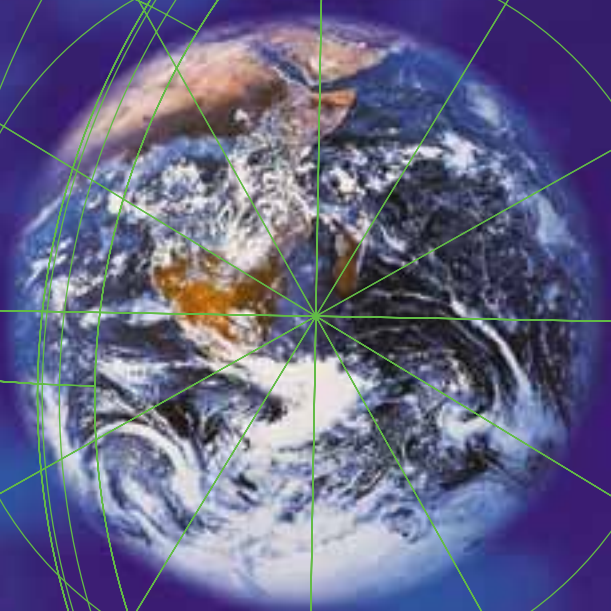


# Steel : the sustainable packaging solution

STEEL FOR PACKAGING

A GREAT ENVIRONMENTAL IDEA

STEEL PACKAGING

# *The dual benefits: protecting both products and the environment*

STEEL FOR PACKAGING...

# Chapter I

*The sustainable credentials of steel packaging*

# Chapter II

*The recycling loop of steel packaging*

# Chapter III

*Fostering awareness of future generations*

*The Association of European Producers of Steel for Packaging*

# ... IN BRIEF

| | |
|---|---|
| LAST NAME : | Steel |
| FIRST NAME : | High-tech material |
| ADDRESS : | The everyday world |
| PROFESSION : | Protect goods and benefit the environment |
| FAMILY: | Thousands of applications and uses |

## *The steel for packaging industry*

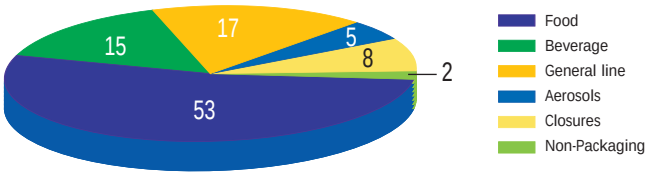
Represents, at EU level, a global annual production of 4.6 million tonnes of steel for packaging, an annual turnover of 3 billion €, with direct and indirect employment in excess of 15,000 people. This represents one third of the estimated steel for packaging production worldwide.

## *Steel for packaging applications*

Steel for packaging is used in a wide variety of applications, such as containers and closures for human and pet foods, beverages, aerosols, personal care, household and automotive care products, industrial products and paints, giftware and promotional products. It is also widely used for hermetically closing glass jars and bottles.


Steel for packaging in Europe represents almost 87% of the annual EU can manufacturers raw material consumption.

Steel for packaging in Europe - split by segment (%)




Together, the raw material suppliers and their customers represent more than 300 companies located all over Europe, with a global turnover of 10.5 billion € per year and the direct and indirect employment of 57,000 people.

## *Types of steel for packaging*

There are two types of steel for packaging: tinplate, which is steel coated on both sides with an ultra-thin layer of tin and tin-free steel or ECCS, which is coated with chromium and chromium oxide.
A new development in the steel for packaging family are polymer-coated steels, which are tinplate, or ECCS, combined with polymer through film lamination or direct extrusion.

## *Steel for packaging - "A Great Marketing Solution"*

Steel for packaging has outstanding mechanical properties, design potential, economic benefits and, last but not least, strong environmental advantages.

# THE SUSTAINABLE CREDENTIALS OF STEEL PACKAGING

# *For steel, recycling comes naturally*

All steel packaging is totally recyclable, and all new steel packaging is partly made of recycled steel packaging scrap. Thanks to its unique magnetic properties, mechanical extraction of steel packaging from mixed waste is highly cost-effective and can easily be automated. As steel scrap is a vital ingredient in all steel-making processes, there is always ample demand for recycled steel.

Steel recycling rates today already far exceed targets set by the European Directive on Packaging and Packaging Waste, with correspondingly large-scale energy savings as an added bonus. Steel for packaging also complies with all essential requirements that the Directive on Packaging and Packaging Waste prescribes. Steel is therefore a renewable material.

# S U S T A I N A B L E

*When it comes to protecting the environment, only one packaging material has the following sustainable credentials to offer:*

- **Steel is made from two of the earth's most abundant natural resources: iron ore and coal**

- **Steel is recycled time and time again, without its quality ever deteriorating**

  - steel features a closed-loop recycling process: all steel products can be recycled into new steel applications

  - steel recycling is widespread in Europe

- **Steel is 100% recyclable and sustainable, and recycled steel is an essential ingredient in the production of new steel**

  - markets for steel scrap are virtually unlimited

  - using scrap to produce steel reduces the amount of raw materials required and saves up to 65% energy, contributing to prevention by source reduction

  - more than half of the steel we see around us has already been recycled from scrap

- **Thanks to its magnetic properties, steel is the most convenient and cost-efficient material to recover for recycling**

- **Very little steel is disposed of in landfills due to the positive economic value of scrap and its wide reuse in the steel industry**

# Steel and the sustainable use of resources

*" When it comes to sustainable development, steel has no equal."*

Steel is an ubiquitous material necessary to build the foundations of society in the same way that iron is an essential element for biological systems.

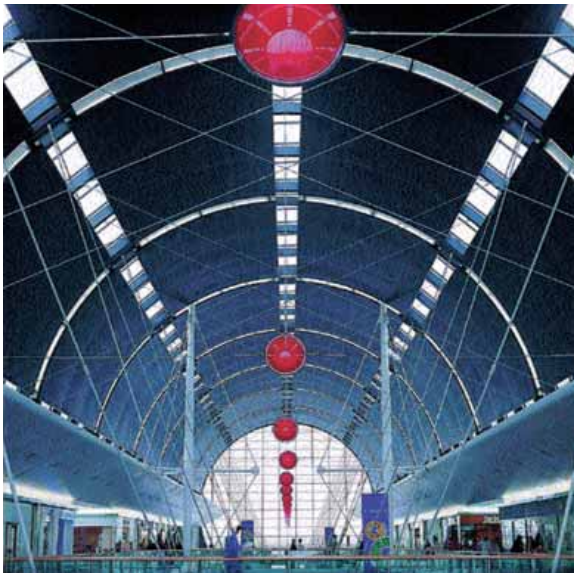
It's therefore no surprise that economic wealth indicators are correlated with steel's apparent consumption per capita.

