addition, using pegs had damaged product and the pallet itself.

Check the level of information you give to those you supply

Providing your customers with information regarding your packaging and its materials will help them to handle, re-use and recycle the materials. Recent legislation requires you to pass on packaging materials information - the cost to your company for non-compliance could be high. Contact the Environment and Energy Helpline to find out what you need to do.

32 Communicate all relevant information. Packaging should contain all relevant information, including clear instructions for use.

33 Keep information simple. Instructions and graphics should be easily read and must remain legible throughout the life of the pack.



H 34 **Take care with labelling.** Try to write directly onto plastic wrappings instead of using paper stickers, as some plastic reprocessors will not accept plastics contaminated with paper. Many plastics can be embossed with an appropriate symbol, eliminating the need for a separate label.

35 **Be careful over environmental claims.** You must be able to substantiate any environmental claims. All claims should be consistent with the Government's Green Claims Code (contact the Environment and Energy Helpline for details).

36 **Let your customers know what materials you have used.** Materials should be identified and clearly marked on the packaging to help segregation, re-use and recycling.

37 **Pass on re-use information.** Introduce methods for keeping your customers up-to-date with packaging re-use opportunities. For example, one company, specialising in recovering waste plastics and other materials for re-use, is encouraging packaging suppliers to attach a label to packaging that includes its company logo and a message regarding the use of the packaging to reduce the impact on the environment.

38 **What about waste exchange?** One company's waste may well be another company's raw material. Let your customers know of any relevant waste exchange schemes. The Environment and Energy Helpline will be able to provide you with further information.

Consider transport issues

Many costs relating to the use of packaging materials for a product are hidden. The cost to transport a product to a customer or the next person in the packaging chain is generally hidden and can easily be overlooked. The following tips will help you to minimise transport costs.

39 **Remember that transport costs!** When calculating overall packaging costs for handling, remember to consider the number of packaged items per unit area of the vehicle as well as the direct delivery and fuel costs. Reducing your excess packaging may allow you to increase the number of items. For an example of achievable savings, see New Practice Case Study (NC148) *Cut Waste at All Levels*, available free of charge through the Environment and Energy Helpline.

C/S 40 **Co-ordinate transportation and collection.** Make it policy to collect empty containers at the same time as delivering full ones. If your company has its own in-house transport fleet, try to ensure that vehicles never return empty to your site.



C/S 41 **Work with your customers.** Discuss with your customers the feasibility of them collecting any empty containers for return, to speed up the collection process. Such an arrangement could form an integral part of future contracts and be introduced as company policy.

C/S 42 **Introduce a tracking system.** Wherever possible, introduce a tracking system for individual containers. Methods include standard and two-dimensional bar codes, magnetic memory chips and tags, and distance-readable tags that use radio frequency or microwaves. For more information see ET186 *Using Tagging for More Cost-effective Manufacture and Supply*, available free of charge through the Environment and Energy Helpline on 0800 585794.

- 43** Does your transport policy involve storage of packaging waste or empty containers? Arrange collections and deliveries to minimise the amount of storage needed. Always **include the cost for storage of waste or empties on site**, particularly in expensive warehouse space, in your packaging waste cost calculations.

Packaging reception

Look at what you receive

If you receive packaging material, these tips will help you to reduce costs by re-using supplier packaging and minimising the amount of virgin packaging material you receive.

- C/S 44** **Assess the need for the packaging arriving at your site.** If you can see where packaging could be eliminated or reduced, discuss it with your suppliers. Any changes will benefit both supplier and customer.

Burton's Biscuits reduced the amount of shrink-wrap sent to landfill by two skip loads a year, through discussions with a supplier and subsequent elimination of shrink-wrap around received goods (see Appendix 3).

- C/S 45** **Assess packaging use.** Are **packs arriving at your site optimally filled?** For example, could headspace in boxes be reduced? Do you think alternative, recycled materials could be used? If you have any ideas, discuss the feasibility of redesigning packaging with your supplier.

Discussions with its customers led Whatman International Ltd to introduce an on-line banding machine, which has reduced its use of shrink-wrap for packaging by 50% and realised savings of £12 000/year. Now 2.5 cm banding is used to hold five product units together, reducing shrink-wrap use by 5 tonnes/year.

