

REPORT on

PACKAGING SUPPLY CHAIN
(PACKAGING PREVENTION)

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Background

This report was commissioned by Repak Ltd, in association with the Packaging Prevention Steering Group, as part of the Packaging Prevention Programme 2007.

The Packaging Prevention Steering Group is a sub-group of the National Strategy Group on Packaging Waste Recycling (NSGPRW) which was established by the Minister for Environment, Heritage and Local Government in 2004 to develop a strategic framework and programme for the period 2006 – 2011 to ensure that Ireland will meet the higher recycling targets set for 2011, under EU Directives on Packaging Waste. The NSGPRW is a partnership with all key stakeholders working together to ensure that Ireland's objectives are achieved.

Repak acknowledges the contribution of the Environmental Protection Agency (EPA) both to the work of the Packaging Prevention Programme and the commissioning of this report.

*Repak Ltd
February 2008*

REPAK PACKAGING SUPPLY CHAIN (PACKAGING PREVENTION)

PART I: INTRODUCTION, CONCLUSIONS AND RECOMMENDATIONS

1. INTRODUCTION

Ireland has made excellent progress in recycling its packaging, and all packaging recycling targets set by the EU have been achieved so far. However, the challenge to recycle packaging increases each year, as the amount of packaging placed on the national market also increases. To shift the emphasis to prevention the Department of Environment, Heritage and Local Government, the EPA and Repak have launched a new Packaging Prevention Programme to work with Irish business to help reduce the amount of packaging placed on the Irish market

As part of this programme Perchards were engaged to identify and study a number of product supply chains with a view to identifying and understanding the packaging, and packaging design, decision-making process. The project involved choosing a number of common products, and working back through the supply chain to study the factors and dynamics of packaging design and purchasing decisions, including who makes decisions, for what reasons and in accordance with what requirements. Finally, we were asked to consider whether these decisions could be changed and if there are barriers to such changes.

Article 24 of the Waste Management (Packaging) Regulations 2003 already stipulates that a producer shall not supply packaging or packaged products to other persons within the State unless the packaging concerned complies with the eco-design criteria (the so-called 'Essential Requirements') set out in the Third Schedule to the Regulations. The Third Schedule states, among other things, that "*packaging shall be so manufactured that the packaging volume and weight be limited to the minimum adequate amount to maintain the necessary level of safety, hygiene and acceptance for the packed product to the consumer.*" This is an EU requirement taken from Directive 94/62/EC on packaging and packaging waste, but up to now it has not been enforced in Ireland (or indeed in most other EU member states).

2. CONCLUSIONS AND RECOMMENDATIONS

2.1 *Current prevention activities and the scope for more*

Packaging prevention is not new; minimisation has been pursued for many years, driven primarily by cost. Reducing the amount of packaging used reduces procurement costs, and insofar as it results in lighter and more compact SKUs, it also leads to lower fuel consumption and fewer vehicle movements.

However, some companies look for minimisation opportunities more systematically than others. Packaging converters by and large recognise that innovation is vital if they are to remain competitive, but whereas some packaged goods producers simply take what their suppliers offer, others are much more proactive in investigating the potential for design changes and pushing them through to implementation.

It is the total packaging system that protects the contents – the primary packaging which goes to the final end-user, any secondary packaging used (multipacks and shelf-ready packaging, for example), and transport packaging such as corrugated boxes, plastic crates and wooden pallets. Companies looking at these in isolation may over-protect their products.

Over-packaging is better than under-packaging, so companies without the resources or expertise to maintain systematic controls are more likely to settle for the former:

- Over-packaging by 10% means that 10% of the resources needed to produce the packaging are wasted, and extra fuel will be needed to distribute it.
- Under-packaging that results in the product being spoilt or damaged wastes 100% of the resources used to produce both the contents and its packaging, and all of the fuel used to distribute it.

Typically, ten times as much energy and materials are locked up in household goods and food than in the packaging around them.¹ More importantly for the packaging goods producer, packaging failure can result in a big financial loss – the customer may reject the entire consignment and take his future business elsewhere.

Weighed against this risk, packaging goods producers have to go about packaging prevention cautiously. Large companies have the resources to carry out the necessary investigations, and a single act of minimisation may mean huge savings across Europe and even beyond. Smaller companies, even if they are willing to devote resources to minimisation, will not enjoy the same returns from their investment. And some companies may simply decide that this is not a priority.

Our findings suggest that

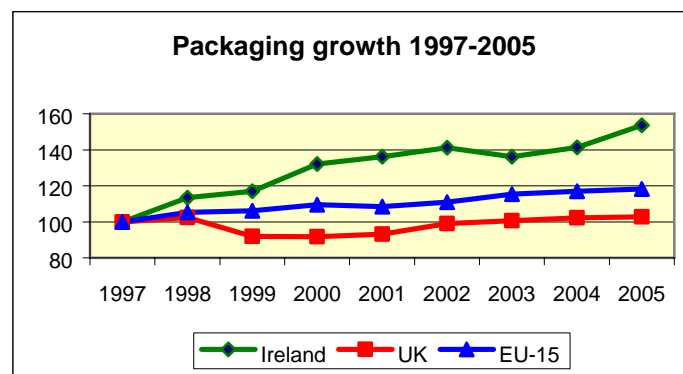
- The packaging minimisation activities of international companies and other suppliers outside Ireland are having a positive impact on the Irish market, and that this would happen whether or not any new prevention initiatives are taken within the ROI.
- The minimisation activities of the larger Irish producers are also having some impact, partly because they too can enjoy some economies of scale and also because they are

¹ J M Kooijman (2000), *Environmental impact of packaging – performance in the household*.

exporting to markets such as the UK where packaging prevention has been much more of a public policy issue than it has in Ireland.²

- Companies serving the Irish market alone have had less motivation to look for packaging minimisation opportunities systematically and may lack the resources to do so.

Repak estimates that some 70%-80% of the packaged goods sold in Ireland are imported. Since most comes from the UK, it is surprising that the two countries' packaging growth rates have apparently diverged so much. According to the data submitted to Brussels by the EU member states,³ the amount of packaging placed on the Irish market grew much more rapidly between 1997 and 2005 than the EU-15 average. Packaging consumption in EU-15 grew by 18% from 59.8 million tonnes to 70.8 million tonnes; Ireland's grew by 54% from 602,000 tonnes to 925,000 tonnes while the UK has reported only 3% growth, from 10.0 to 10.3 million tonnes over the period.



This discrepancy may in part be due to methodological issues – the dip in the UK figures suggests that there was some double-counting in the first two years, before the data collection system settled down – but whatever baseline year is chosen, the UK's packaging growth rate is flatter.

There are three factors that might explain this:

- rising prosperity in Ireland increasing the sales of packaged goods by much more than the European average;
- a relative lack of interest in packaging minimisation, since Ireland, unlike the UK, has not sought to enforce the Essential Requirements;⁴
- the small scale of Irish companies with little or no export trade.

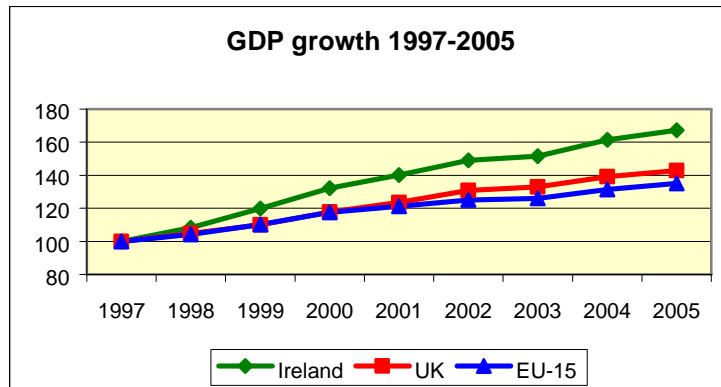
² This is changing. At the 2007 Repak Recycling Awards Gala Dinner, the Environment Minister said that Irish industry had been taking steps to reduce packaging but many of these efforts were not visible to the consumer. The UK's Courtauld Commitment, a voluntary agreement under which the major retail chains have pledged to reduce their packaging, pointed the way forward, he added. "Consumers want to see evidence when they are shopping that the store and the manufacturer are as concerned about recycling and waste prevention as they are. Tonight I am challenging Irish industry – if it can be done in the UK, why not here?" Discussions are now underway on a similar agreement for Ireland.

³ Published at <http://ec.europa.eu/environment/waste/packaging/data.htm>.

⁴ The impact of the Courtauld Commitment would not show up in the UK's 2005 data returns.

None of these explanations are particularly convincing:

- If 70%-80% of the packaged goods sold in Ireland are imported, then Ireland will to a very large extent benefit from any minimisation policies in place elsewhere and the impact of companies operating only in Ireland will be small.
- It is true that Ireland's economic growth has outstripped that of the UK and of EU-15 in general, but not by enough to explain this discrepancy. It is conventionally assumed that the weight of packaging placed on the market will increase by half the growth rate of GDP, which would suggest that Ireland's packaging growth rate should be 16% higher than the UK's.



It is beyond the scope of this study to speculate further, but it is important to understand that the structure of the Irish market does impose major limitations on what any Irish prevention initiatives might achieve:

- If 70%-80% is imported, then Irish prevention policies can only influence 20%-30% of the packaging on the market.
- If Irish prevention policies could bring about an average 10% reduction in the packaging used per item, then the maximum that could be achieved would be a 2%-3% reduction in the weight of packaging placed on the Irish market.
- In reality the saving would be less than this, because some Irish companies are already pursuing proactive packaging minimisation policies.

2.2 How packaging design decisions are made

The *retailers* made it clear to us that while they might communicate their packaging design expectations to all suppliers, they are much more proactive in relation to own-label and smaller brands, where they might provide design assistance or even carry out design work themselves.

There is however increasing pressure on major brands from the UK authorities and retail trade for packaging minimisation, and the results of this will flow through to the Irish market. (One result of this focus on weight reduction might be an increase in the proportion of packaging on the market which is effectively unrecyclable.)

Some Irish retail chains already have detailed packaging design policies in place and the others are developing them, but few have an in-house packaging design team. They mostly buy in the services of a specialised design house, though more and more they are also

securing help from WRAP, the UK Government-funded Waste & Resources Action Programme.

We received a wide spectrum of responses from the *packaged goods producers*, some of which are based in Ireland and others in the UK. Most of those that do not have formal packaging design procedures consider packaging as part of the product development decision process, and have aimed at protecting the product at minimum cost. This can imply a fairly passive approach to the packaging of products already on the market, but some benchmark against competitors' packaging and others review the packaging of their biggest-selling lines from time to time. However, the packaging and packaged goods producers interviewed for the case studies demonstrated a much more committed and systematic approach to minimisation than was suggested by those that only provided a written reply to the questionnaire, so it could be that the questionnaire respondents rather undersold themselves.

That said, the trend towards value-added products in the fresh food sector is leading to an increase in packaging in order to meet functional requirements such as ovenability.

We found no example of a foreign brand tailoring its packaging specifically for the relatively small Irish market. The UK market appears to be considerably more sensitive to packaging minimisation issues, and source reduction initiatives often originate from that direction. One Irish producer told us that the packaging they buy in from the UK is produced as part of a run intended primarily for larger UK companies, so their purchases are limited to packaging produced to UK specifications.