Steel is an essential material in today's society and an essential material for sustainable development, helping people to satisfy their needs and aspirations. Steel is a part of people's everyday lives in both the developed and developing world. It is used in providing transportation such as automobiles, railroads and buildings - from small housing to large multifamily dwellings - delivering energy such as electricity and natural gas, producing food with tools like tractors and hoes, supplying water with pumps and pipelines, and enabling health care through medical equipment applications.

In addition, all steel for packaging production facilities have environmental and quality performance indicators permanently available. This allows producers to continually monitor and improve their techniques.


*The UltraLight Steel Auto Body (ULSAB) project has been completed and has produced exceptional results: a lightweight steel auto body structure with a weight reduction of 25%*

*ULSAB uses high & ultra high strength steel for more than 90 percent of the body structure to improve structural and environmental performance*



*Centre Cité Europe - Calais (Architect : Paul Andreu)*

*Steel is increasingly becoming a material of choice for environmentally concerned architects, engineers, and builders seeking to make responsible, forward-thinking design decisions*

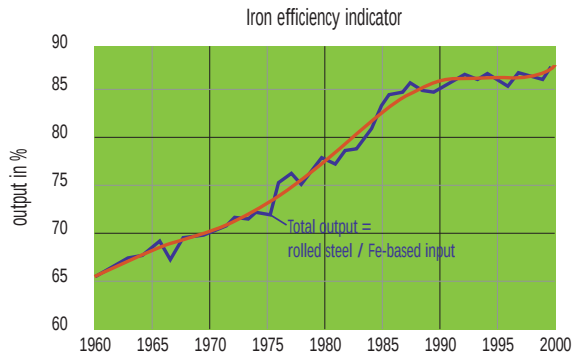
## SUSTAINABILITY OF STEEL PACKAGING

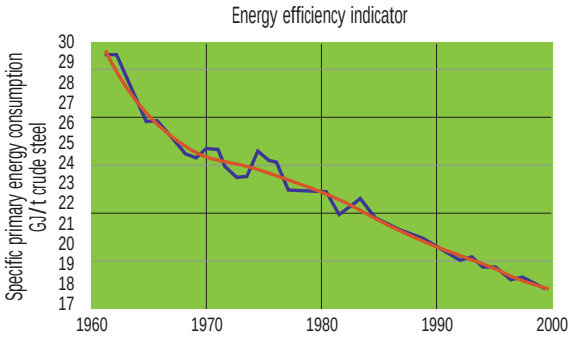
Throughout the years, the steel industry has been concerned about its use of natural resources and its impact on the environment.

Continuous research on steel process optimisation has led to improved energy utilisation and yields, as well as a considerable reduction in the use of resources. As a matter of fact, during the last 50 years, the amount of fossil fuel needed for the production of 1 tonne of steel has been reduced by 40%.

The reduction in resource use was also made possible thanks to increased recycling of steel packaging (+300% over the last decade) and continuous weight reduction of steel packaging (-30% for a drinks can over the last 30 years).

## Efficient Use of Resources by the Steel Industry




Source : Stahlinstitut Vdeh

### STEEL MAKING - AN ENERGY EFFICIENT PROCESS

The steel industry's generation of carbon dioxide ($CO_2$) is mainly associated with the chemical reaction of carbon and iron ore in blast furnaces producing molten iron, which is then converted to steel.

The minimisation of energy input has always been a major challenge for European steelmakers. A dramatic reduction of carbon input/output has been achieved in recent years. In fact, research and development has progressed so much that theoretical limits, according to the laws of physics, are quickly being approached.

In addition, $CO_2$ emissions per tonne of crude steel output are 50% lower than 40 years ago.

Today, steel producers use the most sophisticated energy and gas management systems in their processes for optimised use of energy:

- gaseous by-products are used as fuel, replacing primary energy
- thermal energy in cooling water, exhausted gases, and residual products is, to a high degree, recovered for use elsewhere

A case in point : the specific consumption of primary energy per tonne of crude steel produced dropped by nearly 40% over the last 40 years.

### STEEL MAKING - AN EFFICIENT USE OF RESOURCES

For the primary production of steel for packaging, the following metal and mineral resources are essential: iron ore, coal and limestone. These resources are abundant as is shown in the following chart :

| Resource | Reserves (years) |
|---|---|
| Iron ore | 700 |
| Coal | 150 - 2300 |
| Limestone | >1000 |

Sustained efforts to reduce the use of raw materials in the steel making process is illustrated by indicators such as iron efficiency, which show that the conversion of iron ore into the finished steel product has been optimised.

## *Lightening the mood*

Light-weighting is yet another of steel's environmental strengths. Increasingly lighter steel packaging solutions require less raw material and lower energy consumption to produce.

Over the years, the average weight of steel in its various packaging applications has been vastly reduced. Steel for packaging continues to improve its weight-to-performance ratio, thanks largely to successful progress in down-gauging.

1/2 CAN 425 ML PET FOOD - EOE

| | Body thickness mm | Easy Open End mm | Standard End mm | Total Weight g |
|---|---|---|---|---|
| 1980 | 0,19 | | 0,22 | 59,9 |
| 1992 | 0,14 | 0,22 | 0,19 | 49,5 |
| 2004 | 0,13 | 0,20 | 0,17 | 45,4 |

4/4 CAN 850 ML VEGETABLES - EOE

| | Body thickness mm | Easy Open End mm | Standard End mm | Total Weight g |
|---|---|---|---|---|
| 1980 | 0,22 | | 0,23 | 103,3 |
| 1994 | 0,19 | 0,24 | 0,20 | 96 |
| 2004 | 0,17 | 0,23 | 0,19 | 87,5 |

The weight of a 33cl. Beverage can has been decreased over the years, resulting in a can which is approximately 40% lighter than it was 30 years ago. This decrease in mass is enabled by new steelmaking and canmaking technologies and by the development of advanced steels that can offer the strength and formability required to make the packaging lightweight.

The development of new steel grades, which makes a reduction in thickness possible, benefits all steel packaging applications. For example, the weight of a typical 425ml. Food can has been reduced by 34% over the past 20 years. Demanding less and less in raw material, steel for packaging is 'doing its bit' for the world economy and the planet alike.