- H 46** **Check containers for transit damage.** Ensure that packaging arriving at your site **is not damaged.** If it is, contact your supplier to discuss transport arrangements and handling procedures to minimise its incidence in future.

- H 47** **Remove packaging carefully.** Opening packages carelessly can cause significant damage to potentially re-usable packaging cases.



- C/S 48** **Assess the ease of unpacking.** You should be able to remove the packaged contents easily, ensuring minimum damage. If problems occur, consider options for redesign and discuss ideas with your supplier.

- H 49** **Make sure your procedures work.** **Unpacking procedures need to be clear,** well-defined and documented. Where possible, incorporate them into existing management procedures.

- 50** **Keep staff informed.** All staff need to be aware of the cost of damage to transit packaging, either through internal bulletins, meetings or posters on notice-boards.

- 51** **Encourage on-going action.** Keep staff up to date on any improvements made, to encourage further care and action. Publicise actual costs and cost savings - percentage savings mean very little to most staff.

52 Keep records of what you receive. Reception is an excellent place to monitor and co-ordinate the **effective management of packaging materials arriving on-site.** For companies obligated under the Producer Responsibility Obligations (Packaging Waste) Regulations, it is a legal requirement to keep such data for four years.

53 Keep records on packaging re-use. Monitor how much of the packaging arriving at your site is being re-used and how much is being sent for disposal. Companies obligated under the Producer Responsibility Obligations (Packaging Waste) Regulations need to demonstrate the re-use of exempt materials.

54 Segregate waste. Tips 84 - 94 contain advice for segregating waste.

Packaging handling

Good practice on-site

Bad handling practices and/or design faults are responsible for much of the packaging waste arising at a site. If you handle packaging at your site, these tips will help you to minimise the damage caused to packaging, packaging use and waste packaging disposal costs.

55 Log recurrent faults and discuss them with your supplier. A design fault may be causing common problems at many of its customers' sites.

H 56 Re-use packaging to transfer items around your site. Re-usable plastic containers or boxes can be used to transport products or components from one part of the site to another.

57 Keep records on packaging re-use. Monitor the number of times packaging material is used to transport items around the site.

58 Set targets for improving re-use. Can you set a higher target for the frequency of re-use? If the frequency of re-use decreases, investigate why and take appropriate action.

H 59 Protect perishable packaging. Some items of packaging, particularly cardboard, are prone to damage in damp conditions. In such environments, store packaging materials on easily accessible shelves and cover them with plastic wherever necessary.

H 60 Reduce on-site damage. Fork-lift trucks can cause a lot of damage to transit packaging, particularly timber pallets, drums and re-usable cardboard containers. Fit trucks with the most appropriate equipment (such as plates or rubber-tipped tines) to minimise damage during storage and use.

Pontrilas Group Packaging, based in Llangennech, manufactures timber and steel pallets and skids. The introduction of a new design for tinplate skids (single-face pallets) has saved the Company £4500/year through preventing damage by fork-lift trucks. Customers have reduced their refurbishment and disposal costs.

If you use drums...

H 61 Observe manufacturer's specifications when hot filling drums. Don't fill drums with liquids above manufacturer's specifications, eg high-density polyethylene (HDPE) drums will melt at temperatures above 124°C.

H 62 Allow drum contents to cool before closing. After filling HDPE drums, leave the lid off or bung out to allow the contents to cool and prevent panelling.

H 63 Don't stack hot drums. To prevent distortion, which may lead to stacking failures later on, avoid stacking drums while hot.

64 Check chemical compatibility. Some chemicals are incompatible with polyethylene at elevated temperatures. Follow manufacturer's specifications.

H 65 Fill drums carefully. When filling drums, sit them on a flat surface, preferably a close-boarded pallet, to facilitate easy movement, minimise risk to the environment and reduce spillages.

66 Don't under-fill drums. Under-filling of drums may reduce the overall height to which they may be stacked. Confirm design-fill criteria with the drum manufacturer.