Often the greatest packaging reduction potential is in the transport packaging rather than in sales packaging. This came out in particular from our interviews with non-foods suppliers, whose products tend to travel greater distances than those of food producers.

2.3 The drivers for change

Our detailed study covered only five supply chains, and given the rather disappointing results from our initial questionnaire survey, it may be dangerous to generalise. However, it is clear that

- the retail chains' main role is in setting packaging minimisation objectives and in implementing them through their purchasing policies. The development of new packaging minimisation policies is not yet complete, but the multiple retailers will be expecting results from them in the coming years. We believe they will work with own-label and smaller brands to achieve weight reductions and will expect major brands to come forward with their own initiatives. However, most of the retail chains do not have packaging technologists in-house, so they will be relying on collaboration with their suppliers and with external experts;
- the packaged goods producers demonstrate the widest range of responses, from those representing global best-practice to those that have done very little. The focus of UK policymakers has been on lightweighting consumer packaging, and Irish producers will be able to take advantage of innovations as and when their suppliers bring them to market;
- price pressures and the demands of the market mean that the packaging converters we spoke to were generally up to speed.

The important thing is that *somebody* in the supply chain is considering these issues and is able to drive through improvements. The packaged goods producer is at the pivotal point – he

is the one able to see the total packaging system (sales packaging, secondary packaging and transport packaging), knows how they fit together and is aware of the stresses and strains that his consignments will undergo on their way from factory to store or end-user. It is at this stage in the chain that that awareness must be raised and where external pressure is most likely to bear fruit.

Irish packaged goods producers can probably best contribute by taking a systematic look at the relationship between their sales packaging and their secondary and transport packaging and designing out unnecessary weight in their transport packaging wherever feasible. If they are introducing shelf-ready packaging they should review their transport packaging to make sure that they are not over-protecting the contents. Some will need external help to conduct these reviews and make appropriate changes.

2.4 Policy options for improving packaging design

There are six ways in which policymakers could encourage better awareness and a more systematic approach to packaging minimisation in Ireland. These are, in approximate ascending order of severity:

- encouragement of packaging minimisation initiatives through seminars and publications;
- promotion of ‘best-in-class’ initiatives;
- a mandatory requirement to submit sectoral or corporate prevention plans showing how the product sector or company intends to contribute to the national packaging reduction target;
- establishment of an independent ‘packaging watchdog’ to investigate complaints about over-packaging and publish its findings;
- enforcement of the ‘Essential Requirements’ linked to Article 24 of the Waste Management (Packaging) Regulations;
- negotiating a binding commitment with leading distributors and brands to reduce the amount of packaging placed on the Irish market in relation to the amount of product sold.

Some of these options are alternatives – it would be unnecessarily onerous to combine enforcement of the Essential Requirements with a mandatory requirement to draw up prevention plans, for instance – whereas others are complementary.

Repak is already carrying out an *education programme* on packaging minimisation. Increased awareness (of which this report is a part) clearly helps promote better packaging design, and small companies will benefit particularly from specific advice. This initiative is valuable no matter what other measures are adopted, so it is not discussed further in this report.

Benchmarking against competitors is always illuminating, and WRAP publishes data on its website which may help companies identify where they seem to be falling short of best practice. The database has certain limitations (which are outlined in section 6.2 below), and in any case identification of ‘best-in-class’ can only be a starting-point for a packaging review:

- functional requirements may be different from those of the ‘best-in-class’ (lowest weight) example;

- the ‘best-in-class’ example may not necessarily be cost-effective or popular with purchasers;
- depending on the filling and handling equipment available, it may not be practicable to move to ‘best-in-class’.

Thus the WRAP database offers not a solution but a useful short-cut for a company carrying out a benchmarking exercise.

National packaging reduction targets are in place in Belgium, Slovakia and Spain and were a feature of the now-defunct Dutch Covenant, a voluntary agreement which was replaced by legislation when Covenant III expired at the end of 2005. These targets are supported by a requirement that industry submits packaging waste prevention plans showing how the targets will be met and what other initiatives are to be taken to promote packaging waste management. Companies can submit their own plans, or they can contribute to sectoral plans drawn up by their trade association or Green Dot organisation. Most companies have opted for the sectoral approach. To avoid placing an unnecessary burden on companies that use only a small amount of packaging, all three countries apply a tonnage-based *de minimis* threshold to this requirement.

The quality of the early plans was poor, but their value and relevance has improved over time as the authors of the plans learn what is expected of them and the authorities develop more useful guidance in the light of experience.

The EC Packaging and Packaging Waste Directive lays down certain **Essential Requirements** for packaging design which must be respected if packaging is to be allowed onto the market. These have been written into the national law of all 27 member states, mostly word-for-word, but are being only patchily enforced. Some member states believe that the Essential Requirements are too subjective for enforcement purposes. The CEN standards are intended to provide guidance on how to comply with them, but by adopting a management systems approach rather than laying down pass/fail criteria the standards do not enable enforcement authorities to assess clearly and indisputably whether a particular packaging item complies or not.

There is evidence that the CEN standards are being used by many major companies, and not only in jurisdictions where the Essential Requirements are being enforced. Companies operating on a regional or global scale tend to align their policies and procedures with the most stringent legislation applicable to them. On the other hand, it is also clear that many companies, particularly those working at a national level rather than EU-wide, are taking no action to ensure compliance with the Essential Requirements – and after an initial flurry of activity, the UK enforcement authorities appear to be slackening off their efforts in this field in favour of other priorities.

Whilst we accept that the Essential Requirements do not provide the pass/fail criteria that would make enforcement straightforward, we do not agree that they are unenforceable:

- The fact that there have been four convictions and that no prosecution in the UK has as yet been contested demonstrates that enforcement is not impossible;
- what seems to the layman to be an obvious case of excessive packaging may not be so clear when subjected to expert case-by-case scrutiny; and
- it is always possible for the enforcement authorities to challenge the ‘consumer acceptability’ defence by demanding evidence that the producer has tested this. Evidence

could be market research results, or the findings from benchmarking exercises – if a competitor changed his packaging, what effect did that have in the market-place?

The packaging data submitted by the member states to the Commission indicates that the amount of packaging placed on the market in France and the UK, the two member states enforcing the Essential Requirements, increased only marginally between 1998 and 2005, the latest year for which statistics are available. In the three countries with prevention targets and mandatory prevention plans, packaging increased *more* than in the ten EU-15 member states with neither targets and plans nor enforcement of the Essential Requirements.

It could be inferred that whereas the preparation of prevention plans is a bureaucratic exercise whose aim is to produce a document, enforcement of the Essential Requirements compels companies to pay specific attention to the design of their packaging – an internal task aimed at improving the company's products, reducing cost by identifying packaging savings, and presenting the company well to the outside world (both customers and enforcement authorities). There is no way of enforcing the packaging prevention targets, and this discourages rigour in the development of packaging prevention plans.

Since most of the packaged goods sold in Ireland originate from the UK, it could be argued that enforcement of the Essential Requirements in Ireland would add little to what is already being done in the UK. Irish enforcement would largely focus on relatively small companies which are individually responsible for only a tiny proportion of the packaging placed on the Irish market and which may in many cases lack the resources needed for a systematic approach to packaging minimisation.

This would not prevent the Irish enforcement authorities from intervening when they believe that they have identified a flagrant example of over-packaging, but an alternative approach based on 'naming and shaming' rather than the threat of prosecution might be more cost-effective for the public purse.

This would involve setting up *an independent 'packaging watchdog'* to investigate complaints about over-packaging and publish the outcomes. Its reports would embarrass companies whose explanations failed to convince, but would also give industry an opportunity to explain functional issues which might not be obvious to the layman. Complaints are a valuable source of feedback for retailers and consumer goods companies, so this body should only take on issues when the complainant has failed to get a satisfactory response from the company concerned.

This service would be managed by an experienced packaging technologist, perhaps a part-time retiree, supervised by a Board drawn from a wide range of public and private sector stakeholders. Any such 'packaging watchdog' must be seen to be independent, so we would recommend 50/50 funding from the public sector and the private sector.

Probably the most interventionist policy that could be adopted does not rely on legislation or public sector activity, but on the commitment of the major retail chains in Ireland. 13 leading UK retailers were persuaded to sign up to *a voluntary agreement* known as 'The Courtauld Commitment'. This aims at designing out packaging waste growth by 2008, delivering absolute reductions in packaging waste by March 2010 and identifying ways to tackle food waste. The Environment Minister has already challenged Irish industry – if it can be done in the UK, why not here?

Packaged goods imported from the UK will already be designed with the Courtauld Commitment in mind, and it would be important to ensure that there is no 'double jeopardy'. The baseline for any packaging reduction target set by Irish retailers would be later than that set by their UK counterparts, and it would be unreasonable – and probably unfeasible – to

expect these suppliers to carry out a second round of reductions over and above that demanded in the UK.

Irish retailers could set a packaging reduction target for Irish suppliers and for imports from countries other than the UK, but that would probably have value only in sectors where there is no competition from abroad.⁵ Where Irish suppliers are competing with British companies, the retail trade could no doubt ask the Irish firms to match any packaging innovations coming from the UK. Our case studies suggest that this might happen automatically, since benchmarking against competitors already goes on and because Irish companies often source their packaging either from UK companies or from Irish companies whose major market is the UK.

2.5 Recommendations for improving packaging design

- 2.5.1** Encouragement of packaging minimisation initiatives through seminars and publications is already in place in Ireland, and must be continued.
- 2.5.2** The WRAP ‘best-in-class’ database is already available to Irish companies, and there is no need to replicate it here.
- 2.5.3** We do not recommend imposing prevention targets and/or requiring prevention plans to be drawn up, as this approach has fewer advantages than enforcement of the Essential Requirements and it would be unnecessarily burdensome on companies to employ both options at the same time;
- 2.5.4** Since much of the packaging and packaged goods on the Irish market have been imported from the UK, the various prevention initiatives being taken there are already being introduced to Ireland to a large extent. There is a case for action against flagrant examples of over-packaging, especially if carried out by companies with a significant market share in Ireland. This action could either take the form of
- enforcement action based on Article 24 of the Regulations, or of
 - ‘naming and shaming’ by an independent ‘packaging watchdog’ which could be set up to investigate complaints about over-packaging and publish its findings.
- 2.5.5** The Irish authorities could follow their UK counterparts in negotiating a binding commitment with leading distributors and brands to reduce the amount of packaging placed on the Irish market in relation to the amount of product sold, but that would probably have value only in sectors where there is no competition from abroad. Where Irish suppliers are competing with British companies already complying with the Courtauld Commitment, the retail trade could no doubt ask the Irish firms to match any packaging innovations coming from the UK.⁶

⁵ And selective targeting according to country of origin might well be regarded as a breach of EU Single Market rules.

⁶ We understand that discussions are now underway on a similar agreement in Ireland. This is expected to be in place by summer 2008.

PART II: HOW PACKAGING DESIGN DECISIONS ARE MADE

3. METHODOLOGY

3.1 *Criteria for selection*

We were asked to draw up a list of possible candidates so that the project steering group could select for study the supply chains for a maximum of five products.

We decided to look for companies and products in the following categories:

- ***Different packaging specifiers*** – products branded by a retailer; an Irish packaged goods company; and an international company with a strong Irish presence.

