



# ENVIRONMENTAL BRIEFING

A CONTRIBUTION TOWARDS SUSTAINABLE DEVELOPMENT FROM THE EUROPEAN PRODUCERS OF STEEL FOR PACKAGING

*“We must preserve both the industry that is our living and the environment that supports our life” - Hubert Reeves*

January 2002

## *Recycling of Packaging and Barriers to Trade*

Article 7 of the European Directive on Packaging and Packaging Waste states that “collection systems for recycling shall be designed so as to avoid barriers to trade or distortions of competition in conformity with the Treaty”. It further states that “collection systems for recycling ... shall form part of a policy covering all packaging and packaging waste”. This Briefing is concerned with the practical application of these principles.

### DEPOSIT SYSTEMS - THE FALLACIES

In several EU Member States, there are very real threats to all one-way beverage packaging. This is because such containers are considered to be unfavourable towards the environment. Refillable containers, on the other hand, are regarded as being kind to the environment.

As you may have read in our previous “Environmental Briefing n°1” of July 2001, there is no scientific justification for this discrimination between so-called “favourable” and “unfavourable” packs. A report by the Dutch environmental consultancy TNO clearly demonstrates that any quantified differences in environmental impact between one-way and refillable packaging are insufficient to allow differentiation between them on environmental grounds.

To add to the fallacy, deposit systems are assumed to be the panacea and impact upon all one-way beverage containers in the same way. However, this is not the case. Indeed, they can promote some one-way containers at the unjustified expense of others. Furthermore, deposit schemes are extremely costly and can undermine the economics of comprehensive recycling schemes which would otherwise be economically efficient. This short article explores these important issues.

### WHAT IS A DEPOSIT?

#### WHY HAVE DEPOSIT SCHEMES BEEN IMPLEMENTED IN A NUMBER OF COUNTRIES IN THE WORLD?

Deposit systems are normally used for collecting refillable beverage containers only. Initially, they were used for collecting refillable glass containers, but in 1971 the state of Oregon in the USA introduced a deposit for one-way containers. Oregon passed the first bottle bill as an anti-litter law in 1971. Nine other US states implemented deposit schemes for collecting one-way beverage containers. However, in recent years no deposit schemes have been introduced in the USA, as their high cost and inefficiency has become apparent. They have been superseded by multi-material selective collection schemes.

Another reason often given for the introduction of a deposit scheme for one way beverage containers is that it will protect the refillable proportion of a market. In practice, deposit systems themselves have not produced this result, and the belief that refillable containers are somehow environmentally preferable is in any case a misconception. Indeed, the introduction of mandatory deposits in 10 of the 50 American States has accelerated the decline of refillable beverage containers. In Sweden, the market share of refillable glass bottles for beer has also decreased from about 50% to 30%, since a deposit scheme specifically for the collection and recycling of aluminium beverage cans was introduced in 1984 as a consequence of the Swedish Can Recycling Act of 1982.



► **HOW DOES A DEPOSIT SCHEME WORK ?**

The consumer pays a deposit when he buys a drink packed in a one-way container which he will claim back when he brings back the empty beverage container to the retailer or reverse vending machine. The unclaimed deposits help finance the cost of such a system.

Unfortunately, the more successful the scheme, the greater the costs, but the fewer are the unclaimed deposits to fund it. For steel, it has been calculated that the system would be self sufficient if less than 79 % of the steel containers were brought back by the consumers. This level would be commendable, but the aim of a deposit system is normally to reach recycling rates which are much higher than this, and are often unrealistically set at 90% or more. When one reaches high recycling rates (>79%) the system is not financially self supporting and industry needs to pour in money every year to keep the system functioning.

The second source of revenue within a deposit scheme is the market value of the collected material. Unfortunately, the very high costs of a deposit scheme tend to over-emphasise the importance of scrap value, rather than environmental efficiency, and it therefore promotes materials with high monetary value rather than “environmental value” (e.g. resource efficiency). Environmental value and monetary value are often inversely related.

In the recent EUROPEAN report <sup>(1)</sup> on the use of economic instruments, it is stated (page 21) :

*“The Commission has stressed that a compulsory deposit system for single-use plastic bottles is incompatible with Article 28 ( ex-Article 30) of the Treaty, insofar as the regulation authorises only one system for returning bottles which could induce retailers, particularly small traders, to give up selling drinks in plastic bottles. The Commission also attacked the fact that the deposit on single-use containers was much higher than for refillable glass bottles ( Infringement 1104/88 Letter of Formal Notice re the German Ordinance on plastic bottles)”.*

An OECD monograph<sup>(2)</sup>, as mentioned on page 8 of the EUROPEAN report, explains that “deposit-refund systems will create barriers to trade” if:

- foreign producers see that the costs of participating in a co-operative retrieval and recycling scheme are out of proportion to their market share,

- non-returnable containers are an important condition for the competitiveness of imports,