H 67 Set up handling procedures to minimise drum damage. When lifting drums by fork-lift truck, lift by either the base or the centre. Do not lift underneath the top rim as this can damage the drum and is dangerous. Large dents at the top and bottom of a drum can cause problems during refurbishment, hence such drums have to be scrapped. Ensure handling procedures are followed to aid drum reprocessing.

68 Re-use drums on site. Damaged drums may not be acceptable to customers, but may be suitable for storage or transportation of non-hazardous materials around a site.

- H 69** **Take care when stacking full drums.** Ensure correct stacking of drums, to minimise leakage and environmental risk.
- H 70** **Take care when stacking empty drums.** Stack drums no more than three high. To prevent drum damage, stack the bottom drum the right way up, the next one upside down and the top drum the right way up.
- H 71** **Segregate drums before stacking.** Never put dissimilar drums in the same stack, ie don't mix designs and material types.



...segregate drums
before stacking

- H 72** **Be careful when storing drums on pallets.** Use only good quality pallets, preferably close-boarded types, free from broken boards, nails and other protrusions.
- H 73** **Ensure storage is stable.** To ensure stability and minimise spillage and pollution risks, make sure that drums or containers do not overhang the edge of the pallet or storage shelf.
- H 74** **Tilt-roll drums.** Rolling drums on their side damages the rims and paintwork, and causes dents which increase the likelihood of rust. It is recommended that drums are tilt-rolled on the rim to prolong drum life.
- H 75** **Use drum dollies.** Drum dollies are small, round, wheeled trolleys, which can be used for manoeuvring drums around a site. Some types incorporate anti-spill designs to minimise risk.

Blagden Packaging, UK, places staff permanently on its major customers' sites to ensure correct handling procedures are followed, thereby minimising costs to the customer and damage to the drums.

If you use pallets...

- H 76** **Observe design loads.** To minimise damage to timber pallets, don't use them to support more than their design load (typically 5 tonnes).
- H 77** **Don't chain load more than one timber pallet.** If more than one timber pallet is lifted using chains and lifting machinery, it can result in flexing and splitting of the hardwood runners.
- H 78** **Know your economies of repair.** It is no longer economic to repair timber pallets if their hardwood runners are damaged through bad handling. Avoid such damage.
- H 79** **Don't over-stack steel skids (pallets).** Don't stack steel skids more than two high, as buckling can occur during lifting.

Discuss handling procedures with your customers and staff

Damage to packaging materials very often occurs as a result of poor communication between various packaging 'handlers'. All parties involved in the handling of packaging materials need to be aware of correct or new handling procedures.

C/S 80 **Discuss your handling options.** Establish effective communication between departments and with suppliers to help disseminate information relating to handling techniques. These communication links will also encourage suggestions for improvements.

H

81 **Consider all suggestions.** Operators and shop-floor staff know about recurrent problems, particularly those related to specific processes and housekeeping practices. They will also be the first to spot changes in waste levels. Make sure everyone has the opportunity to discuss areas of concern and encourage suggestions for improvements. If you can, operate a suggestion scheme, preferably with a reward attached.

82 **Focus on problem areas first.** Aim to minimise packaging waste on particular process lines or in known problem areas, rather than trying to cover the entire site at once. Initiatives can be applied to other areas in stages.

Packaging re-use, recycling and disposal

Recent amendments to the Government's National Waste Strategy place the emphasis on eliminating packaging waste wherever possible or minimising waste through re-use. The following tips will help you to minimise your costs for packaging materials and waste disposal.

83 **Always follow manufacturer's instructions for re-using, recycling, storing or disposing of packaging.** If you don't have enough information, contact your suppliers.

Segregate waste

Segregation of packaging waste can reduce disposal costs significantly and can also provide a form of revenue if waste is sold or used against the purchase of Packaging Recovery Notes (PRNs). The following tips will help you to implement or improve packaging waste segregation at your site.

C/S 84 **Ask if you need more information.** If the packaging you receive is not already **marked with the material content**, ask your suppliers if they can add this information to help you sort the packaging easily.

H 85 **Segregate waste at source.** Remove as much of the packaging as possible on delivery and **segregate it at once**.