The aim was to establish who makes the decisions, the retailer, product supplier or the packaging supplier? In the case of a product made for the Irish market by a foreign company, how much of a say does *anyone* in Ireland have?

- ***Companies using the various assessment methodologies*** – the CEN standards; the WRAP best-in-class approach; another methodology (if one exists); response to pressure from customers; and purely ad hoc decision-making.

The aim was to establish how and when was the decision made to adopt this approach – or was a decision never consciously made? What did the company do before? How systematically does the company follow its chosen methodology? Does the company have any plans to review its approach?

- ***Availability of alternative packaging formats*** – packaged products which can be bought by the consumer unpackaged, such as fresh produce; packaged products available in a variety of customised formats, such as ready-meals; and packaged products available in a variety of standard formats, such as beverages.

The aim was to establish how the decision was made to opt for the particular packaging formats used, or why the packaged version is offered at all.

- ***Packaging which is particularly vulnerable to criticism*** – packaging designed for marketing appeal, such as children's toys; packaging designed for consumer convenience, where the consumer could easily assemble the components him/herself without the need for packaging, such as snacks to be eaten on the move; and packaging intended to frustrate shoplifters.

The aim was to establish on what basis these decisions were taken, and how long since this choice was last reviewed.

- ***Packaging which has radically changed in the recent past*** – such as a pouch which has replaced a rigid pack; a mono-material pack which has replaced a composite, or vice versa; and a pack which has been changed to accommodate extra features, such as a more convenient opening device.

We recognised that a relatively large number of candidates would have to be identified, because the availability of good study information would limit the range of possibilities. On the basis of a list of companies provided by Repak, we prepared a questionnaire aimed at developing a broad picture of how packaging minimisation decisions are made in Ireland.

This was intended to put the detailed sample into context, to identify companies likely to have something interesting to say and to link up potential respondents which are part of the same supply chain.

3.2 Response to the questionnaire

On 14 September 2007, questionnaires were sent to 27 companies. Replies were requested by close of business on 5 October, but by that date only six returns had been received. In view of the disappointing response, Repak phoned 17 of the companies on 11 October. Two companies declined to complete the questionnaire. Ten of these companies promised to return the questionnaire within a week, but only two did so. One company that did not complete the questionnaire was later interviewed, as were a further two companies introduced to us by their retail customers.

SELECTION CRITERIA	COMPLETED QUESTIONNAIRE	NO RESPONSE
1. <i>Different Pack Varieties (e.g. fruit)</i>	2	1
2. <i>Decisions made in Ireland</i>		2
3. <i>Electronic Goods</i>		2
4. <i>Mobile Phones</i>		1
5. <i>Computer Software</i>		1
6. <i>Products imported products from UK</i>	1	1
7. <i>Detergents with product spec. for metered dosage</i>	1	1
8. <i>Confectionery / Easter Eggs</i>		2
9. <i>Children's Toys</i>		1
10. <i>Household and office Items (e.g. stapler)</i>	1	
11. <i>Biodegradable / Compostable Packaging</i>		1
12. <i>Hardware store product</i>	1	1
<i>Retailers</i>	2	3

Eventually five supply chains were selected:

	PRODUCT	RETAILER	PACKER/FILLER	CONVERTER
1	<i>Poultry</i>	Irish company	Irish company	Irish distributor <i>(telephone interview)</i> UK converter <i>(telephone interview)</i>
2	<i>Fresh tomatoes</i>	Irish company	Irish company	UK company <i>(telephone interview)</i>
3	<i>Chocolates</i>	Irish company	Irish company	<i>(Large number of UK- and China-based suppliers)</i>
4	<i>Computer software</i>	Company headquartered in UK but with Irish outlets	International company based in Ireland	Irish company <i>(telephone interview)</i>
5	<i>Toys</i>	Company headquartered in UK but with Irish outlets	<i>(Imported from China)</i>	<i>(Imported from China)</i>

3.3 The interviews

Having identified companies able to provide us with information on all relevant parts of the supply chain for the same product, we visited Ireland three times to conduct face-to-face interviews.

In some cases, products and/or packaging were imported from elsewhere. We carried out telephone interviews with UK-based companies and with Irish packaging suppliers but did not interview companies in China.

The following key questions were asked:

- What influences packaging and packaging design decisions at different stages in the supply chain?
- Why are the same products packaged differently?
- What measures, if any, are taken to fulfill the EU Essential Requirements?
- Is a comparison with “best-in-class” made for the desired function?

To ensure the fullest possible response, respondents were promised anonymity. Each of the companies interviewed in Ireland for the case studies was given the opportunity to see and approve how the interviews were written up, but they were not shown our conclusions or anything else in the draft report.

4. RESULTS OF THE QUESTIONNAIRE

We found that few respondents have a formal method of implementation of the Essential Requirements based on working through a standard procedure for decisions on packaging. However, two of the retailers we interviewed are working on new policies and procedures, and the third has for some time been reviewing the packaging on its highest selling lines and changing the format where it can.

We only found one packaged goods producer that was basing its procedure on implementation of the CEN packaging standards. Two have been working with WRAP to identify industry best-practice, and suppliers of own-label products have to meet customer requirements. In general, it seems that Irish retailers allow their suppliers to propose packaging formats, though there are of course discussions between supplier and customer before designs are finalised.

However, most of the respondents that do not have formal packaging design procedures consider packaging as part of the product development decision process, and have aimed at protecting the product at minimum cost. This can imply a fairly passive approach to the packaging of products already on the market, but some benchmark against competitors' packaging and others review the packaging of their biggest-selling lines from time to time. Often the greatest packaging reduction potential is in the transport packaging rather than in sales packaging.

Of the companies which also operate outside Ireland, most adopt the same approach to packaging designed for other markets. One global producer said that decisions on packaging design are based on the requirements of the UK, German and French markets, since these are where the sales volumes are. Two other global producers (one in food, one in mobile phones) declined to help with the questionnaire because, they said, no packaging policy decisions are taken in Ireland.

9 of the 11 packer/fillers and distributors who completed the questionnaire or were interviewed said that some person or group has overall responsibility for packaging design in terms of decision-taking and/or setting up appraisal procedures.

No respondent had been approached by a customer or supplier to discuss compliance with the Essential Requirements, or had been asked by a customer to guarantee compliance. None had approached customers to discuss compliance with the Essential Requirements.

However, two retailers and two branded goods manufacturers had approached suppliers to discuss compliance with the Essential Requirements. Three of these are companies whose policies are developed in the UK, and the other one operates on a global scale and applies the most stringent national requirements to all of its production to ensure that its products are compliant everywhere. Only two of the four impose a contractual obligation on their suppliers to guarantee compliance, but at least one more plans to do so as it develops its procedures.

None of the respondents said that they had received any complaints about over-packaging from business customers or central or local government, but all the retailers and two of the packaged goods producers said that they had had some complaints from consumers.

The three retailers all said that they had approached an external body for help on packaging minimisation. They had all been in touch with WRAP but surprisingly, only one said that WRAP's assistance had resulted in changes to their existing packaging or new packaging development.

5. CASE STUDY: OWN-LABEL POULTRY

5.1 *The retailer*

The retailer told us that they have no influence on the packaging policy of the big international brands. They have more chance of influencing smaller suppliers, but as these tend to be smaller volume lines they may not have much impact on the overall tonnage of packaging handled.

The company does not employ packaging technologists, but is currently developing an own-label packaging policy, product by product. The focus is on cost reduction, packaging reduction and recyclability. Prior to the current exercise, poultry packaging had been unchanged for some time.

They do not issue packaging specifications, but will be examining where they stand against best-in-class.

5.2 *The product producer / manufacturer / supplier*

The poultry producer has no in-house packaging technologists, but visits a lot of packaging shows to see what is available. They also study the UK market to see what developments are likely to be coming over to Ireland.

The retail chains are keen to be presented with new ideas, so the producer gives them some options. In discussions between the two, the product size, ingredients and packaging requirements might change. Functional requirements include the need to avoid taking up more shelf-space than necessary, as well as best fit into case and pallet.

Poultry producers in Ireland have limited influence on the packaging they use, as their packaging suppliers are mostly based in the UK and they receive packaging produced as part of a run intended primarily for larger UK companies. This means that they cannot usually obtain packaging to a specification not used in the UK, but on the other hand they benefit from source reduction innovations introduced there. When the market is moving to new packaging formats, Irish suppliers generally have the opportunity wait to see what emerges as the industry standard when things settle down before ordering any new equipment that might be needed.

Four years ago in the UK, and three years ago in Ireland, food safety requirements forced a change for chicken portions from a PS tray with overwrap to PP with a sealed barrier film. The producer is now looking at options for improving the packaging for whole birds, but as yet there is no standard industry solution. New equipment is becoming available, and the poultry producer and its retail customers will be reviewing the options.

Value-added portions (i.e. recipe products) need extra packaging – sleeves and ovenable trays. Aluminium trays need to be larger than the dimensions of the portions to ensure that all liquids are caught, and that means only three packs to a case rather than five. Aluminium trays are not used for whole birds on grounds of cost.

The poultry supplier does not use either the CEN standards or WRAP's best-in-class database, but nevertheless pursues source reduction opportunities systematically. They have experimented with thinner-gauge film, but this was ripped either by the sharp bones of whole birds or by the jagged edges of PP trays. They have also tried unsuccessfully to get their suppliers to offer thinner trays for two-pack portions. Two-pack portions have the same

gauge trays as six-packs, even though they do not have to bear the same weight. However, the suppliers are unwilling to offer a range of gauges for reasons of cost.

Since there are few packaging reduction opportunities, the company has also been looking at increased recyclability, for instance cardboard sleeves instead of stickers and labels – people recognise that they can put the sleeves out for recycling. Moulded pulp trays with peel-off PP film were rejected on grounds of cost and because of doubts that people would put them out for recycling.

They currently procure around 80% of their packaging from an Irish distributor which places their order with various packaging suppliers and manages their logistics. This enables the poultry producer to have the right packaging available at 24 hours notice without having to hold stocks himself. Service is as important as functionality. They provide the packaging distributor with a specification, but in cases where they know that a supplier meets their requirement they might nominate him (for instance for film, where different manufacturers' anti-fogging standards vary).

About 90% of their packaging comes from the UK, and the rest from the Continent. None currently comes from Irish suppliers. They visit the plants of their packaging suppliers to satisfy themselves that manufacturing standards are good.

5.3 Packaging manufacturers / suppliers / distributors

The packaging distributor stresses that poultry margins are very low, so price and functionality are paramount. They do not themselves use source reduction tools such as the CEN standards or WRAP's best-in-class database, but they take advantage of source reduction opportunities whenever possible. Lightweighted trays and films are always trialled before use. For example, a lighter tray which has been tested successfully in the UK is about to be trialled with the Irish poultry supplier we interviewed.

Ireland can sometimes be ahead of the UK, for instance in moving from PVC to R-APET trays for mince (R-APET has a high post-consumer recycled content – it is supplied from the UK but is based on recycled PET bottles sourced from the Continent). However, in general the major UK supermarket chains' decisions on packaging materials have a strong influence on the way the rest of the market moves (PP trays for poultry, for example).

The principal packaging supplier to this supply chain produces a range of different trays at varying weights. All designs are tested in transit trials, filling trials and shelf-life trials.