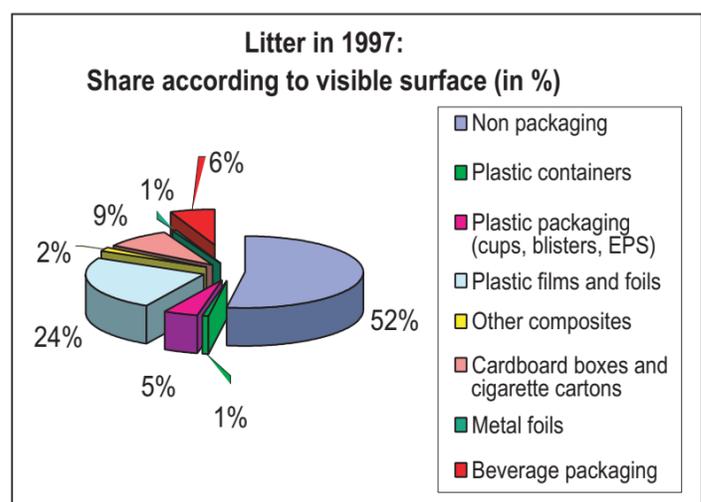
- they are applied only to certain types of containers or packaging which are primarily used for imported products”.

**DEPOSITS ON BEVERAGE CONTAINERS ARE CLAIMED TO BE AN EFFECTIVE WAY OF SOLVING THE LITTER PROBLEM SOCIETY IS FACING. IS THIS REALLY SO?**

**Beverage packaging represents only 6% of total visible litter.** According to a study carried out in 1997 in Germany (3) by TÜV only 6% of the litter was due to beverage packaging (see graph).

**NO, DEPOSITS DO NOT SOLVE LITTER PROBLEMS IN EUROPE**

This is because littering is not linked solely to one way beverage packaging, but to other sources of visual pollution, such as films and foils (24%), non packaging (52%), cardboard boxes and cigarette cartons (9%). No one has yet suggested putting a deposit on cigarette packets or plastic films!



**DEPOSITS COVER ONLY BEVERAGE PACKAGING**

Although very high recycling rates are claimed for some deposit systems, it must be borne in mind that they cover only beverage packaging. In Sweden, an 86%, recycling rate is claimed but this covers only the beverage segment of the total packaging market, which varies in importance from country to country.

On average in Europe, the beverage packaging market sector represents only 16% by weight of the steel packaging mix. However, considering for the moment beverage cans alone, steel drinks cans represent about 50% of the total EU beverage can market.

# ENVIRONMENTAL BRIEFING

Two conclusions arise from these facts:

1. recycling schemes will collect much more packaging if they cover all sectors, not just beverage
2. where there are beverage-only recycling schemes, they need to be suitable for both steel and aluminium

The recycling rate for the packaging sector taken as a whole is often very different from the recycling rate claimed for a narrowly-focussed deposit scheme. For example, taking the Swedish example again, the latest recycling figures (1999) for all sectors show that only aluminium, at 33%, did not meet the Swedish government's 50% recycling target for the material across all packaging sectors. This is proof of the inappropriateness of focusing attention solely on the beverage segment when organising recycling. The Swedish EPA report shows, on the other hand, that steel reached the target. Thus, despite the high recycling rates claimed for the beverage deposit system, the Swedish EPA agency now suggests a recycling target for all metal packaging (steel plus aluminium), as is also

required in Article 6 of the European Packaging and Packaging Waste Directive, because it realises that the deposit system is not the answer to their recycling problem. The Swedish EPA (4) says:

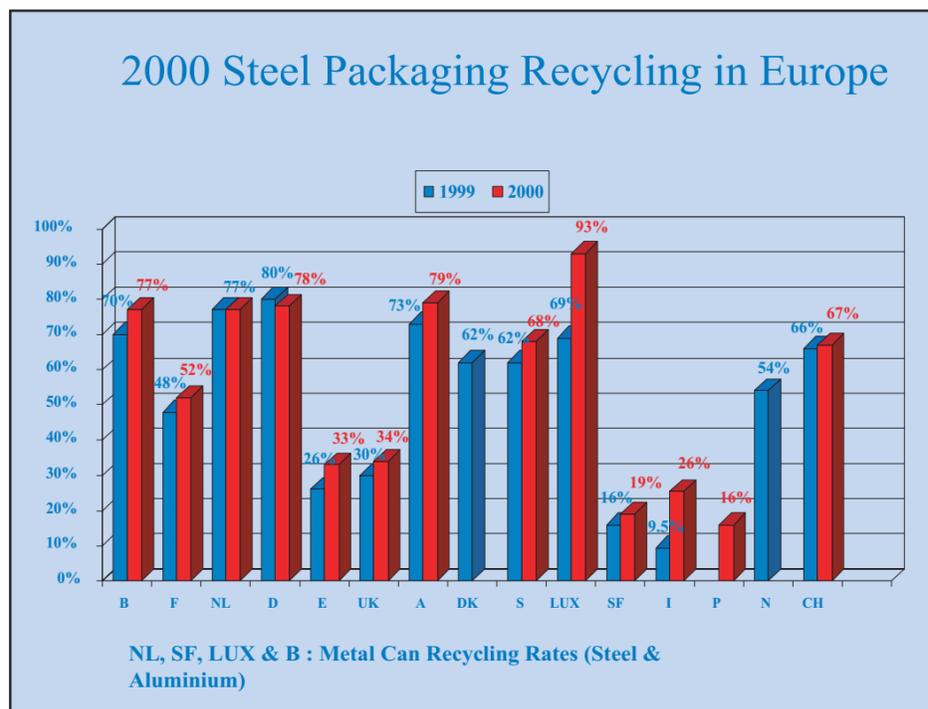
*“Several types of packaging, such as aluminium (both cans and other containers) plastic, paper and cardboard will probably have difficulties in meeting the higher targets ... One way to solve this problem would be to include all types of metal packaging in one target”.*