86 **Sort waste according to type, grade and colour.** This will help you to identify re-use and recycling opportunities.

H 87 **Communicate your ideas and encourage action!** Ensure that all staff are aware of the importance of effectively segregating the packaging materials arriving on site.

H 88 **Involve all staff in segregation activities.** Encourage all staff from the shop floor to initiate segregation of packaging waste arriving at the site. *Remember - schemes only work efficiently if all parties involved agree on the task.* Let them know how well they're doing.

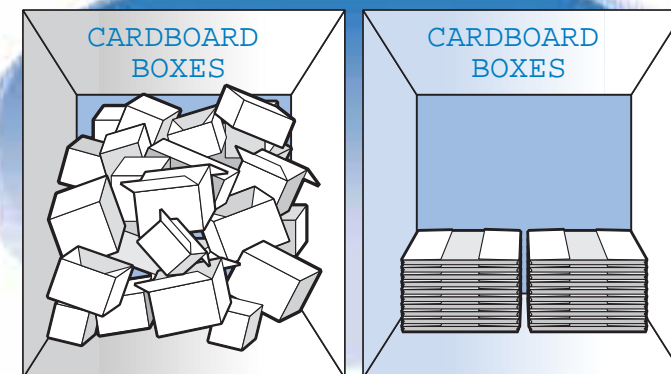
89 **Can you use in-house waste minimisation to discharge your obligation?** Minimising, re-using or recycling in-house process waste and packaging 'off-cuts' is always recommended. However, the raw material savings made cannot be used to off-set your packaging obligations under the regulations.

C/S 90 **Don't mix packaging waste.** Mixed packaging waste has a lower value for recycling. Where possible, sort and bale/compact wastes for recycling by type.

Burton's Biscuits estimated potential savings of £10 000/year through waste minimisation measures such as improved segregation of cardboard at source. This was achieved initially through the use of on-site waste contractors, and then expanded to incorporate process operators at the site (see Appendix 3).

H 91 **Get the maximum revenue from your waste.** Segregate higher value packaging materials and then re-use, recycle or return these as a priority.

92 **Maximise use of storage space.** **Flatten damaged or unusable cardboard boxes** for waste storage, so that they take up the minimum space. Similarly, squash any other containers not for re-use.



H 93 Use colour-coding or tagging for waste types. Skips or storage areas used for the segregation of packaging waste can be colour-coded or labelled to help ensure wastes are segregated and not mixed.

H 94 Monitor the effectiveness of your waste segregation at source. Regular monitoring will allow you to tackle any problems as they arise and will provide you with useful data on waste types and quantities. Feed back the findings, through notice-boards, bulletins, etc to let staff know how well they're doing.

Can it be re-used?

95 Can your packaging waste be re-used by others? Where packaging materials are not of use to your company around the site, consider waste exchange schemes. The Environment and Energy Helpline can provide you with information on schemes in your area.

96 Can some other organisation use your waste? You may be able to donate your waste, particularly cardboard and paper, to schools, scout groups, theatres, etc, or give it to a not-for-profit scrap store.

97 Waste for recycling must be clean. Follow instructions from your supplier and the company you use to recover or recycle your packaging materials.

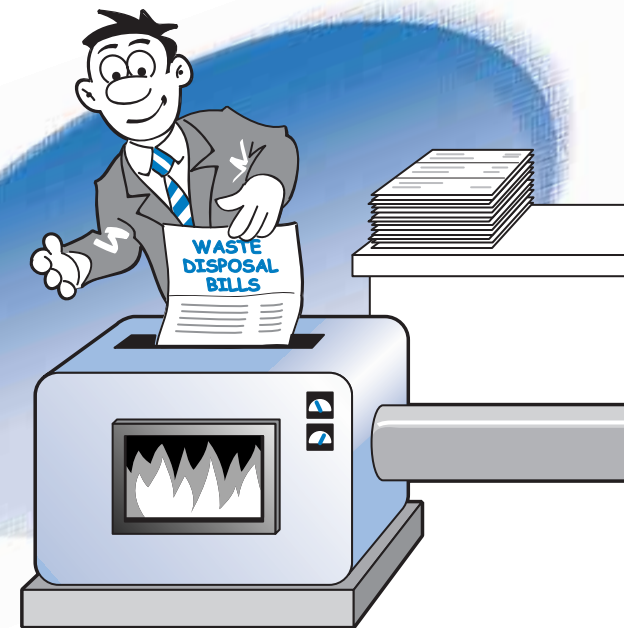
98 Look for alternative outlets for contaminated materials. Low-density polyethylene film (contaminated with paper labels), polypropylene and high-density polyethylene can be converted into profiles to replace hardwood products. Contaminated glass can sometimes be used for relining furnaces when made into a specialist product.