They are aware of the CEN standards, and use them as regards heavy metals content, but the source reduction standard (EN 13428:2004) is the responsibility of the packer. They do not use the WRAP best-in-class database as they conduct their own benchmarking exercises, getting samples of competitors' materials from the UK and the Continent and analysing them.

Their product development is aimed mainly at the UK market, and they do not do anything special for Ireland.

5.4 Conclusions

In this supply chain there is no dominant decision-maker. The poultry producer is at the pivotal point, but he works closely with the retailer. As all of the packaging used is currently imported, options are however limited to a very considerable extent by the types of packaging

demanded by producers in other countries – the Irish market is too small to justify special innovations or production runs.

Poultry portions and whole birds are a product sector where margins are tight and lightweighting opportunities slender. Keeping a close eye on their packaging suppliers' development work and on the results of innovations in other markets would seem to be the right approach, coupled with a review of the transport packaging used whenever there is a significant change in the primary packaging.

Value-added portions need more packaging, and here there is a wider range of options and a need to balance lightweighting and cost reduction on the one hand with improved functionality (ovenability etc) on the other. With an Irish equivalent of the Courtauld Commitment on the way, producers may well need to demonstrate that they really have considered all the options and have optimised their packaging systems. For these products we recommend the use of a formal evaluation system such as that set out in European standards EN 13427:2004 and EN 13428:2004.⁷

The packaging minimisation standard is based on the principle that the standard user should identify the 'critical area' which prevents further reduction of the packaging used. If 'consumer acceptability' is identified as the critical area that prevents further minimisation, this should be backed up by market research results, or the findings from benchmarking exercises – if a competitor changed his packaging, what effect did that have in the market-place?

⁷ EN 13427:2004, *Packaging – Requirements for the use of European Standards in the field of packaging and packaging waste* and EN 13428:2004, *Packaging – Requirements specific to manufacturing and composition – Prevention by source reduction* are obtainable from the National Standards Authority of Ireland (NSAI) or from BSI.

6. CASE STUDY: OWN-LABEL TOMATOES

6.1 *The retailer*

The retailer told us that they have no plans to recruit a team of packaging technologists, so they have asked suppliers how to achieve their packaging reduction target. They do however provide assistance, as some of their smaller own-label suppliers do not have packaging expertise. Thus, the retailer uses packaging design consultants and also works with WRAP.

This particular retailer generally leaves it to the packaging supplier and the packer to ensure that the packaging is fit for purpose, but will issue a specification if changes start to influence sales. Changes in sales patterns have to be investigated carefully, as there can be a number of reasons for it – not only film thickness, but also the design of the pack or the quality of the product inside.

6.2 *The product producer / manufacturer / supplier*

The tomato supplier works with the retailer to try to extend the Irish season and minimise imports. As well as supplying the full range of Irish-grown tomatoes, the company is also responsible for procuring and supplying tomatoes from Spain and the Netherlands. Wherever logistically and economically possible, returnable plastic crates are used by the growers. The filled crates are sent to the supplier for grading, packing, labelling and then go to the store.

The supplier handles a wide variety of vegetable and salad products. Before starting a new line, they research the packaging formats available in other Irish stores and stores in the UK and consider the most suitable packaging format for product quality, shelf-life and integrity. The supplier considers whether flow-wrap is sufficient or whether the product also needs a tray or punnet. The final product packaging format is based on this research and on discussions with the customer about his requirements for the product. The packaging format is outlined in a specification.

The company has already had some packaging minimisation successes:

- The replacement of corrugated boxes by returnable plastic crates has added to the tomato supplier's costs, but has reduced the amount of packaging arising as waste on the retailer's premises by more than 100 tonnes.
- Rhubarb packaging for 2007 was reduced by 81% from that used the previous year. Rhubarb in the UK is flow-wrapped, but the Irish supplier instituted a successful trial in which the film was eliminated. Instead, the rhubarb was tied together with an elastic band and a label attached.

Tomatoes are also supplied loose, so the consumer can select them by hand and bag them in-store. The supplier says that packaging the produce is one of the ways of assuring the quality that consumers have become accustomed to. If all packaging were to be eliminated, consumers and store staff would have to be retrained in what quality to expect. Also, when a few old loose items are left in a tray, decanting these on top of fresh product can make the product appear of lesser quality. Consumers may assume that the whole tray is similar and sales may be lost.

6.3 Packaging manufacturers / suppliers / distributors

The supplier of most of the grower's plastic film for tomatoes is based in Ireland, though the company also supplies packaging for produce destined for the UK market.

The company uses the ISO and CEN standards, but the main driver for packaging minimisation is the availability of equipment that will run thinner film. The same equipment is available throughout Europe, so it is a question of how quickly it can be introduced. There have been major technological developments over the last four years and the initial implementation problems have been overcome. As a relatively small operator, the company believes that it can move more quickly than others to exploit these opportunities.

There are only a few polymer suppliers, so most packaging is very similar – variations relate to product shelf-life, storage conditions (chilled for leaf products, straight to distribution centre and on to store for potatoes), and modified atmosphere packaging. Thus the specifications issued by the major UK and Irish retailers are often in line with what the packaging supplier is already doing.

Tomatoes are usually packed in punnets and flow-pack with self-adhesive labels. For some customers they are changing to printing on the film. This makes for better presentation (no crooked labels), lower labour cost, improved recyclability and less packaging weight. However, for small production runs it is still more cost-effective to use standard film and apply different self-adhesive labels.

Downgauging always risks higher wastage rates. The company first tests reduced-gauge films on a slow-moving line and then increases the speed by increments until it arrives at a safe baseline.

The company is working on biodegradable packaging, but so far this is economic only for specialised products like organic produce. Insufficient biodegradable material is available for biodegradable packaging to be price-competitive.

A (UK-based) manufacturer of films and liners for crates which this grower also uses says that most items have been ordered for many years, so the specification is well-established. They have done work on lightweighting in the past, but there has been a lot more focus on this in the last year as a result of the Courtauld Commitment.

Lightweighting ideas can come from any point in the chain. The retailer may issue a new specification; the packer may have an idea; the packaging supplier may find itself running thinner-gauge film for another retailer and may suggest a change. If a possible improvement is identified, the packaging supplier will carry out a trial in conjunction with the packer.

Trials may not always be successful. Lighter packaging may split, and even if it is robust enough consumers may not like it. Offered two packs for the same type of potato alongside each other, consumers will tend to choose the thicker one.

6.4 Conclusions

Up to now the tomato supplier has been the main decision-maker, but this may change as the Irish retail trade takes on formal packaging minimisation commitments.

Thinner-gauge film is tested as it becomes available and adopted as appropriate, but the main potential for packaging minimisation is doing without primary packaging altogether and selling the product loose. One can expect increasing pressure from the press and from some

sectors of public opinion for this option, which would clearly fit with the retail trade's packaging minimisation agenda – but any resource and waste savings from eliminating packaging need to be weighed against increased product wastage.

Ideally, the retail chains will continue to give people a choice between pre-packed and unpackaged fruit and vegetables. Some want to buy their fruit and vegetables pre-packed rather than take the time to pack them in the supermarket's produce bags themselves, whereas others want to buy 'unpackaged' produce. Goods that are not pre-packed are more likely to be damaged or bruised, but the careful shopper will be able to select items in good condition. An unpackaged cucumber is fine if the consumer is going to use it within a couple of days, but a cucumber wrapped in film will keep until the next weekly shop.

But if faced with packaging minimisation targets, the retailers may have to engage in 'choice editing' and eliminate packaging where its protective benefits are only marginal and where its elimination is acceptable to consumers. Before doing so, they should research spoilage rates for each type of produce and make a decision which will balance real packaging use (which includes the produce bags provided), perceived packaging use (what is on display) and food wastage rates.

Contrary to some people's perception, the unpackaged tomato does not exist. Crates and trays are always needed to transport the product from grower to the retail outlet, whether the produce has come from abroad or from local growers. Transport packaging requirements need to be factored in to any decisions on packaging minimisation. If less primary packaging is used, what changes need to be made to the transport packaging? Is there an overall packaging reduction, or only a perceived reduction?

With an Irish equivalent of the Courtauld Commitment on the way, producers may well need to demonstrate that they really have considered all the options and have optimised their packaging systems. For these products we recommend the use of a formal evaluation system such as that set out in European standards EN 13427:2004 and EN 13428:2004.

The packaging minimisation standard is based on the principle that the standard user should identify the 'critical area' which prevents further reduction of the packaging used. If 'consumer acceptability' is identified as the critical area that prevents further minimisation, this should be backed up by market research results, or the findings from benchmarking exercises – if a competitor changed his packaging, what effect did that have in the market-place?

7. CASE STUDY: LUXURY HANDMADE CHOCOLATES

7.1 *The retailer*

The retailer told us that they will be putting pressure on their branded goods suppliers for packaging reductions, but not yet. The first priority is to address their own-label products, then products from local suppliers and then large branded suppliers.

7.2 *The product producer / manufacturer / supplier*

The chocolate producer is based in Ireland. The company supplies only branded products in Ireland but it exports branded and own-label chocolates to the UK and other countries. Ireland is in fact a relatively small market for its products.

The company is taking part in a packaging minimisation programme for own-label products in the UK, but the projected lighter packaging has not yet passed the company's travel tests. Every packaging format is travel-tested.

Its packaging for the Irish market rarely changes, other than gauge reductions when possible. The chocolates are a gift item, and they come usually already gift-wrapped. For example:

- A board box with PET moulded inserts, a pad covering each layer and a protective sheet, packed in wrapping paper with a ribbon incorporating a swing-card giving details of the products inside.
- A rigid board box, with a gauze bag and swing-card added for Christmas.

However a more "everyday" product comes in a printed box with two layers of trays and interleaving pads. Although there is no gift-wrapping for this item, some regions require an outer flow-wrap to prevent tampering and stop people taking and eating a chocolate from a pack on display.

The company's handmade rigid board boxes and ribbons come from China (European suppliers are not competitive), but the rest of its board comes from the UK and Ireland. PET flow-wrap and trays are imported from the UK.

The company invested in finding a suitable supply of biodegradable packaging – most is too sensitive to light or air or too brittle – but then found that they cannot claim degradability because of the pigment needed for the tray.

7.3 *Packaging manufacturers / suppliers / distributors*

For quality and food safety, the chocolate producer only uses Chinese factories that have been approved by the British Retail Consortium. Their Chinese suppliers are quite proactive – they are working on a square board box which can be shipped flat.

The chocolate producer does not use a formal eco-design procedure for its packaging, but all packs are benchmarked against competitors and are minimised as far as possible for cost reasons. Without the inserts, the chocolates would stick together or slide on top of one another, causing the box to bulge. That would be unacceptable.

7.4 Conclusions

The chocolate producer is the key decision-maker.

Luxury products like chocolates and perfume are frequently attacked for over-packaging because the packaging is more elaborate than is strictly necessary in order to protect the contents. However, these products are usually bought as gifts and if they were not supplied already gift-wrapped, the customer would gift-wrap them themselves. Much the same applies to Easter Eggs, where the packaging is an integral part of the product – if you just want chocolate, you can buy a chocolate bar.⁸

That said, producers of luxury and gift products are not exempt from the provision in the Essential Requirements that the weight and volume of the packaging shall be the minimum necessary level for safety, hygiene and consumer acceptability, so it is important that they keep their packaging under constant review.