## THE ADVANTAGES OF MULTI-MATERIAL SYSTEMS

Multi-material kerbside or bring collection schemes can (and should) include both steel and aluminium beverage cans. Even if for one country beverage cans represent an important part in the mix of aluminium packaging, they can always join together with steel packaging in multi-material collection schemes. These are more effective and enable an optimisation of total costs for all materials, which is what all parties (industry, consumers and Government) seek. These multi-material collection schemes usually combine kerbside collection, bring

systems, and integral collection followed by incineration with both magnetic and eddy current extraction for metals. Kerbside is more appropriate for high density population areas, bring systems for low density population areas.

The following graph shows what is achievable for steel and metals, provided that they are collected together in a multi-material system.



However, a deposit which runs in parallel with a multimaterial collection system does not give optimum results. According to in-depth studies, costs double without necessarily increasing recycling, especially when recycling rates are already high, as in The Netherlands, Germany or Belgium.

EUROPEN says in its recent “economic instruments” report (on page 8) that:

*“A high recycling rate ( 80% or more) can be achieved not only through a deposit system, but also through an integral multimaterial collection system for packaging waste. Deposit systems for non-refillable beverage containers risk undermining the economics of collecting other forms of packaging since without the critical mass offered by beverage containers, integral and multimaterial collection systems for packaging are unlikely to be viable. Thus deposit systems for non-refillable beverage containers are inappropriate as a recovery route since they single out packaging for certain products (beverages) from similar packaging.”*

# APEAL

## ENVIRONMENTAL BRIEFING

January 2002

APEAL has information which allows a closer examination of this issue, and believes it is important that this is more widely understood. Some of this information is described in the following section.

### MULTI-MATERIAL SCHEME PERFORMANCE AND DEPOSIT SCHEMES

The costs and efficiencies of

1. kerbside multi-material (selective collection)
2. deposit schemes for one way beverage packaging only
3. a mixture of the two operating side by side

have been studied.

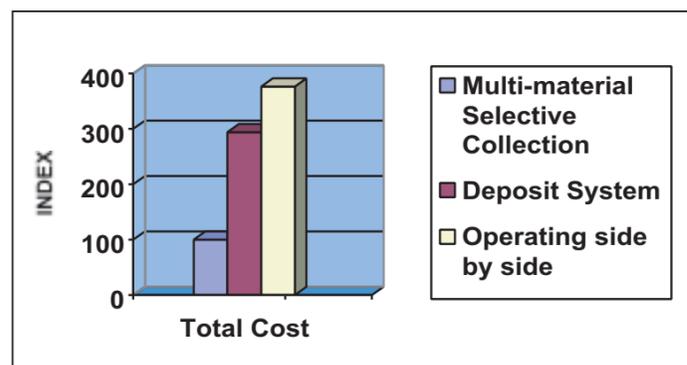
The results are quite remarkable in that they clearly demonstrate not only that deposit schemes are extremely costly, but also that where they operate alongside multi material schemes, the costs escalate without a commensurate increase in the volume recycled. It is clear from the chart below that:

- a deposit system collects less material but costs much more than multi-material selective collection
- a combined system in which both try to operate side by side produces exorbitant costs

The relative effects do of course depend upon the actual market and its composition by material, but the broad

conclusions are unaltered. The clear conclusion is that deposit schemes are unhelpful, inefficient and distort the competition between types of packaging and packaging materials.

### CONCLUSIONS



APEAL continues to believe that deposit schemes for one way beverage containers are a barrier to environmental achievement, economic recycling, and to free trade, and it will continue to present objective information which demonstrates this.

At the same time it will continue to assist in the recycling of steel cans in Europe and elsewhere. Indeed, APEAL is keen to co-operate with other materials and with Governments and communities. Recycling progress demands broad co-operation as in multi-material schemes rather than narrowly focussed divisive systems such as deposit schemes.



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### References

- (1) EUROPEAN report on "Economic Instruments in Packaging and Packaging Waste Policy", October 2000 (downloadable from [www.europen.be](http://www.europen.be))
- (2) OECD monograph: applying economic instruments to packaging waste: practical issues for product charges and deposit - refund system - 1993
- (3) TÜV study of 1997 on littering - Germany
- (4) Swedish Environmental Protection Agency: 1999 yearly report on packaging figures (report no 5078)