

Synopsis of

Effects of PET containers in returnable and non-returnable beverage distribution -

A critical review of economic and ecological aspects of beverages in PET bottles with a closer focus on the German and European market

by

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Introduction

Globally there is a continuing and increasing need for packaging. Packaging protects, transports and announces the products that have become necessary to our twenty first century life style. Without packaging, the economies of the world would be unable to operate.

And yet there is growing concern about packaging. Is there too much? Does it create more problems than it solves? How sustainable are the current solutions?

Packaging is here to stay. The “Big Question” is; which packaging?

The white paper summarized here helps to answer the “Big Question” for a specific sector of industry: beverage manufacture and distribution.

Method

Independent researchers from the Technische Universität Munchen (TUM) have compared published academic and other research reports and other literature on packaging materials and systems with regard to three main aspects:

1. Economic impacts
2. Environmental impacts
3. Legislative impacts

The packaging systems compared were the most commonly used today in the beverage industry:

1. Polyethylene terephthalate (PET)
2. Glass
3. Carton
4. Can

The systems compared were those currently available to the beverage industry:

1. Refillable/re-useable system
2. One use/one way disposable system

Both systems have the ability to recycle the material into new products at the end of life of the packaging.

Conclusion

The major conclusions of this independent TUM study into packaging in the beverage manufacturing and distribution industry were:

Economic impacts:

1. Those companies using one way bottles will spend four or five times more on packaging per litre than those companies using refillable bottles
2. The most economic refillable system is PET

Environmental impacts:

1. Across a range of seven environmental impact indicators (CO₂ emissions, energy use, water pollution, waste creation and others) refillable systems result in the lowest impact
2. The most environmentally positive beverage container is refillable PET

Legislative impacts:

1. The European Union Waste Hierarchy (Directive 2008/98/EC) supports re-use as superior to recycling. Refillable containers are therefore legislatively preferred to disposable systems and so are less likely to suffer negatively from future legislative change on packaging waste rules

In summary the TUM paper concludes that refillable systems are the most sustainable method of beverage packaging on the grounds of economics, environmental impact and legislative security. These benefits will be further improved with rising commodity prices and the use of bottle-to-bottle recycling. The study also places PET refillables at the top of this hierarchy.

Further information

This synopsis was prepared by Petainer. The full TUM paper is available here:

http://petainer.com/Library/PDFs/White_Papers/English/petainer_refillables_whitepaper.pdf

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