In the case of luxury chocolates, the need for this applies not only to the gift-wrapping aspects of the packaging but also to its protective functions, since chocolates are particularly vulnerable to crushing, warmth, moisture and infestations. Any innovative materials that can protect the product more effectively or can enable one layer of packaging to be removed is worth evaluating.

As regards the particular supply chain studied here, it is noteworthy that the producer sells “everyday” products alongside its gift-wrapped ranges, so consumers can avoid the gift-wrapping if they don’t want it.

With an Irish equivalent of the Courtauld Commitment on the way, producers may well need to demonstrate that they really have considered all the options and have optimised their packaging systems. For handmade chocolates and other luxury or gift products we recommend the use of a formal evaluation system such as that set out in European standards EN 13427:2004 and EN 13428:2004.⁹

The packaging minimisation standard is based on the principle that the standard user should identify the ‘critical area’ which prevents further reduction of the packaging used. If ‘consumer acceptability’ is identified as the critical area that prevents further minimisation, this should be backed up by market research results, or the findings from benchmarking exercises – if a competitor changed his packaging, what effect did that have in the market-place?

⁸ Though one UK chocolate manufacturer has just launched a range of Easter Eggs which are simply foil wrapped – using 75% less plastic and 65% less cardboard than previously. It will be interesting to see how they sell, but this initiative certainly sets a new benchmark.

⁹ EN 13427:2004, *Packaging – Requirements for the use of European Standards in the field of packaging and packaging waste* and EN 13428:2004, *Packaging – Requirements specific to manufacturing and composition – Prevention by source reduction* are obtainable from the National Standards Authority of Ireland (NSAI) or from BSI.

8. CASE STUDY: TOYS

8.1 *The retailer*

The retailer is headquartered in the UK and imports most of its stock from China. The product range in its Irish stores is similar to that in the UK.

The retailer has offices in China for product sourcing and inspection. It has a China-based packaging QA manager, and two development engineers visit China two or three times a year.

The person at Head Office who is responsible for packaging QA and compliance manages a team of engineers. Her personal performance measurements targets include quantified reductions in packaging tonnage and the landed costs of shipping goods from Asia.

The company specifies that the packaging supplied to it must comply with the Essential Requirements.

The company has identified the areas where the greatest packaging savings can be made and is focusing its minimisation efforts on direct imports, as they can have most impact there. Lower priority is given to products where it deals with import agents; and the lowest priority is with domestic suppliers, where bigger retailers will be dominating packaging decision-making.

The greatest potential saving is in reducing the costs of shipping from the Chinese manufacturers to the retailer's Regional Distribution Centres by increasing the number of SKUs that can fit into a shipping container. Procurement costs are secondary. Depending on the size of the retail item, transport from the RDC to the store may be important. PRN savings (Packaging Recovery Notes, the UK's mechanism for funding recycling) are not a major factor, since this cost is relatively insignificant.

Computer-aided design is used for cube optimisation, and the company has made major reductions in the transport packaging itself (though not for toys). If the retail pack is sufficiently robust, the pallet shipper need not be made from solid board – a frame is enough to keep the load in place. To save both space and materials, plastic slip-sheets are now used instead of pallets to support the product load where there is no need for the rigid base that a pallet would provide.

Head Office is stressing to the company's Chinese offices the commercial advantages of minimising packaging and reducing landed costs – the lower the shipping costs, the more competitive they will be and the more orders they will get.

In addition to reducing or eliminating its packaging, the company is also trying to select materials with environmental considerations in mind. It is testing the packaging performance of 100% compostable moulded pulp to replace EPS.

8.2 *The product producer / manufacturer / supplier*

The retailer told us that Asian producers tend to use packaging suppliers they have an existing, sometimes personal, relationship with. But where the relationship is based on long-standing loyalty, Asian manufacturers do not put pressure on their suppliers to minimise the packaging used.

Thus the retailer is making direct contact with their suppliers' packaging manufacturers to improve the situation.

8.3 Packaging manufacturers / suppliers / distributors

The retailer says that traditionally, few European companies have specified their Asian suppliers' packaging, apart from the artwork. However, the quality of board varies enormously from one factory to another.

The retailer is therefore trying to get to know the packaging suppliers and to make them aware of the need to avoid overpackaging.

8.4 Conclusions

The retailer is the key decision-maker in this particular supply chain.

The retailers we interviewed consistently said that they are focusing their minimisation efforts on smaller suppliers and on own-brand products, and this applies to non-foods as well as foods. The assumption appears to be that major international brands will already have their own minimisation policies, and in any case it will be more difficult for any one customer to influence their decision-making. This seems to us to be the approach that will have most effect in the marketplace.

The toy retailer we spoke to is carrying out a further layer of prioritisation by concentrating on the *transport packaging* around its imports from Asia. It has shown that major savings can be made without disrupting the production processes of its Asian suppliers. In the next stage, it is making direct contact with Asian packaging manufacturers to try to change the culture there. Again, this seems the right order of priorities.

As the first importer into the EU, it is the retailer rather than the packaged goods producer who is legally responsible for compliance with the Essential Requirements in this case. Thus it is useful for companies in this position to adopt a formal evaluation system such as that set out in European standards EN 13427:2004 and EN 13428:2004.¹⁰

¹⁰ EN 13427:2004, *Packaging – Requirements for the use of European Standards in the field of packaging and packaging waste* and EN 13428:2004, *Packaging – Requirements specific to manufacturing and composition – Prevention by source reduction* are obtainable from the National Standards Authority of Ireland (NSAI) or from BSi.

9. CASE STUDY: COMPUTER SOFTWARE

9.1 *The retailer*

The retailer told us that it does not specify packaging for major global brands such as this software producer.

9.2 *The product producer / manufacturer / supplier*

The software producer makes all the packaging design decisions. Manufacturing is outsourced but the producer specifies the retail, sales, packaging and transport packaging in detail.

There is a worldwide structural packaging team involved from the beginning of every design process. It is essential that this team is included at an early stage to consider the complete package life cycle – from raw material sourcing, processing, manufacture, distribution & use to post consumption and disposal. They also ensure that the company follow the highest level regulatory requirements, such as those in the EC Packaging and Packaging Waste Directive. The requirements of the Directive and the CEN packaging standards are incorporated into the company's global policy document and are followed worldwide. The company requires suppliers to comply with the Essential Requirements.

The package designers are challenged to comply with the widest-ranging environmental concerns, as their package designs are produced across the globe. This team must consider:

- optimum packaging material efficiency for product protection and shipping
- supply chain efficiency
- pilfer protection
- reduction of costs
- elimination of specific materials
- shrinking the packaging footprint
- use of recycled materials
- long-term use packaging
- end of life, recovery, reuse and disposal
- retail shelf space allowances
- presenting the product in a logical and appealing way for easy set-up and access to product components and information
- improved consumer acceptability and customer experience
- worldwide requirements.

The packaging teams collaborate with suppliers and customers as well as with internal departments such as marketing, purchasing, and transportation to produce and implement

packaging designs that are good for their partners, end users, and the environment. Operating within complex parameters can achieve significant sustainability improvements.

The company thinks European and global; no products are designed specifically for the Irish market. Nevertheless, it has to take account of requirements in each country. Relatively small markets may make special demands which the company cannot adopt worldwide, and then special packs may be necessary. In Europe, they must meet retailers' requirements, which are dominated by the demands of certain large national markets.

As far as possible, the company specifies packaging that can be produced locally, and a global supplier produces its paper and board packaging in Ireland. DVD cases are also made locally. Some other packaging is made in China, the UK and other European countries.

The company's packaging engineers constantly encourage their suppliers to come up with improvements, such as using new materials or maximising the amount of material that can be used per sheet. For example, the CD case has been reduced in weight by 16%.

It is not just a case of reducing the amount of printed material supplied or reducing the weight of tertiary packaging; there are other issues which need to be considered. For example, the company cannot rely on web-based distribution in emerging markets where internet access is relatively low, so reducing the amount of printed material may not be feasible worldwide. Therefore, a dual format is needed for the time being.

Because of the trade-offs between primary packaging and transport packaging, the weight of individual packaging items might go up as well as down. Product protection can be built into either the primary or the transport packaging – given the value of the products, there is often a perception benefit in applying the protective features to the primary packaging. But product is shipped to Africa and the Middle East from Ireland, so the packaging needs to be designed for sea transport and warm climates.

The company also works with major retail partners across the world to find ways of reducing packaging. Where retailers display computer software in locked glass cabinets or put empty boxes on the shelves, tamper-evident or pilfer-resistant features are not needed. However, retailer requirements vary from country to country and even within countries, so these developments can only be introduced gradually.

For many years it was conventional for computer software to be packed in boxes whose dimensions were set when the product consisted of a large number of floppy disks. The software supplier we interviewed wanted to move to a smaller spine size, but the retail trade in a large European country was concerned that the smaller size impression and lack of visibility would affect sales and that shoplifting would become too easy. The retailers were unwilling to take a risk until the company was able to demonstrate that the new format would be a success.

The company trialled games software in a smaller packaging format, and when this was successful, it was adopted by the corporation worldwide. The company then trialled a smaller pack for a single low-end computer software product, and when this produced good feedback and no loss of sales, the new format was rolled out across the product range. The product is shrinkwrapped to prevent tampering and to minimise pilferage.

Having been piloted in a large European country, the smaller format was driven across Europe. There was a little resistance by certain retailers in other countries for a while, but the format was eventually accepted.

The change enables almost three times as many units to be fitted onto a pallet, so the transport and warehousing savings are enormous. The company carries out carbon footprint analysis.

9.3 Packaging manufacturers / suppliers / distributors

We spoke to one of the software producer's *packaging suppliers*. This supplier is a global company headquartered in the US which has operations in Ireland. Sustainability and environmental stewardship are paramount, and it is a member of the Wal-Mart Sustainability Index.

The company has a large Packaging R&D Division in the US, but within Europe it also develops local solutions to meet local customers' needs. The Irish operation works closely with the UK office, but there have been developments specifically for Irish companies, either to be rolled out throughout Europe or intended purely for the Irish market.

The company has a global focus on packaging reduction and recyclability. Some of the innovations on software packaging were introduced at the customer's instigation (lightweight CD cases, for example), but others were originally developed by the supplier (for instance, the replacement of corrugated packaging with solid board so that more sales units can be fitted onto a pallet while still protecting the product).

9.4 Conclusions

The product manufacturer is the key decision-maker in this particular supply chain, though in this case its Ireland-based packaging supplier makes a significant input, being an international company with strong expertise of its own.

The product manufacturer takes a systematic approach to legal compliance and packaging minimisation, and incorporates European standards EN 13427:2004 and EN 13428:2004¹¹ within its decision-making processes

The computer software sector has often been criticised for distributing its products in oversized boxes. The company we spoke to has addressed this issue, which came down to concerns on the part of the retail trade about the marketability of small pack sizes. This question of customer acceptability was settled by using a minor product line to trial a new packaging format and rolling it out across the range when it proved a success.

Pilferage is a problem for retailers of high-value but relatively compact products, and the product manufacturer is working with its retail partners to find market-specific solutions. Where possible, these solutions avoid the need to build extra features into the packaging or add extra layers to it.

¹¹ EN 13427:2004, *Packaging – Requirements for the use of European Standards in the field of packaging and packaging waste* and EN 13428:2004, *Packaging – Requirements specific to manufacturing and composition – Prevention by source reduction* are obtainable from the National Standards Authority of Ireland (NSAI) or from BSI.