99 Do you have large quantities of higher value plastic waste? If so, it may pay you to purchase or hire a plastics granulator. Granulated plastic generally has a higher value than bagged plastic.

Yuasa Battery (UK) Ltd in Ebbw Vale dispatches granulated plastic to a reprocessor that transforms it to re-pelletised plastic which Yuasa can use for non-critical parts. This arrangement has provided Yuasa with annual savings of £30 000.

100 Consider energy recovery and materials recycling. Energy recovery and materials recycling are alternative methods for packaging recovery and diversion of materials from landfill.

101 Could you use the energy from your waste? Most packaging waste, particularly plastic packaging, has a high calorific value. If you produce sufficient waste, it may be viable to install an energy-from-waste incinerator or a combined heat and power unit. Don't forget that if other sites in your company or area use the plant its viability will improve. If you are interested in this approach, you should talk to a specialist consultant that can make an assessment for you and let you know about financial support and environmental regulations. Further help is also available through the Environment and Energy Helpline.



102 Consider lining cardboard boxes or containers with thick polythene to store waste materials. This minimises the use and disposal of bags and the container can be re-used or returned to the supplier.

103 Take extra care with perishable packaging materials. If you plan to re-use or recycle perishable packaging, make sure that you follow storage instructions carefully.

104 Steel cans are 100% recyclable. Check if your local authority/contractor recovers steel cans from mixed waste, or (preferably) if separate collection is available.

105 Minimise the volume of waste to minimise costs. Squash any containers not being re-used. Flatten cardboard boxes for storage or disposal. Compact general waste and, wherever possible, waste for recovery or recycling. It may pay you to buy or hire a baler, compactor or drum crusher.

106 Waste disposal should be your last resort. If you need to dispose of packaging materials, take all possible steps to minimise the volumes and costs involved.

A contract packaging company for UK food companies investigated all aspects of its packaging, including waste disposal. Through careful segregation of its general waste and replacement of the large skip with three smaller ones - for cardboard, plastic and general waste - the waste removal costs fell by 45%. The company is now recovering around 30% of its packaging.

107 Shop around for the best waste disposal deal. Waste removal costs can vary greatly between waste management companies. Some companies offer waste minimisation services, so shop around.

108 Can you get free waste removal? Some cardboard and paper waste merchants offer a free collection service, which will help reduce your general waste disposal costs.

109 Look at alternative ways for bale production. If suitable, use plastic or metal strapping materials to bale cardboard or general waste instead of costly plastic bags or shrink-wrap.

110 Choose skips wisely. Your waste management company may be able to supply alternative skip types, such as front-end loader units, that can be emptied instead of being removed, saving you money.

111 Get the most out of your skips. If you have several skips on site, make sure people know which are in use. Otherwise, all skips will get partly-filled and none will be full on collection day.

If you use drums...

112 Encourage good drum handling. This will maximise drum re-use and recycling.

Blagden Packaging, UK, has introduced a Drum Acceptance Policy for customers. This ensures that drums are correctly handled, emptied and stored for recycling purposes. Many customers have been able to recycle more drums through their adherence to Blagden's Drum Acceptance Policy.

H 113 Reduce residual waste in your drums. Introduce simple, but effective, drum tilting and evacuation mechanisms to maximise emptying.

Rolls-Royce plc has reduced oil waste and saved £5 000/year at the Bristol Test Facility by using simple drum tilting mechanisms and extending pump suction hoses when pumping engine oil to its engines.