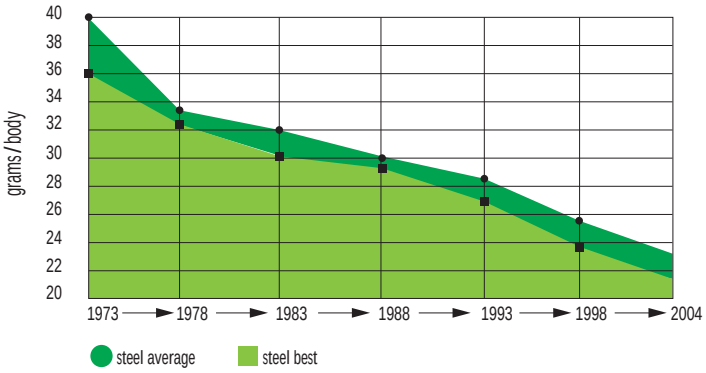
### PREVENTION THROUGH RECYCLING

More than 50% of steel production worldwide is made up of scrap. The recycling rates for steel packaging are high and growing steadily. Every year, more than 2 millions tonnes of post-consumer steel packaging are being recycled in the EU, enabling the industry to reach the metal packaging recycling targets of the Packaging Directive.

In addition, steel packaging is the most recycled packaging material in Europe, with an overall recycling rate above 60%.

By increased recycling of steel packaging, resources such as iron ore and coal are preserved for future generations and energy use is vastly reduced.

Steel beverage can 33 cl. body weight - Europe



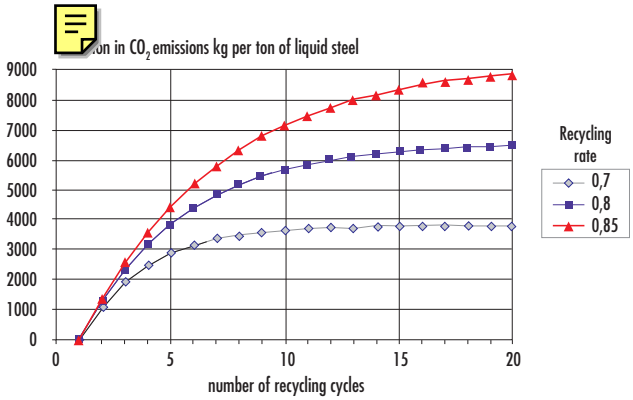

| | steel average | steel best |
|---|---|---|
| 1973 | 39.9 (grams) | 35.9 (grams) |
| 1978 | 33.3 | 32.2 |
| 1983 | 31.7 | 30.1 |
| 1988 | 30.1 | 29.6 |
| 1993 | 28.7 | 27.5 |
| 1998 | 25.7 | 23.9 |
| 2004 | 23.2 | 21.7 |

Thanks to its magnetic properties, steel is also one of the most economic materials to sort and recycle.

## STEEL : A RENEWABLE MATERIAL

Metals are elements, which makes them an indestructible form of matter. Consequently, they can maintain their properties through successive product cycles. In that sense, steel is a renewable material.

Indeed, it is important to distinguish between resource renewability and material renewability : Wood fibres come from a renewable resource but, because of degradation, their properties are not retained when recycled, i.e. they are a non renewable material. On the other hand, metals (hence steel) come from a non-renewable resource but, because they are elements, their properties can be fully restored when recycled, i.e. they are a renewable material.




## MULTIPLE RECYCLING – A BETTER INTEGRATION OF STEEL RECYCLING PATTERN INTO LIFE CYCLE ANALYSIS

Paradoxically though, this unlimited life span and the potential for unlimited recyclability had up to now not been fully integrated in the tool which is most commonly used as a metric of the environmental impact of human activities on the environment, i.e. Life Cycle Analysis.

To fill this gap, IISI, the International Iron and Steel Institute, has recently developed a promising model of multiple recycling of iron units (the main element in steel) over its many lifetimes.

The model acknowledges the fact that the integrated steel mill (BOS) produces steel that will become, at its end of life, scrap that the mini-mill (electric steelmaking or EAS) needs to operate. Translation of the linkage between BOS and EAS is done through the iron recycling closed loop.

From a practical standpoint, this amounts to averaging the environmental impact of liquid steel production over the various recycling cycles on a weighted average basis, depending on the amount of scrap recycled at each step. The higher the recycling rate, the better the environmental profile of steel.

This result has several strong consequences : Resource savings come first to mind, as one tonne of steel enables the production of 4 tonnes of steel with the same quantity of primary raw materials. This, in turn translates into other benefits, since using secondary raw material, in this case steel scrap, saves energy (about 75% of the amount needed to produce steel from primary raw materials) and reduces environmental impacts (e.g. a reduction of 80% on CO2 emissions).

# *Life-Cycle Analysis and policy-making*

LCA has been increasingly used by industry and the public sector to identify where real environmental improvements can be made, since it attempts to predict the overall environmental burdens associated with providing a specific service to society, on a cradle to grave basis.

The benefit of using LCA is that by taking a lifecycle perspective, it attempts to prevent "problem shifting" where an apparent improvement may simply cause a larger problem at another time or place.

LCA is a useful environmental tool, but should be used in conjunction with other tools for decision-making such as cost-benefit analysis.

An LCA study for packaging waste is unlikely to produce a universal, regional or even national hierarchy between reusable and non-reusable packaging. Existing studies suggest that the preferred option for any given product will vary by product category, and depend on such variables as trippage rates and return distances, as well as on the subjective valuation placed on resources and emissions. LCA can be used to optimise the lifecycles of individual packages, but will not provide single solutions for all packaging systems.