PART III: POLICY OPTIONS FOR IMPROVING PACKAGING DESIGN

10. THE OPTIONS IDENTIFIED

There are six ways in which policymakers could encourage better awareness and a more systematic approach to packaging minimisation in Ireland. These are, in approximate ascending order of severity:

- encouragement of packaging minimisation initiatives through seminars and publications;
- promotion of ‘best-in-class’ initiatives;
- a mandatory requirement to submit sectoral or corporate prevention plans showing how the product sector or company intends to contribute to the national packaging reduction target;
- establishment of an independent ‘packaging watchdog’ to investigate complaints about over-packaging and publish its findings;
- enforcement of the ‘Essential Requirements’ linked to Article 24 of the Waste Management (Packaging) Regulations;
- negotiating a binding commitment with leading distributors and brands to reduce the amount of packaging placed on the Irish market in relation to the amount of product sold.

Some of these options are alternatives – it would be unnecessarily onerous to combine enforcement of the Essential Requirements with a mandatory requirement to draw up prevention plans, for instance – whereas others are complementary.

10.1 Education and awareness

Repak is already carrying out an education programme on packaging minimisation, so this activity is not discussed further in this report. Increased awareness (of which this report is a part) will clearly help, and small companies will benefit particularly from specific advice.

10.2 Benchmarking

WRAP, a UK Government advisory body, publishes ‘best-in-class’ data to help companies identify where they may be falling short of best practice. A database on the WRAP website¹² can be searched by

- category (bakery, beverage, breakfast cereal, condiment, etc),
- sub-category (air freshener sprays, apples, baby food, bacon, etc),
- material (all materials, aluminium, glass, liquid carton, etc) or
- packaging type (bag, bottle, box, can, etc)

¹² http://www.wrap.org.uk/retail/tools_for_change/uk_best_in_class/index.html

It will show the lightest, middle and heaviest weight *primary* packaging used for the most important food and drink products found on UK supermarket shelves.

DHL Packaging Datastore, which manages the database, says that “*all product data has been supplied by the manufacturers, suppliers or importers of those products. Data has been checked against other products to ensure that it appears sensible. On average, more than 70% of data is less than 12 months old. Older data may still be current but it has not been confirmed by the manufacturer.*” The data year is shown – but in every case we have checked, it is 2004 or 2005.

Having regard to the large proportion of food and drink products on Irish shelves that originate in the UK, this database will be useful to Irish companies conducting a benchmarking exercise. However, it has some quite serious limitations and can only be used as a starting-point for a packaging review:

- It only lists the weight of the primary packaging, so cannot take account of trade-offs between the primary packaging and transport packaging.
- Minimum weight does not necessarily mean minimum environmental impact. Under-packaging is usually far worse for the environment than over-packaging, since ten times more energy and materials are locked up in household goods and food than in the packaging around them.¹³ Thus, whereas over-packaging by 10% means that 10% of the resources needed to produce the packaging are wasted and extra fuel is needed to distribute it, under-packaging that results in the product being spoilt or damaged wastes 100% of the resources used to produce both the contents and its packaging, and all of the fuel used to distribute it.
- A company’s circumstances may not necessarily be comparable with the producer using the packaging identified by WRAP as best-in-class – different distribution channels, different markets, or ageing equipment that it cannot afford to replace which may not be compatible with the latest packaging designs.
- The database is not comprehensive. It does not cover chocolates or non-foods, and so would be relevant to only two of the supply chains which are the subject of this study (poultry and fresh tomatoes).

10.3 Packaging reduction targets and prevention plans

National packaging reduction targets are in place in Belgium, Slovakia and Spain.¹⁴

Belgian law imposes a packaging prevention provision over and above the Essential Requirements in the Directive, namely that for non-reusable packaging, there must be no increase in the ratio between the weight of the *primary packaging* and the weight of the product it contains above the ratio that existed when the law came into force. However, exemptions may be granted where packaging is needed for hygiene, safety or product life, where an increase in the quantity of packaging is compensated by a reduction in other parts of the packaging system (e.g. the transport packaging), or where an increase results from a

¹³ J M Kooijman (2000), *Environmental Impact of Packaging: Performance in the household*.

¹⁴ And were a feature of the now-defunct Dutch Covenant, a voluntary agreement which was replaced by legislation when Covenant III expired at the end of 2005.

switch from non-reusable to reusable packaging or greater use of recycled materials or will lead to greater recyclability.

Companies placing more than 10 tonnes of packaging on the market each year must prepare a prevention plan every three years and report on the results achieved. Plans must relate to both consumer packaging and commercial and industrial packaging. The authorities have the right to reject a plan considered inadequate and to require a new plan to be submitted. To help small companies, businesses may entrust the preparation of these reports to a third party, and in 2004 there were 397 individual plans and 25 sectoral plans.¹⁵

40 of the individual plans submitted in 2004 were rejected by the Inter-regional Packaging Commission, and all of the sectoral plans were considered too weak. Following revisions, 38 of the resubmitted individual plans were accepted, and 23 sectoral plans.

The Inter-regional Packaging Commission publishes guidelines for trade associations on how to draw up prevention plans on behalf of their members. The guidelines require that submissions indicate what prevention measures have been taken for each product or group of products, as set out in the FOST Plus product nomenclature (for consumer packaging) and in a nomenclature of industrial products (for commercial and industrial packaging).

The guidelines define 'prevention' broadly, using the definition in the Directive, which refers to reducing the environmental impact of packaging and packaging waste at all stages from production to disposal – increasing the proportion of recyclable or reusable packaging, reducing the use of hazardous substances in packaging and so on.

The guidelines consider lightweighting only where less of the same material is used in a pack. Substituting one material for another is not considered prevention. On the other hand, the guidelines stress that 'credit' will be given for measures taken in the past and that submissions may indicate that prevention measures were taken but had to be abandoned, provided the reasons for the abandonment are explained.

The Belgian authorities have stressed that the quality of the plans can only be assessed when the three annual implementation reports have been received. Experience over the years has shown that analysis of the plans is much easier if there is a standard format for them – 90% of the individual plans submitted in 2004 used the standard format, though this was not compulsory. It is more difficult to standardise sectoral plans because of the greater number and variety of measures proposed, and this makes these plans much more difficult to assess.

According to a report compiled for the EU Commission,¹⁶ the administrative burden to the Belgian public authorities of monitoring these plans amounts to the equivalent of one person full-time or about €100,000 per year.

¹⁵ *Australia's Packaging Covenant* includes a similar Action Plan concept, but with a much broader focus. Companies and industry associations signing up to the Covenant must submit an Action Plan (of one to five years duration) showing how they can best contribute to environmental improvement (choosing as appropriate from a long list of subject-headings). They must report annually on the results. If a plan is rejected, its authors are removed from the list of Covenant signatories and have to comply with more prescriptive regulations.

¹⁶ PIRA International Ltd and ECOLAS N.V. (2005), *Study on the implementation of Directive 94/62/EC on packaging and packaging waste and options to strengthen prevention and re-use of packaging*.

Spanish law set a 10% packaging waste reduction target, measured using the formula K_r/K_p , where K_r is the total quantity by weight of packaging waste arising in a year and K_p the total quantity by weight of packaged products consumed the same year. The baselines were the calendar years 1997 and 2001 – the requirements have not been updated since. When the formula is used for concentrated products, both the functional dose and the equivalent quantity should be taken into account when quantifying the K_p variable.

By taking the total quantity of packaged products consumed, the target took account of economic growth when measuring achievement of the reduction target. It also gave ‘credit’ to industry for switching to concentrates or to larger pack sizes.

Spain, like Belgium, allowed some flexibility to deal with any problems arising from the choice of baseline year. Thus Spanish prevention plans were allowed to take account of reduction already achieved in the years immediately prior to the entry into force of the law, where evidence of this reduction was available.

Companies are required to produce ‘prevention plans’ aimed at minimising packaging waste, unless the tonnages of packaging waste they generate per annum fall below the thresholds laid down – 250 tonnes for glass, 50 tonnes for steel, 30 tonnes for aluminium, 21 tonnes for plastics, 14 tonnes for board or composites, 16 tonnes for wood and 350 tonnes for all materials. Prevention plans must contain quantified prevention targets and measures to achieve them.

Plans must be submitted every three years, but are to be revised every time there is a ‘significant change’ in production or in the type of packaging used. Once the plan has been approved, evidence must be provided by 31 March each year of the degree to which the objectives set out have been achieved during the previous calendar year.

The Green Dot organisations or trade associations may prepare collective plans on their members’ behalf, but individual companies remain ultimately responsible for implementing the plans. In practice, very few individual plans have been submitted, almost all of them by companies in the business-to-business sector. Most companies have chosen to work through the Green Dot organisation Ecoembes or its sister-organisation Ecovidrio which deals with glass containers.

In *Slovakia*, companies placing more than 10 tonnes of packaging a year on the Slovak market must develop a four-year prevention programme including quantitative prevention targets, measures leading towards the targets and control arrangements to ensure the targets are met. Companies set their own prevention targets – the law does not prescribe a national target.

According to a report compiled for the EU Commission,¹⁷ the quality of the Belgian packaging prevention plans submitted in 1998 was very poor, but the authorities¹⁸ say that although the 2001 plans were also not very good, quality has improved over time as the authors of the plans learn what is expected of them and the authorities develop more useful guidance in the light of experience.¹⁹

¹⁷ PIRA International Ltd and ECOLAS N.V. (2005), *ibid*.

¹⁸ C Auriel, Interregional Packaging Commission (2005): *Prevention Business Plans in Belgium*.

¹⁹ The Action Plans produced under the Australian Packaging Covenant were also much better the second time around.

10.4 Enforcement of the Essential Requirements

In Western Europe only France and the UK appear to have an enforcement regime in place, though Bulgaria, the Czech Republic, Denmark, Hungary and Slovenia have prescribed in varying levels of detail what companies should do to comply. In France and the UK, documentation demonstrating compliance must be made available to an enforcement authority within a reasonable period of time after it has been requested.²⁰

So far there have been just four prosecutions, all in the UK. All pleaded guilty in a magistrates court, so the costs were relatively low. Fines ranged from £250 (€330) in the first case to £3000 (€3960) plus £2218 (€2928) prosecution costs in the most recent. The number of successful prosecutions is not a reliable indicator of the effectiveness of enforcement, however – in both France and the UK the authorities have concentrated on raising awareness rather than securing prosecutions, and most infringements have been dealt with through advice or written warnings.

Some member states believe that enforcement of the Essential Requirements is impracticable. They say that the key Essential Requirement, that *“packaging shall be so manufactured that the packaging volume and weight be limited to the minimum adequate amount to maintain the necessary level of safety, hygiene and acceptance for the packed product to the consumer”* is too subjective for enforcement purposes. The CEN standards are intended to provide guidance on how to comply with the Essential Requirements, but by adopting a management systems approach rather than laying down pass/fail criteria they do not enable enforcement authorities to assess clearly and indisputably whether a particular packaging item complies or not.