H 114 Close or stopper empty drums. Don't push the bung into the bottom of the drum, as this makes refurbishment difficult and costly.

115 Consider drum heating. Drums containing highly viscous materials are easier to empty if you use individual drum heaters. Trials have shown that 2 - 5 kg of materials may be left in unheated drums. *Exercise caution if working with flammable liquids.*

116 Keep labels on used or empty drums. The label provides vital information for the refurbisher or recycler on the nature of any residual substance in the drum.

117 Don't refill drums with different substances. Putting substances other than the original product in empty drums may be dangerous to drum handlers and lead to environmental problems during refurbishment.

H 118 Decontaminate toxic residue. Ensure adequate decontamination of drums that have contained toxic products by drying, venting, rinsing or chemical passivation techniques.

119 Be careful if you re-use plastic drums. Only L-Ring and XL-Ring HDPE drums taken from the second-hand market are of sufficient quality to permit re-use for dangerous goods.

Share ideas with others...

120 Do you belong to a waste minimisation club? Consider joining one of these clubs in your locality. They can be a good source of information and ideas on how to minimise waste, including packaging waste. Contact the Environment and Energy Helpline to see where the nearest club is to you.

Conclusion

It is possible to significantly reduce your packaging costs and cut your waste levels by implementing relatively simple measures, many with low or no associated cost.

Taking action to improve your packaging management will help your company to:

- increase overall profitability;
- increase staff awareness of environmental and cost-saving issues;
- develop closer relationships with suppliers and customers through shared benefits and cost savings;
- reduce its use of finite resources;
- reduce the volume of waste going to landfill;
- reduce the chance of product damage;
- enhance environmental performance;
- promote a better company image;
- meet current or future obligations under the packaging waste regulations, at the least possible cost.

You can build the tips in this Guide into a more systematic approach to waste minimisation. For further practical guidance on how to do this, see Good Practice Guide (GG140) *Cutting Costs and Waste by Reducing Packaging Use*. You may also find it useful to read Good Practice Guide (GG141) *Choosing and Managing Re-usable Transit Packaging*, which will help you to maximise re-use of your packaging. For a free copy of these Guides, contact the Environment and Energy Helpline.

Taking action today could give you the edge over your competitors. You can nearly always improve an existing system. The cost of implementing any packaging changes that reduce packaging use and waste is likely to pay you back many times over.

Appendices

Appendix 1

Products and product accessories that you could minimise

There are many types of products and product accessories you could minimise to generate cost savings and environmental benefits, including:

- Screw-topped bottles
- Envelopes (containing a product or unsolicited mail)
- Sacks, bags or sachets
- Kraft paper tape
- Containers, boxes, cartons and crates
- Drums and intermediate bulk containers
- Non-biodegradable flowerpots
- Layer pads or padding
- Photographic/video film covers
- Separators, dividers or interleaves
- Glue containers
- Non-hazardous process chemical containers
- Fillings, including crumpled paper, polystyrene chips and air bags
- Wrapping materials
- Unsolicited advertising materials
- Clothing hangers
- Cards
- Pallets, trays or slip sheets
- Cores, reels or tubes
- Top frames
- Edge protectors
- Seedling and bedding trays
- Oxygen absorbers or silica gel
- Air-tight sealing films including shrink and stretch-wrap
- Separable lids or caps
- Seals
- Strapping
- Pins
- Adhesive tapes
- Clips and staples
- Rubber bands
- Ribbons
- Labels or wing tickets
- String, thread or twine
- Inks
- Disposable trays, plates, dishes etc

Appendix 2 Useful contacts

TYPE OF SERVICE

Contact details, up-to-date regulatory advice, details of compliance schemes and waste exchange schemes in your area, environmental advice, publications and support

Regulatory advice

ORGANISATION

Environment and Energy Helpline
0800 585794

Environment Agency
Rio House,
Waterside Drive,
Aztec West,
Almondsbury,
Bristol BS12 4UD
Tel: 0645 333111

Scottish Environment Protection
Agency (SEPA)
Erskine Court,
Castle Business Park,
Stirling FK9 4TR
Tel: 01786 457700
Fax: 01786 446885