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An LCA regarding the potential environmental impact of Finnish Beverage packaging systems (VTT, April 2002) concludes that:

*"Across the board, the question of the "order" of the overall environmental impact of different packaging systems cannot be unambiguously answered. Instead, the conclusions on the environmental "advantageousness" of different packaging systems depend on the selected aspect i.e. the priorities set for each impact category. However, for the setting of these priorities, there are no commonly accepted methods."*

Another LCA study - carried out by Wagner & Partner together with BUWAL - which looked at environmental impacts of one-way versus refillable drinks containers, concluded that:

*"The best way to improve the environmental performance of beverage containers lay not in the selection of a particular pack type, but in focusing on the potential for improvement of each."*

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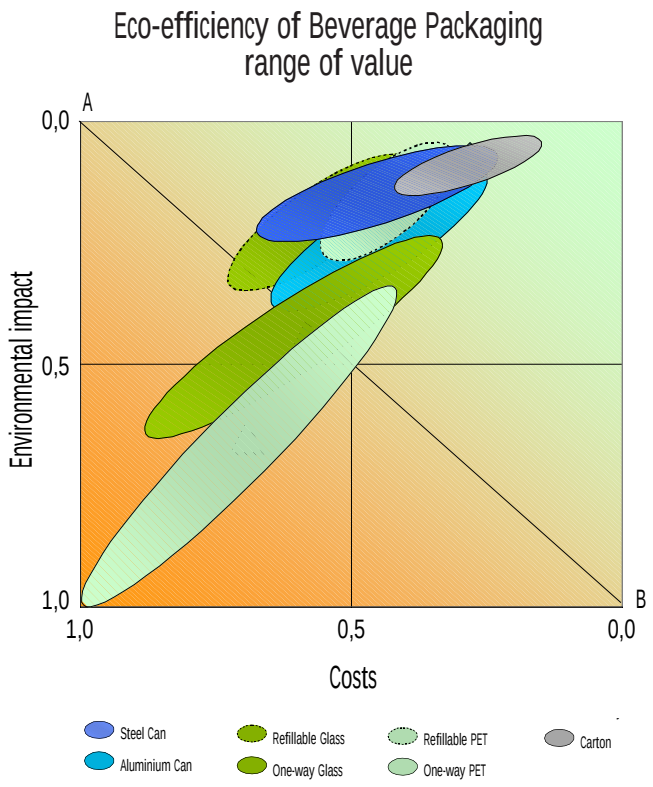
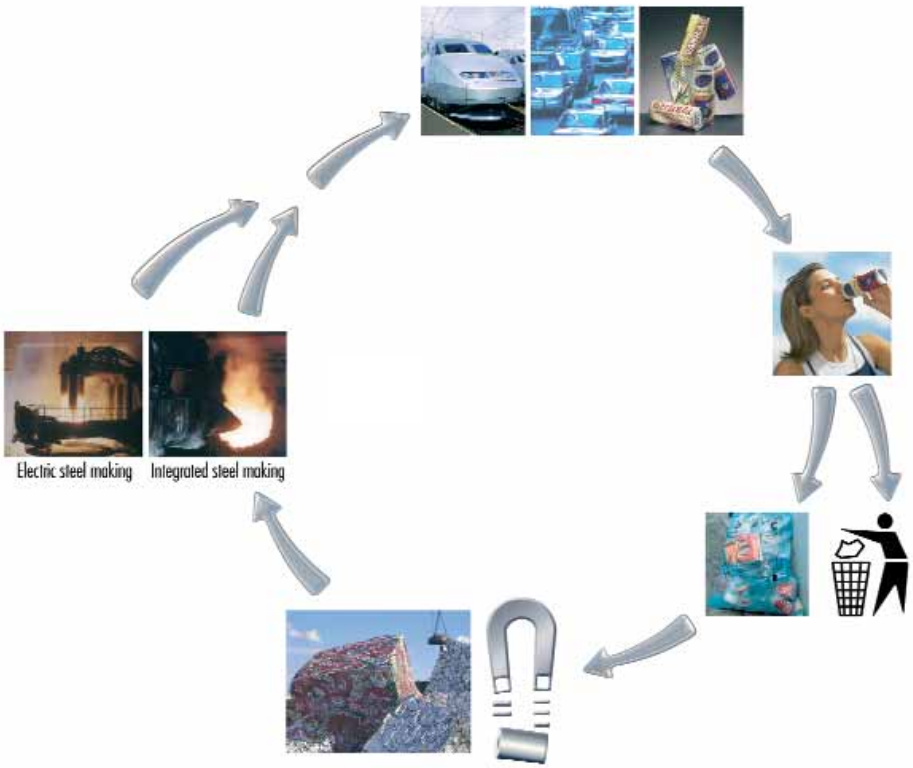
The LCA and eco-efficiency sensitivity analysis conducted by TNO in 2002 concludes that any distinction between ecologically favourable and unfavourable packaging on this basis is at best very tenuous. Discrimination between concepts and materials is therefore to be avoided if the results of an in-depth sensitivity analysis are not available. This sensitivity analysis is essential, because the outcome of the LCA impact assessment will be strongly influenced by the methodology (for instance the inclusion or exclusion of the effect of recycling and the significance ascribed to the input of secondary materials, as well as the quality of the data).




Source : TNO Report 2002-179 "LCA sensitivity and eco-efficiency analysis of beverage packaging systems" (Executive summary)

# THE RECYCLING LOOP OF STEEL PACKAGING

# Steel Recycling
# a virtuous, infinite closed loop



# Magnetism - a helping hand from Mother Nature

*The magnetic properties of steel play a major part in its recovery and recycling*

If a magnetic material is placed in a strong magnetic field, its atoms gradually orientate themselves in the direction of the field and the material becomes a magnet itself.

Electromagnets are used for maximum magnetic force, as they are constructed from a metallic core (usually an iron alloy), surrounded by a wire coil carrying an electric current. The electricity produces a magnetic field whose strength depends on the size of the current and the number of windings in the coil, while the polarity is determined by the direction of the current.

When the current flows, North and South poles are created in the electromagnet's core and it behaves like a magnet. When the current stops, these magnetic properties disappear.

If the opposite poles of two magnets are brought close together, the lines of their magnetic fields merge and the magnets attract each other. This behaviour is industrially exploited to create electro-magnets which are used to extract used steel packaging from household - or other packaging waste. This efficient sorting process greatly assists in the recycling of steel packaging.

## Did you know ?

*The earth's magnetic field is created by its own rotation - our planet behaves exactly like a magnet, with North and South magnetic poles.*

*The magnetic field itself is the result of electric currents circulating within the molten core of the globe, which is made up of 80% iron and lies 2,900km below the surface of the earth.*

# *How steel is "born again"*

Two steel production processes are well-established throughout the world and both require the use of scrap:

- integrated steel-making (using iron ore, coking coal and scrap)
- electric steel-making (from 100% scrap)

BOS also uses considerable amounts of scrap, but to a lesser extent than in electric steelmaking.