The legislation and standards have to be equally applicable to the packaging systems for chicken portions, fresh tomatoes, chocolates, drinks, computers and televisions – sales packaging, any secondary packaging and transport packaging. We expect them all to arrive in perfect condition, but the protection needed for a packaged item that has to cross the Irish Sea may be considerably greater than for an item that will only undergo short road journeys. Only the producer will know what stresses and strains the packaging must withstand, so it is impossible for legislators and enforcement authorities to micromanage effectively.

For a very limited range of products, legislation in South Korea and Taiwan prescribes a ratio of product volume to packaging volume by means of a ‘maximum empty space ratio’, and also limits the number of layers of packaging that may be used for these items.²¹ The CEN experts considered this approach when working on the European packaging standards, but they rejected it because it would be only applicable to certain products and so would be distortive, and because it could stand in the way of technological progress. In any case, legislation of this type could not be introduced by Ireland unilaterally because of EU Single Market rules.

In France and the UK, where there has been active enforcement, companies have been selected for inspection on the basis of specific complaints received, routine inspections for compliance with this and other legislation, and specific sampling projects based on trade sectors, taking account of which types of pack have the largest impact on waste. So

²⁰ 15 days in France, 28 days in the UK.

²¹ In Korea, cosmetics, liquid powder detergent packed in plastic containers, shampoo and rinses, wet tissues, powdered coffee, crayons and watercolours; in Taiwan, pastries, cosmetics, alcoholic drinks, computer disks and processed foods. Exceptions can be allowed upon submission of a detailed file justifying exemption.

companies are at particular risk if ordinary consumers see what they regard as excessive packaging and feel strongly enough about it to make a complaint.

A more direct threat to companies supplying packaging materials or components, finished packaging or packaged goods is that they may be asked to demonstrate compliance with the Essential Requirements by a customer or potential customer further along the supply chain. The UK enforcement authorities, for instance, say that packer/fillers, brandowners and importers must show that they have taken 'all reasonable steps' to ensure their packaging complies with the Essential Requirements. They must have a system of control appropriate to their business which covers all regulatory requirements, operate the system properly, document it, and identify all reasonable steps and take them. Packer/fillers cannot pass on responsibility for compliance. To demonstrate 'due diligence' in the UK, companies need to audit suppliers' quality systems and undertake random testing of packaging materials. Due diligence means not only documenting why further minimisation is not possible but also having regard to ongoing developments which might alter this decision.

Thus companies can protect themselves against possible prosecution by demanding written evidence that suppliers are respecting the Essential Requirements – retailers and importers demand evidence from suppliers of packaged goods, packers and fillers demand evidence from packaging suppliers, and packaging manufacturers demand evidence from component and raw materials suppliers.

The purpose of the exercise is not simply to justify the legality of the pack to the enforcement authorities, but to ensure that packaging is subjected to a process of continuous improvement through repeated re-evaluations as circumstances change. As technology develops, it may be possible to reduce the weight of the pack, or perhaps make it more easily recyclable.

The enforcement authorities in France and the UK recognise that it is not possible for companies to carry out assessments of their entire packaging range overnight. The recommended course of action was to set up a system so that all new types of pack or packaging changes are assessed as they are introduced, and that assessments are gradually carried out on packs already on the market. Priority should be given to pack types sold in large volumes and to packs which have been in use for a long time, where there may be particular potential for improvement.

The Swedish authorities decided on a looser approach. Instead of having detailed regulations on conformity with the Essential Requirements, industry agreed to prepare and police a Code of Practice. The authorities accept compliance with the Code as conformity with the Essential Requirements – there is no regulatory control on how the Code is applied.

The Swedish Code of Practice was drawn up by Miljöpack, part of the STFI-Packforsk packaging institute. It follows the same sort of checklist approach as the CEN standards. Miljöpack believes that compliance is straightforward if companies simply add the Essential Requirements to the procedures they are already following under ISO 9000. Miljöpack operates a helpdesk and there is a clearing centre for information so that companies using the same type of packaging do not have to duplicate each other's work.

The same approach is broadly followed in the other Nordic countries. Denmark, Finland, Iceland, Norway and Sweden collaborated in the publicly-funded Opti-Pack programme which developed a guide to help companies comply with the CEN standards and the Directive's Essential Requirements.

10.5 The CEN standards

CEN, the European standards body, was mandated by the Commission to draw up a set of standards amplifying the Essential Requirements for the benefit of companies that have to comply with them. Use of these standards is voluntary, and companies are free to find alternative ways of satisfying the enforcement authorities that their packaging complies with the Essential Requirements. However, use of the CEN standards has the effect of reversing the burden of proof. Member states are obliged to presume that packaging manufactured in accordance with the standards is in conformity with the Essential Requirements, whereas companies opting for other ways of demonstrating compliance must show that their systems do result in conformity with the Essential Requirements. Thus legislation and government guidance notes tend to assume that companies are most likely to use the standards to demonstrate compliance.

The CEN standards are based on a management system approach. The aim is not to ensure compliance with a specified minimum level of performance but to ensure continuous environmental improvement. To use the standards, companies must work methodically through a checklist to ensure that their decisions take account of the often conflicting social, environmental and economic factors affecting the choice of packaging, and find a solution that is right for the product, for the distribution system and for how it will eventually be stored and used.

CEN standard EN 13428:2004 on packaging prevention by source reduction requires standards users to identify the 'critical area' which prevents them from reducing their packaging further. If packaging is minimised beyond the 'critical area', it will not meet key criteria such as product protection, compatibility with the packaging manufacturing process and the packing/filling process, logistics, product presentation and marketing, user/consumer acceptance, the information that has to be provided on or in the pack, safety requirements, legislation and anything else which is relevant to this particular product.

The enforcement authorities can verify compliance with the standard by asking the producer to demonstrate the steps that have been taken to identify the 'critical area'. If the critical area has not been identified, the packaging is not in compliance with the standard and the packer or filler needs to investigate the potential for further reduction. If on the other hand tests show that further reduction would result in an unacceptable increase in the packaging failure rate, the critical point has already been reached.

An 'unacceptable' failure rate must be a matter of commercial judgment – it may be different for a high-value product than a low-value item, and for products where leakage could endanger people or property.

The packaging manufacturing or packing/filling process also has to be taken into account. It may only be possible for the packer/filler to reduce his packaging further if he buys new machinery. This is not expected or demanded, as it may not be economically practicable or environmentally desirable to scrap equipment before it reaches the end of its life.

It is not possible to comply with the standard by simply using plastic containers instead of glass to lightweighting your packaging – substitution of one material for another does not count as source reduction. The standard is based on the principle that companies should do the best they can with the materials and equipment they have. If they are using glass containers, they must try to minimise the weight of glass in each container; if they are using plastic containers, they must try to minimise their plastics usage.

For imported products, the importer must be sure that the overseas suppliers have done everything they should do. The importer does not add any more information but has to provide data on request to a customer and the enforcement agency.

10.6 Packaging reduction targets versus enforcement of the Essential Requirements: comparison of effectiveness

Lightweighting is not new, and it is difficult to distinguish between the impact of the various national source reduction policies and changes in packaging design that would have resulted anyway as a result of commercial pressures.

Two studies have been carried out on how companies have been complying with the Essential Requirements. One,²² commissioned from Perchards by the UK Department of Trade and Industry, examined implementation in the UK by 22 large and medium-sized businesses; the other²³ was commissioned from FFact Management Consultants by EUROOPEN, and reviewed implementation across Europe by 17 production units from ten international companies in membership of EUROOPEN.

These were both quite small-scale surveys of companies known to be giving serious attention to the Essential Requirements – they did not purport to be an analysis of the impact of the Essential Requirements on the market as a whole. Nevertheless, the studies showed how actions permeate through the supply chain. 18 of the 22 respondents to the UK study said that application of the procedures had resulted in changes to their packaging, and both studies showed that companies that had set up procedures for compliance with the Essential Requirements were generally using them Europe-wide or even worldwide.²⁴ It is clear that the CEN standards are becoming de facto world standards – and, indeed, some countries outside Europe are interested in adopting them as ISO standards.

This notwithstanding, it is clear that many European companies, particularly those working at a national level rather than EU-wide, are taking no action to ensure compliance with the Essential Requirements. There are also indications that after an initial flurry of activity the UK enforcement authorities are slackening off their efforts in this field in favour of other priorities. One reason for this may be that they have found few abuses worth prosecuting; another may be that it is too difficult to obtain convictions.

David Miliband, then UK Secretary of State for the environment, wrote to the Environment Commissioner in May 2007 suggesting that the Commission should review the Directive's requirements on minimisation so that more effective enforcement action can be taken against clear cases of excessive packaging. "*Subjective criteria such as 'consumer acceptance' and 'product presentation and marketing' enables companies to claim that the amount of packaging used is not 'excessive' and so makes enforcement of the Regulations very difficult,*" he said.

²² Perchards (2003), *Impacts of the Packaging (Essential Requirements) Regulations – a brief survey* (www.dti.gov.uk/sustainability/packagingfinalreport.pdf).

²³ FFact Management Consultants (2003), *Compliance with the Packaging and Packaging Waste Directive's Essential Requirements for Source Reduction – a survey of best practices of EUROOPEN member companies*.

²⁴ For a more detailed discussion of the findings of these two studies, see Perchards et al (2005), *Study on the progress of implementation and impact of Directive 94/62/EC on packaging and packaging waste on the functioning of the Internal Market* (http://ec.europa.eu/enterprise/environment/reports_studies/studies/report_packaging_direct.pdf).

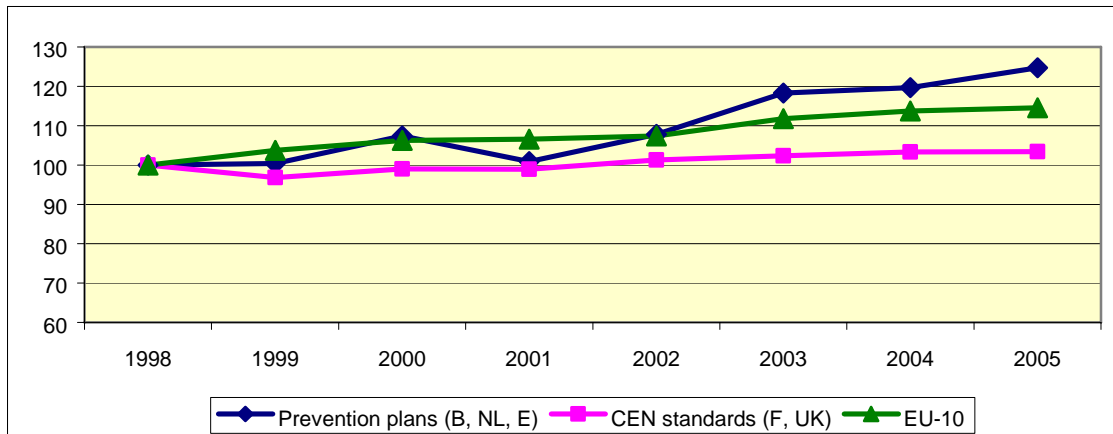
We are not entirely convinced by this point of view:

- The fact that there have been four convictions and that no prosecution in the UK has as yet been contested demonstrates that enforcement is not impossible;
- what seems to the layman to be an obvious case of excessive packaging may not be so clear when subjected to expert case-by-case scrutiny;²⁵ and
- it is always possible for the enforcement authorities to challenge the ‘consumer acceptability’ defence by demanding evidence that the producer has tested this. Evidence could be market research results, or the findings from benchmarking exercises – if a competitor changed his packaging, what effect did that have in the market-place?