Department of the Environment
(Northern Ireland)
Environment and Heritage Service,
Calvert House,
Castle Place,
Belfast BT1 1FY
Tel: 012890 254754
Fax: 012890 254700

Advice on packaging waste regulations

Regulatory/safety advice

Advice on all aspects of packaging

Advice on all aspects of paper/board packaging Laboratory services

Advice on cardboard packaging

Department of the Environment,
Transport and the Regions (DETR)
Packaging Unit,
Room 6/F8,
Ashdown House,
123 Victoria Street,
London SW1E 6DE
Tel: (020) 7944 6622
Fax: (020) 7944 6589

Health and Safety Executive (HSE)
Information Centre,
Broad Lane,
Sheffield S3 7HQ
Tel: 0114 289 2345
Fax: 0114 289 2333

The Industry Council for Packaging
and the Environment (INCPEN)
Tenterden House,
3 Tenterden Street,
London W1R 9AH
Tel: (020) 7409 0949
Fax: (020) 7409 0161
e-mail: info@incpen.org

Pira International
Randalls Road,
Leatherhead,
Surrey KT22 7RU
Tel: 01372 802000
Fax: 01372 802238

Corrugated Packaging Association
2 Saxon Court,
Freeschool Street,
Northampton NN1 1ST
Tel: 01604 621002
Fax: 01604 620636

Advice on plastic packaging

The British Plastics Federation (BPF)
 6 Bath Place,
 Rivington Street,
 London EC2A 3JE
 Tel: (020) 7457 5000
 Fax: (020) 7457 5045

Advice on wooden packaging

Timber Packaging and Pallet
 Confederation (TIMCON)
 Heath Street,
 Tamworth,
 Staffordshire B79 7JH
 Tel: 01827 52337
 Fax: 01827 310827

Advice on drums and IBCs

The Association of Drum
 Manufacturers
 c/o Van Leer (UK) Limited,
 Merseyside Works,
 Ellesmere Port,
 South Wirral L65 4EZ
 Tel: 0151 355 3644
 Fax: 0151 355 8187

*Advice on packaging
 and distribution*

Institute of Grocery Distribution
 Letchmore Heath,
 Watford,
 Hertfordshire WD2 8DQ
 Tel: 01923 857141
 Fax: 01923 852531