In integrated steel-making, used amongst other things in the production of steel for packaging, steel is created from pig iron by the injection of oxygen. Due to its physical properties, pig iron recovered from ore in blast furnaces contains excess levels of phosphorus and carbon, making it brittle as well as hard and therefore unsuitable for shaping processes. However, when it is oxidised, the carbon content of pig iron falls from 3-4% to around 0.02%, while other minor constituents such as phosphorus and silicon burn off.

This oxidisation process produces a great deal of heat which is itself used in the steel manufacturing process. And steel scrap plays an important role too at this point, lowering the temperature required for steel production to around 1600°C.

When production is complete, the steel is alloyed in accordance with the metallurgical requirements of the intended application and the key characteristics of the rolled material to be subsequently processed are also defined. Steel for packaging is a non alloyed, flat steel product.

## STEEL SCRAP - AN ESSENTIAL RAW MATERIAL

Both electric arc and integrated steel-making processes accept all kinds of used steel packaging, including drinks, food and paint cans, as well as aerosols - all of which can be recycled indefinitely into an unlimited range of new steel products without any loss of quality.

Equally, since recovered steel is an essential ingredient of new steel, the demand for recycled steel packaging grows in line with worldwide demand for steel products.

## SHAPING UP FOR RECYCLING

Sooner or later, virtually all scrap returns to the steel mill. Steel's established recycling loop, and the ease with which scrap is reclaimed through steel's natural magnetism, helps today's designers make end-of-life recycling a vital part of product planning.

An upgrading stage is always necessary prior to the smelting of steel scrap. In the case of integral collection and incineration, steel cans are magnetically extracted from the waste stream at the incineration plant and then transported to an upgrading centre where they are mechanically processed to comply with quality specifications set by the steel manufacturers.

Where separate collection is used, steel packaging is magnetically extracted from other packaging materials at the sorting centre, then baled for convenient transport and to meet steel manufacturers specifications.

*Integrated steel-making*

*Electric steel-making*

# Steel packaging recycling systems in Europe - an historical perspective

## Steel Packaging Recycling in Europe

(Split according to collection schemes)

| | 1998 | 2004 |
|---|---|---|
| Separate collection schemes (multi-material kerbside, can banks, container parks, ...) | 42% | 41% |
| Integral collection & magnetic sorting from household waste | 37% | 33% |
| Other systems (scrap dealers, compost centres) | 21% | 26% |

*The availability of a combination of collection methods makes steel the most flexible packaging material in terms of recovery and recycling*

The organised reclamation of used steel packaging from households and the collection of industrial steel packaging applications (steel drums, steel strapping, transit packaging), has a long tradition in Europe.

Historically, the collection and recycling of used steel packaging from households was first developed in northern European countries with a strong steel industry presence - principally France, the United Kingdom, Germany, the Netherlands and Belgium. At the time, the collection infrastructure consisted mainly of direct magnetic extraction from collected domestic waste. This is still the most appropriate way to collect steel packaging in high population density urban areas and is the most cost-efficient system.

This was complemented in most countries by voluntary "take back" to container parks, drop-off centres and magnetic extraction of steel packaging in various newly-built waste treatment plants.

It was followed by the development of multi-material kerbside collection schemes which now operate in most EU countries.

The magnetic extraction of steel, combined with a variety of collection schemes adapted to local circumstances, ensures optimum sorting and cost of recycling for steel and enables sustainable and integrated waste management.

Best practises for steel packaging collection are a mix of multi-material (kerbside) collection schemes, bring systems (igloos, container parks) and integral collection, where Municipal Solid Waste plants are equipped with electro-magnets.

*There is no environmental justification for product-specific collections systems such as mandatory deposit schemes for drinks cans. On the contrary, those systems defy best practises for steel because they :*

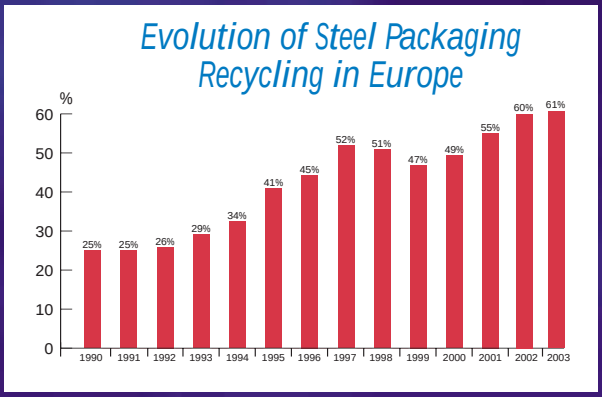
- *considerably increase collection costs due to burdensome logistics*
- *undermine the efficiency of multi-material collection schemes*
- *are sub-optimal since they only deal with a small part of the steel packaging mix*
- *generate disproportionate constraints for the marketing of imported drinks, which are essentially packed in one-way, recyclable packaging*

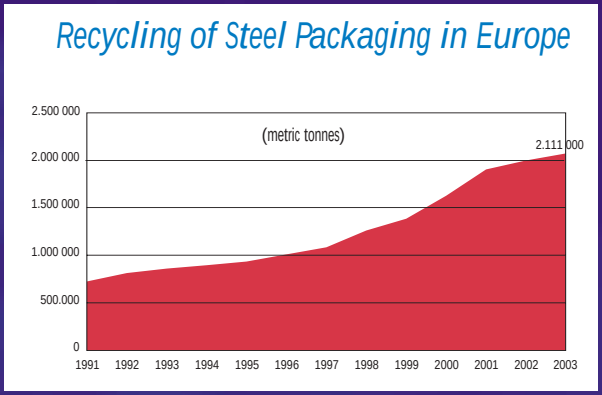

## *A three-fold increase in recycling within 10 years*

Steel packaging is being recycled in ever increasing volumes: over the last 20 years, the recycling of steel packaging has increased more than threefold and currently exceeds 2.1 million tonnes.

APEAL forecasts that by the end of 2008, the recycling of steel packaging in EU15 should near 70%.

Thanks to steel's contribution, the EU Packaging Directive's 2008 metal packaging recycling target of 50% is clearly within reach.