We understand that the Commission intends to engage consultants to carry out a study on implementation and use of the Essential Requirements and will then decide if further action is needed, such as amending the Essential Requirements or devising better enforcement methods. We welcome this development.

In the meantime, the only way of using statistical evidence to compare the effectiveness of the prevention targets and plans versus enforcement of the Essential Requirements is to look at the evolution of packaging tonnages in

- (1) the EU-15 member states with prevention targets and plans (Belgium, Spain and until the end of 2005, the Netherlands);
- (2) the EU-15 member states with an enforcement regime for the Essential Requirements (France and the UK); and
- (3) the EU-15 member states with neither (“EU-10”).



There may be arguments about the consistency of the methodology from year to year,²⁶ but there is at least a prima facie indication that enforcement of the Essential Requirements might have some effect whereas the imposition of packaging reduction targets apparently does not.

²⁵ Sections of the British press have been campaigning against over-packaging, but many of the specific complaints were misinformed. For instance, Cucumber Growers' Association tests show that unwrapped cucumbers are unsaleable after 3 days, whereas just 1.5g of plastic wrapping keeps them fresh for 14 days. An unpublished ERM study for a major UK retailer which compared apples sold loose and apples sold four in a shrinkwrapped tray found that when they were sold loose, there was 27% more waste (bruised apples and used packaging) between orchard to home.

The pros and cons of these two alternatives are as follows:

PREVENTION TARGETS AND PLANS	ENFORCEMENT OF THE ERs AND USE OF THE CEN STANDARDS
Each sector may offer no more than it knows can be easily done, leaving the other sectors to make up the difference.	Continuous improvement, if all potential changes in equipment, materials and design are checked against the standards.
In contributing to sectoral plans, companies will not want to divulge their own planned innovations.	Application of the standards is specific to the products of the standards user and to the distribution channels the products will flow through.
Plans made publicly available.	Supporting documentation confidential, but must be made available to the enforcement authorities on request.
Sectoral results measurable, but only after implementation reports received (1-3 years after plan submitted).	National results measurable, but only after member states have reported for the year in question (1½-2½ years later).
Enforcement authorities can check whether plans submitted.	Enforcement authorities can check whether companies have used the standards properly, i.e. whether they are asking themselves the right questions and documenting the answers.
Enforcement authorities cannot use the system to check whether or not a particular pack complies with the Essential Requirements.	Enforcement authorities cannot use the system to check whether or not a particular pack complies with the Essential Requirements.

Enforcement of the Essential Requirements does compel companies to pay specific attention to the design of their packaging, whereas the preparation of prevention plans may simply be a paper exercise based on knowledge of packaging developments already in the pipeline. There is no way of enforcing the packaging prevention targets, and this discourages rigour in the development of packaging prevention plans.

But although enforcement of the Essential Requirements and use of the CEN standards has made a difference, it does not provide the enforcement authorities with a tool to determine whether an individual pack meets the requirements or not. We have already dismissed the Korean and Taiwanese approach as not only flawed but also impracticable in the European context, but how hard should we be trying to find an alternative pass/fail system?

²⁶ Our source was the data submitted by the member states to the Commission, published on the DG Environment website at <http://ec.europa.eu/environment/waste/packaging/data.htm>. The Commission's data series goes back to 1997 but we have chosen to use 1998 as our baseline. The reason is that 1997 was the first year of reporting, before the methodology settled down, and there are doubts about the reliability of those initial reports.

The following table compares the management systems approach of the CEN standards with a pass/fail approach:

MANAGEMENT SYSTEMS APPROACH	PASS/FAIL APPROACH
Continuous improvement.	Meet requirements and stop.
Enforcement authorities can check system is working but cannot assess each pack.	Enforcement authorities can check the legality of every pack.
But this reflects the reality that the sales pack is only part of the total packaging system, and company experts are best placed to assess the possible trade-offs.	Legal requirements cannot take account of trade-offs between sales and tertiary packaging, or the different risks which depend on the nature of the product and distribution channel.

This suggests that for all its drawbacks, enforcement of the Essential Requirements and use of the CEN standards is a better option than prevention targets and mandatory prevention plans or the development of some form of pass/fail requirements.

The European Commission seems to agree with us. Its report to the Council and European Parliament on the implementation of the Packaging and Packaging Waste Directive, adopted on 6 December 2006, concluded that packaging prevention targets would not work and could even be counter-productive. Policy should focus more on sustainable production and consumption than on packaging prevention *per se*, since the demand for packaging is driven by the demand for packaged goods. Thus, packaging should be addressed as part of the waste prevention programmes which member states will draw up in the context of the Thematic Strategy.

In general, the Commission said, packaging is not produced as a good in itself but as a tool to allow the distribution of other packaged goods. Packaging is a cost factor, so preventing packaging is in the interest of the producer of the packaged good. At the same time, packaging is also an important branding and marketing tool, which means that more packaging may be used to contain goods than is actually needed for their protection during distribution. Taking all the functions of packaging into account, it is often difficult to draw an exact line between the acceptable use of packaging as a marketing tool and unnecessary 'over-packaging'.

The Commission went on to say that the implementation of prevention targets would be less straightforward than it may seem:

- The enforcement of prevention targets can pose a problem for the member states because it is unclear how such targets could be translated to individual companies.
- Targets need a valid indicator, and the weight of the packaging is not necessarily a good indicator of its environmental impact. Weight-related targets would disadvantage heavier but not necessarily less environmentally friendly packaging materials, and (percentage reduction) targets applied equally to every producer would disfavour those producers who already use the minimum possible amount of packaging. For such producers, further reductions may lead to product spillage which would often cause significantly more environmental damage than the possible environmental benefits related to savings on packaging.

The Commission added that it considers that a proper enforcement of the Essential Requirements would contribute further to the creation of a level playing-field within the Internal Market. Lack of progress on the Essential Requirements represents a major problem.

10.7 Establishment of an independent ‘packaging watchdog’

Since most of the packaged goods sold in Ireland originate from the UK, it could be argued that enforcement of the Essential Requirements in Ireland would add little to what is already being done in the UK. Irish enforcement would largely focus on relatively small companies which are individually responsible for only a tiny proportion of the packaging placed on the Irish market and which may in many cases lack the resources needed for a systematic approach to packaging minimisation.

This would not prevent the Irish enforcement authorities from intervening when they believe that they have identified a flagrant example of over-packaging, but an alternative approach based on ‘naming and shaming’ rather than the threat of prosecution might be more cost-effective for the public purse.

A Packaging Standards Council (PSC) was set up in the UK in 1992 to encourage and promote good practice and seek continuous improvement in all aspects of packaging design. It administered a Code of Practice setting out the functional, social and environmental criteria for good packaging practice and served as a contact point for those making enquiries or complaints about packaging – not just over-packaging, but also practical concerns such as openability by the aged.²⁷ It investigated complaints and published the outcomes, whether good or bad. This service was managed by an experienced packaging technologist, supervised by a Council drawn from local government, trading standards, environmental science, consumer affairs, environmental affairs, marketing and communications and the retailing, consumer goods and packaging sectors, and chaired by a former European Commissioner.

It is important to stress that the PSC was never intended to be the first port of call for consumer or other complaints. Complaints are a valuable source of feedback for retailers and for consumer goods companies, and they would not have welcomed being by-passed. The PSC took on issues when the complainant had failed to get a satisfactory response from the company concerned.

The PSC’s findings achieved reasonable press coverage, which not only embarrassed companies whose explanations had failed to convince, but also gave industry an opportunity to explain functional issues which might not be obvious to the layman.²⁸ However, funding was always a problem. To be seen to be objective, the PSC needed 50/50 funding from the public sector and the private sector, but the only financial support available came from INCPEN, the Industry Council for Packaging and the Environment. INCPEN’s resources were stretched, and the PSC was closed in 1996. Ironically, its closure coincided with an announcement from the French Environment Ministry that France was setting up an equivalent body.

A similar body might be set up in Ireland. There would be no need to create a new Code of Practice if the object were simply to combat over-packaging – Article 24 and the Third Schedule to the Regulations would suffice. On the other hand, a body with such a restricted focus would almost certainly be underemployed, so there might be a case for giving this body a wider brief.

²⁷ The PSC carried out a European Commission-funded study aimed at making packaging easier for older and less able people to handle.

²⁸ 38% of the complaints received were upheld, and after liaison with the companies concerned 75% of these led to packaging improvements.

We believe that it is essential that any such ‘packaging watchdog’ is seen to be independent. This might rule out its being run by IBEC or Repak, but one or other of these organisations could perhaps provide office space and facilities to a retiree with the necessary expertise. The Office of Environmental Enforcement would however provide a more suitable base if this is possible. The principle of 50/50 funding from the public sector and the private sector seems to us right.

10.8 Negotiating a binding packaging reduction commitment with leading retailers and brands

In July 2004 WRAP signed up 13 leading UK retailers to ‘The Courtauld Commitment’, and by autumn 2006 it had secured the support of branded goods companies representing 92% of the grocery market. The Commitment is aimed at designing out packaging waste growth by 2008, delivering absolute reductions in packaging waste by March 2010 and identifying ways to tackle food waste.

The targets announced by the retail chains are as follows:

- Asda – 25% packaging reduction target for own-label food products by 2008;
- Marks & Spencer – 25% reduction in non-glass packaging by 2012;
- Morrisons – 15% reduction in own-label packaging by 2010;
- J Sainsbury – 5% overall packaging reduction by 2008 and 25% packaging reduction for fresh produce by May 2008;
- Tesco – 25% reduction in all packaging, branded as well as own-label, by 2010;
- Waitrose – to keep future packaging levels below 2002 levels and to cut *growth* in packaging waste by 15% in 2006.

The retailers have left it to their suppliers to find ways of meeting these targets, but being challenged in this way by key customers certainly concentrates the mind. These are not legal targets, however, and since the retail trade will be keen to ensure that the functional requirements of its packaging is not compromised, there will doubtless be scope for flexibility if these targets prove impossible to meet in practice. On the other hand, packaged goods companies have expressed concern that these various initiatives may come to conflicting conclusions about preferred options.

At the Repak Recycling Awards Gala Dinner in October 2007, the Environment Minister said that the UK’s Courtauld Commitment pointed the way forward for packaging minimisation. *“Consumers want to see evidence when they are shopping that the store and the manufacturer are as concerned about recycling and waste prevention as they are. Tonight I am challenging Irish industry – if it can be done in the UK, why not here?”*

Packaged goods imported from the UK will already be designed with the Courtauld Commitment in mind, and it would be important to ensure that there is no ‘double jeopardy’. The baseline for any packaging reduction target set by Irish retailers would be later than that set by their UK counterparts, and it would be unreasonable – and probably unfeasible – to expect these suppliers to carry out a second round of reductions over and above that demanded in the UK.

Irish retailers could set a packaging reduction target for Irish suppliers and for imports from countries other than the UK, but that would probably have value only in sectors where there is no competition from abroad. Where Irish suppliers are competing with British companies, the retail trade could no doubt ask the Irish firms to match any packaging innovations coming from the UK. Our case studies suggest that this might happen automatically, since benchmarking against competitors already goes on and because Irish companies often source their packaging either from UK companies or from Irish companies whose major market is the UK.