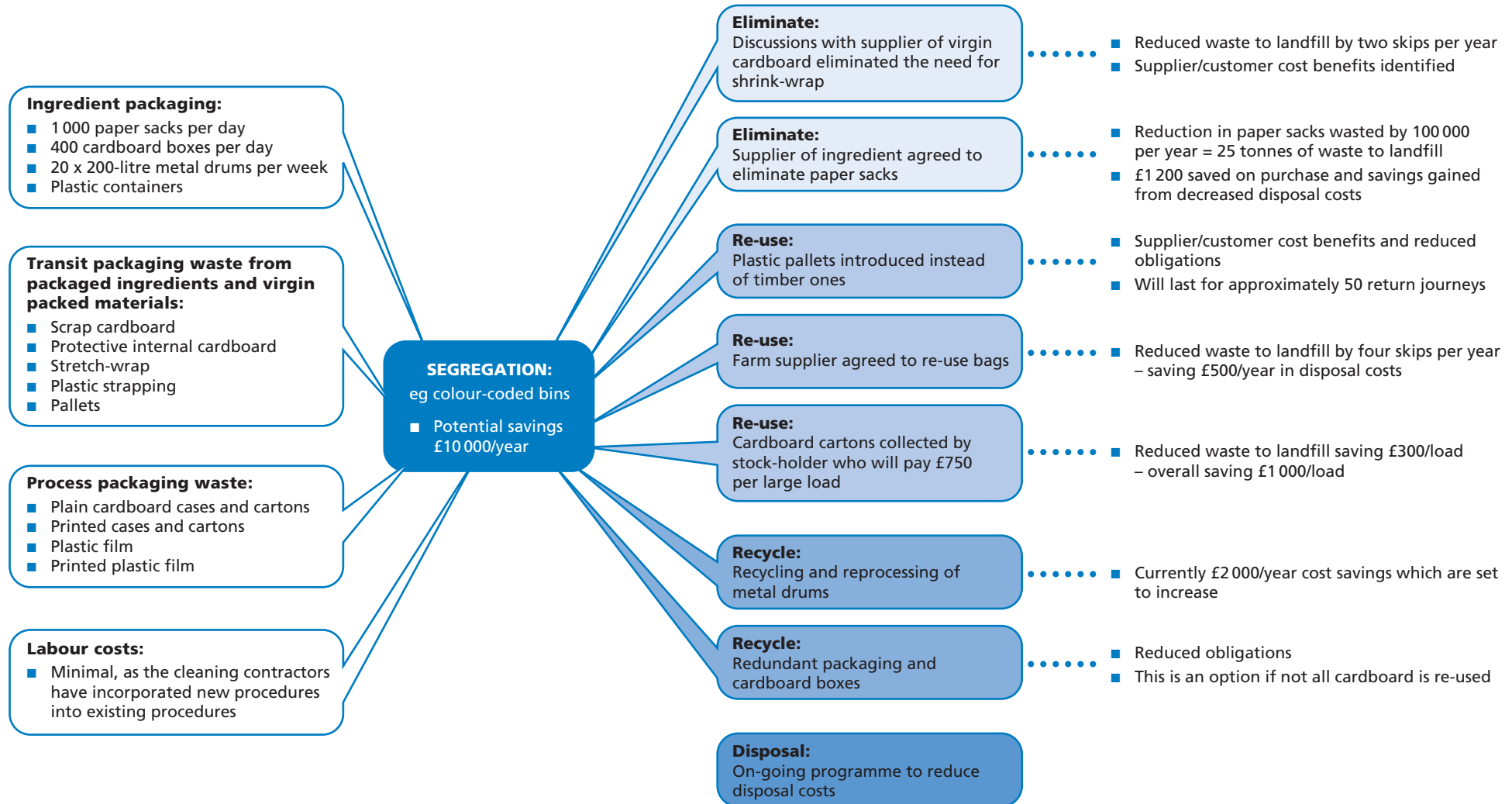
Appendix 3 Minimising waste at source - an Industry Example

Burton's Biscuits currently employs over 1 000 staff at its Llantarnam site and manufactures over 1 200 tonnes of biscuits and snack products for retail each week, making it one of the largest biscuit production sites in Europe.

The Company participated in the SABINA (SustainAble Business IN Action) Waste Minimisation Project for the Severn Estuary area, funded by the National Assembly for Wales, Government Office for the South West and the Environment Agency. Through development of supplier initiatives, the Company identified opportunities for shared savings and rationalisation of packaging, the latter reducing obligations under the packaging regulations. Many options for minimising packaging and packaging waste were considered, but the key issue relating to the implementation of its waste minimisation programme involved the identification of the types and volumes of packaging waste generated at the site. The Company initiated a waste segregation programme that helped it to identify potential cost savings of some £10 000/year.

Fig 1 illustrates how cost savings were achieved at Burton's Biscuits following implementation of waste segregation at the site. It also shows how the Company followed the waste hierarchy, concentrating efforts on eliminating and re-using waste to maximise financial and environmental benefits.

Fig 1 Packaging and packaging waste cost savings achieved through the implementation of waste minimisation at Burton's Biscuits, Llantarnam



The Environmental Technology Best Practice Programme is a Government programme managed by AEA Technology plc.

The Programme offers free advice and information for UK businesses and promotes environmental practices that:

- **increase profits for UK industry and commerce;**
- **reduce waste and pollution at source.**

To find out more about the Programme please call the Environment and Energy Helpline on freephone 0800 585794. As well as giving information about the Programme, the Helpline has access to a wide range of environmental information. It offers free advice to UK businesses on technical matters, environmental legislation, conferences and promotional seminars. For smaller companies, a free counselling service may be offered at the discretion of the Helpline Manager.

FOR FURTHER INFORMATION, PLEASE CONTACT
THE ENVIRONMENT AND ENERGY HELPLINE

0800 585794

world wide web: <http://www.etbpp.gov.uk>
e-mail address: etbppenvhelp@aeat.co.uk