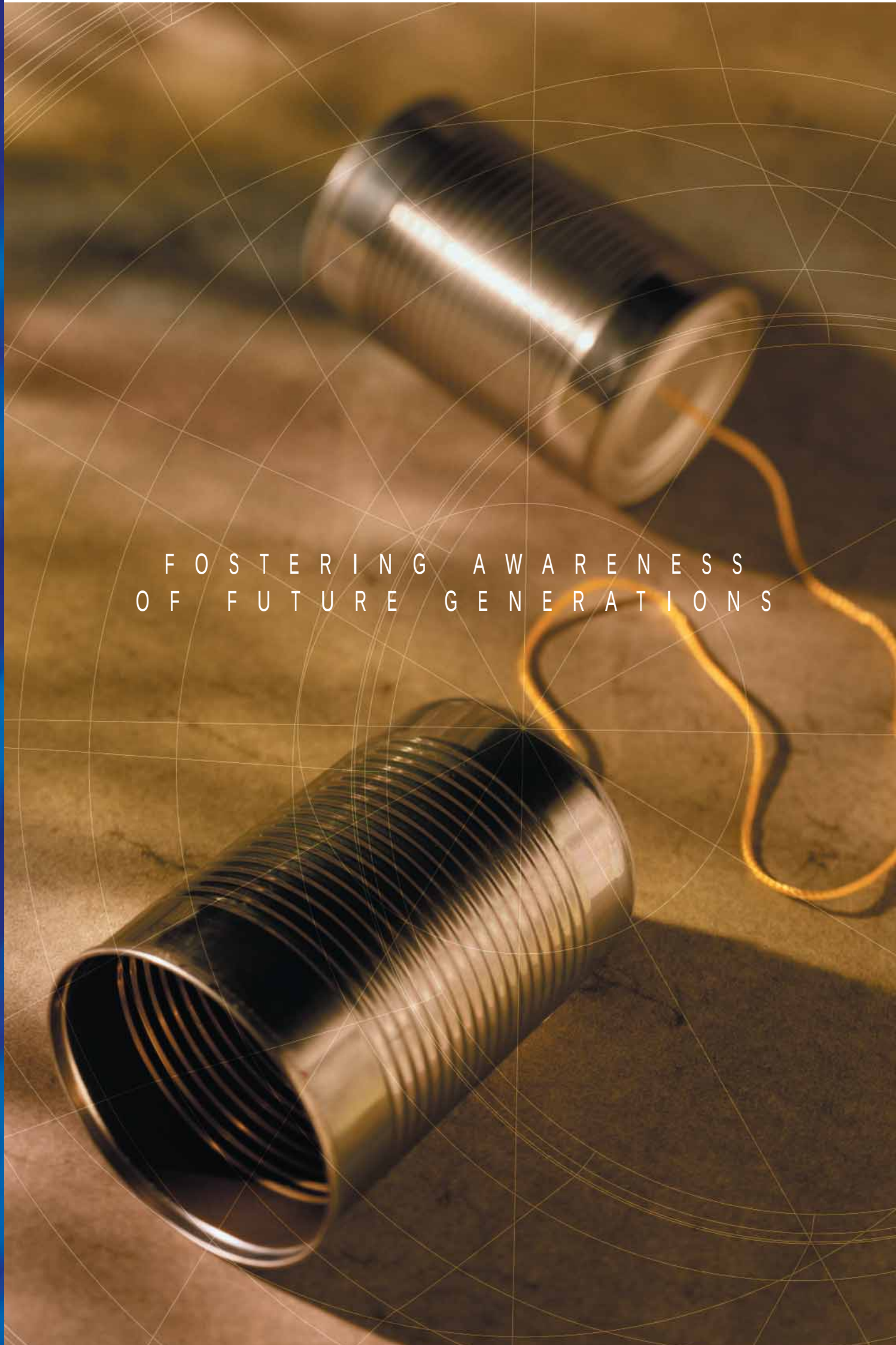

## *Closing the circle*

Right now, across Europe, naturally recyclable steel is helping close the circle between the packaging that consumers throw-away and the packaging produced for the marketplace :

- It is estimated that in 2050, the proportion of scrap used as raw material for steel production will nearly double. This implies that the scrap available on international markets must be shared amongst all steel applications (packaging, automotive, building, ...)
- Some 385 million tonnes of steel are recycled each year - equivalent to half the annual world-wide steel production or the weight of 130 Eiffel Towers every day!
- European steel producers currently consume some 85 million tonnes of scrap annually

*Tony Stone Image - Stewart Tilger*

- Since 2002, steel has become the most recycled packaging material in the E.U.
- Steel complies with all essential requirements of Directive 94/62/EC (amended by Directive 2004/12/EC) on Packaging and Packaging Waste



# FOSTERING AWARENESS OF FUTURE GENERATIONS

# *Communicating the virtues of steel packaging*

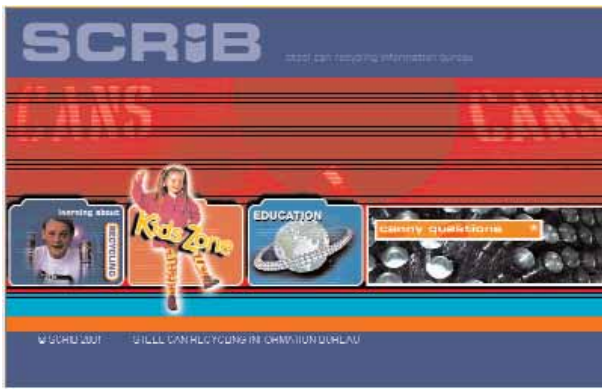
# *Communicating the virtues of recycling to future generations*

APEAL and its members have taken a leading role in communicating the importance of environmental responsibility to children of all ages, while demonstrating steel's top-of-the-class performance in safeguarding our planet for the adults of tomorrow.

## COMMUNICATING THE STEEL RECYCLING STORY TO YOUNG PEOPLE

Today's children will inherit tomorrow's world - and a planet under threat from mounting environmental pressures of every kind. But through proper understanding of the issues involved, young people can learn to respect the world they live in and support initiatives to protect it.

Across Europe, APEAL and its Members are working on a variety of educational programmes to ensure that the next generation is fully aware of the environmental advantages of steel packaging - for themselves and their own descendants too.

# A W A R E N E S S


Together with AEDE, the European Teachers Associations, APEAL has actively contributed towards the completion of the GEDECITE project. This project put together the skills of EU packaging industry associations, secondary school teachers and universities from several Member States to create a training unit in Environmental Education for secondary school teachers. This toolkit, which received funding from the EU Comenius 3.1 programme, is availableathttp://www.ulg.ac.be/cifen/inforef/expeda/gedecite/in several languages.


For additional information :

- The Netherlands - Stichting Kringloop Blik
  www.kringloopblik.nl
- UK - SCRIB, Steel Can Recycling Information Bureau
  www.scrib.org
- Italy - Consorzio Nazionale Acciaio
  www.consorzioacciaio.org/comunicazione/scuola.htm
- France - Arcelor Packaging International
  www.arcelorpackagingintl.com and search for “CIERA”.
- Germany - IZW
  www.weissblech.de/Medienkoffer.229.0.html
- EU - Gedecite
  www.aede.org/gedecite/



# *A joint effort to promote a cleaner society*

Stakeholders - including individual members of the community, industry and governments - agree that they must preserve a clean environment for future generations.

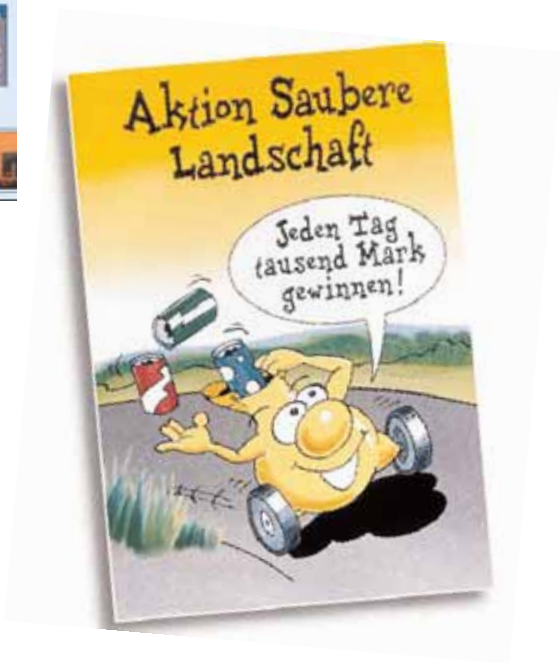
Clean communities contribute to better quality of life and safer societies where reducing or eliminating the anti-social behaviour of littering is a shared responsibility.

In that respect, APEAL members have joined forces in a series of voluntary projects at national level with other sponsors from industry, local authorities and national integrated waste management schemes ...in order to promote together an environmentally desirable behaviour from citizens.


Initiatives supported by APEAL members :

- *Vacances Propres (France)*
  www.vacancespropres.com
- *Stichting Nederland Schoon (The Netherlands)*
  www.nederlandschoon.nl
- *Aktion Saubere Landschaft (Germany)*
  www.aktionsauberelandschaft.de
- *Keep Britain Tidy (UK)*
  www.encams.org
- *Gidut (Italy)*
  Consorzio Nazionale Acciaio
  www.consorzio-acciaio.org/comunicazione/newsletter2.htm,
  see “Numero 8/9” (Aug./Oct. 2003)
- *Paisaje Limpio (Spain)*





# Towards a healthy diet

## *Conserving nutrition in steel – fresher than fresh*

Steel has always been intimately associated to food contact applications for beverages, biscuits, human & pet food. This is not surprising since steel is a robust form of packaging which allows minimisation of headspace oxygen and sterilisation of the foodstuff within the hermetically sealed can, permitting a long, safe, ambient shelf life with no or only minimal use of preservatives. Steel packaging has proved to be safe further to extended pack trials and ensures package integrity whilst preventing microbiological contamination.

The quality of food that is destined for can processing is strictly controlled to maintain freshness. More so, in fact, than the majority of 'fresh' foods, which are stocked and supplied using the usual distribution channels. The delay between the harvesting, transport and processing of canned foods is extremely short, in most cases less than 2 hours, and is one of the principal reasons why they maintain such a high nutritional value.

Sophisticated food processing technologies and efficient thermic transfer during the shortest possible time frame ensures a precise control of retorting temperatures (i.e. sterilisation) and maintains consistently high quality standards to meet today's critical consumer demands. Furthermore, canned foods are protected from light and oxidization, and when stored at room temperatures of less than 20°C, they preserve their vitamins for at least 2 years without high energy-consuming refrigeration.

## *Steel packaging: safe for the environment, safe for food*

UPPIA in France, Initiative Dosenküche in Germany, Canned Food UK and CICE (Centro de information de la Conserva Enlatada) in Spain, have introduced a number of collective promotional campaigns over the past few years. Together with the co-operation of major food packers, they have built awareness amongst consumers of the food can and have built consumer awareness of the merits of canned food.


Die Dosenköche


FRANCE - UPPIA - www.uppia.org
GERMANY - Die Dosenköche - www.die-dosenkoeche.de
UK - Canned Food UK - www.cannedfood.co.uk
SPAIN - CICE - www.conservasenlata.com


# The background to APEAL

APEAL - the Association of European Producers of Steel for Packaging - currently has 4 member companies : Arcelor Packaging International, Corus Packaging Plus, Rasselstein and US Steel Kosice present in 8 E.U. Member States (France, Belgium, Spain, Germany, Norway, the Netherlands, Slovakia and the UK).

APEAL members offer a secure, long-term market for all types of steel packaging recovered from their individual countries' waste streams and meeting minimum technical specifications. Each member has recycling capacity sufficient to respond to both current and future legislative targets.

The role of APEAL's Environment Committee is to build a common European platform on all issues linked to steel for packaging and the environment. Communication activities around steel packaging recycling are developed as a long-term strategy. A team of pan-European recycling and environmental experts are at your disposal for any questions you may have on steel for packaging and the environment.

CAN WE TELL YOU MORE?
If you would like to know more about APEAL, its Members and the excellent environmental performance of steel for packaging, please get in touch with us. We'll be glad to discuss your needs and help in every way we can.

APEAL
The Association of European Producers of Steel for Packaging

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## General information about APEAL and its Members

APEAL members' manufacturing sites are located in 8 EU countries, currently representing more than 90% of European production of steel for packaging.

Member companies are:

- **Arcelor Packaging International** (Arcelor group) with 6 manufacturing sites operating in 3 EU Member States: Belgium (Liège), France (Basse-Indre, Florange, Mardyck), Spain (Avilés, Etxebarri)
- **Corus Packaging Plus** (Corus group) with 4 sites operating in the UK (Trostre), in the Netherlands (Ijmuiden), in Norway (Bergen) and in Belgium (Duffel)
- **Rasselstein** (ThyssenKruppStahl group), operating one site in Germany (Andernach)
- **US Steel Kosice** (US Steel Group), operating two sites in Slovakia

*Please visit us at our web site:*
*www.apeal.org*
*www.steelforpackaging.org*

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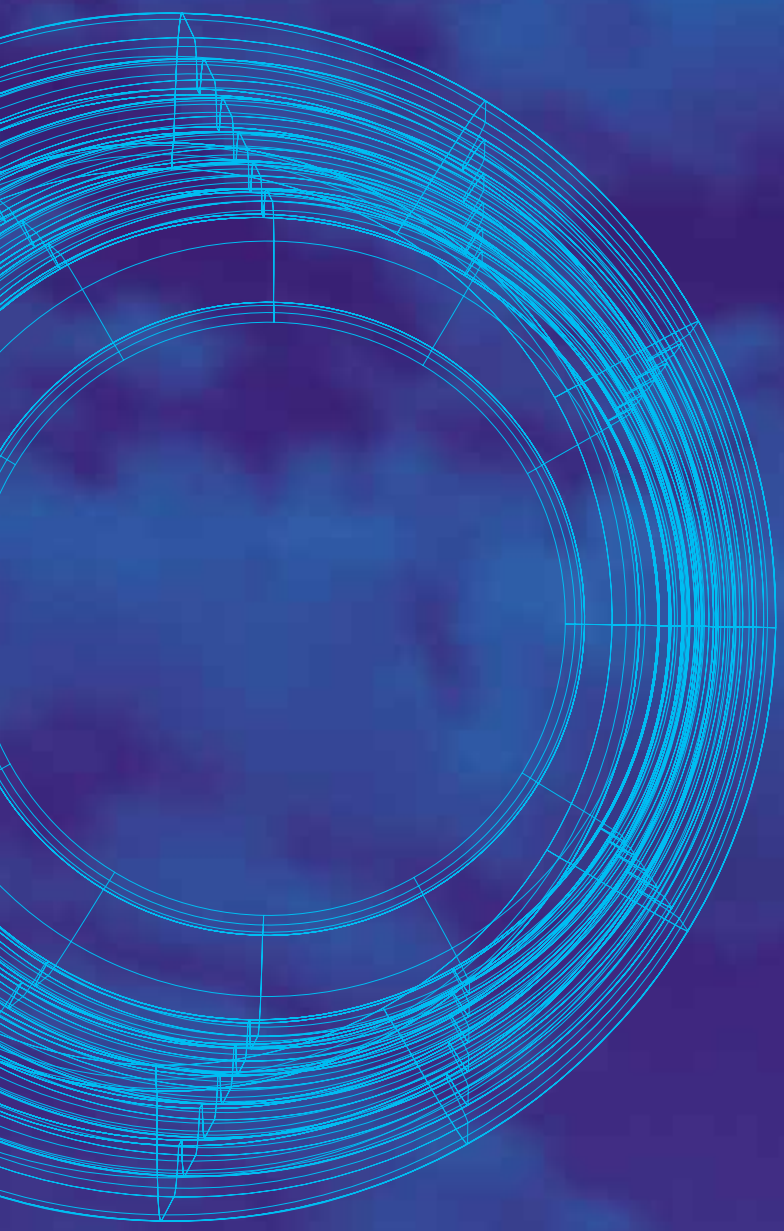
Member companies:

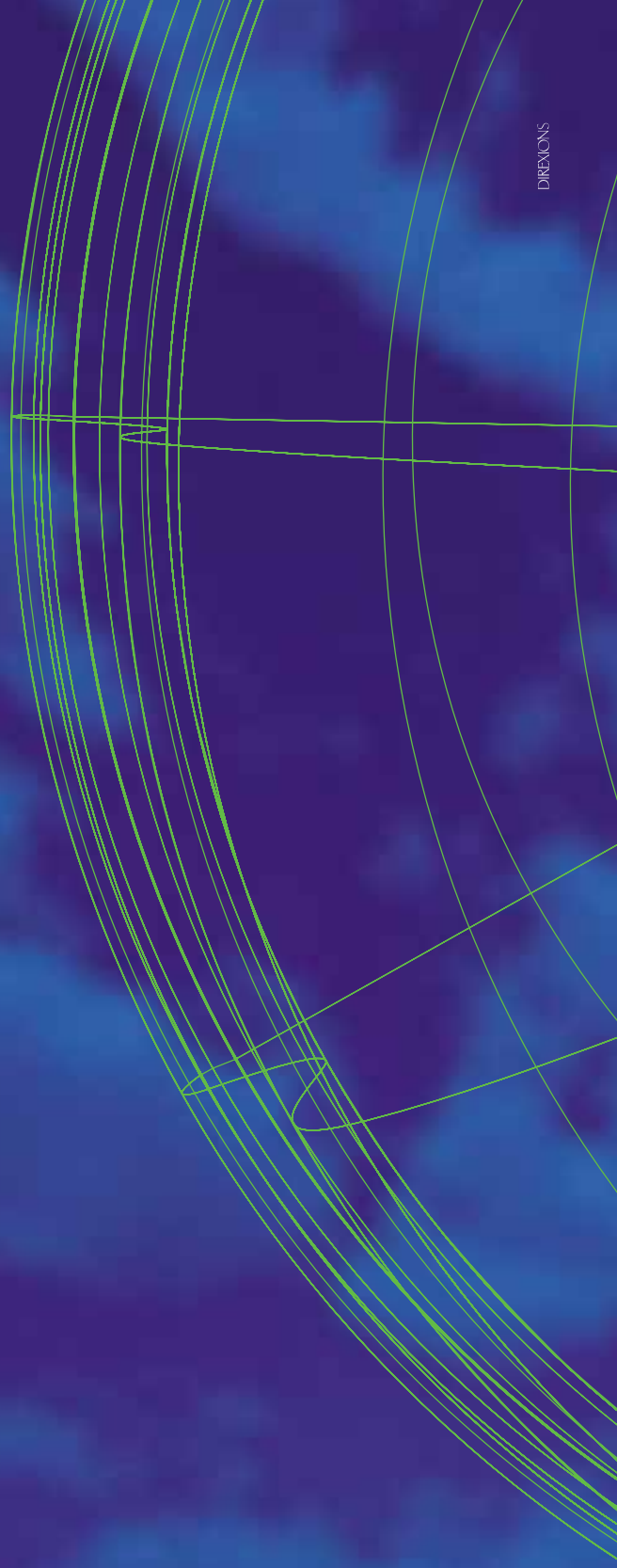
ARCELOR PACKAGING INTERNATIONAL
Groupe Arcelor

corus

Rasselstein

U. S. Steel Košice, s.r.o.
A Subsidiary of United States Steel





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