



## **Glossary:**

### **Aluminium**

Due to its high malleability, its low weight with high stability and its outstanding recyclability, the light metal aluminium is of great importance in the packaging industry. It can be found in cans, yoghurt pot lids, bottle caps and tins. Aluminium can be recycled as often as required without any loss of quality.

### **Amendment**

In the sense of legislation, an amendment refers to a change to the law that revises or supplements an existing law in certain places. This process is called amending. The Packaging Ordinance, which came into force in 1991, has been amended five times.

### **Arbeitsgemeinschaft Verpackung und Umwelt e.V. [German packaging and environment trade association]**

The Arbeitsgemeinschaft Verpackung und Umwelt e.V. (AGVU) is a trade association that represents the common interests of its members from the retail, consumer goods, packaging and recycling industries in the field of environmental protection and recycling management. The members organised in the AGVU are committed to developing the environmental regulations for packaging and optimising the resource cycle ecologically and economically. The AGVU is based in Berlin.

### **Ausschuss für Produktverantwortung [Committee for Product Responsibility] (in the LAGA)**

The Committee for Product Responsibility (APV) is a body of the German Federal/State Working Group on Waste (LAGA). It deals with the take-back and disposal obligations of manufacturers and distributors of products pursuant to Part 3 of the Recycling Act (Sections 23 to 27), the Electrical and Electronic Equipment Act, the German Batteries Act and the ordinances based on these.

### **Commissioned third parties**

According to the Packaging Ordinance, the manufacturers and distributors obligated to take back and recover packaging may commission third parties to carry out their obligations.

### **Industry compatible volumes**

Industry compatible volumes refer to volumes of sales packaging that are put into circulation by manufacturers and distributors at comparable sources of waste generation. There is no obligation to participate in a dual system for these amounts of packaging, as long as it is taken back by the manufacturer or distributor themselves and sent for recovery. Significant obligations to provide evidence and documentation must be fulfilled by both manufacturers and distributors and sources of waste generation here.

### **German Batteries Act**

The Batteries Act regulates the marketing, return and the environmentally safe disposal of batteries and accumulators. The act, which is currently still valid, came into force on 1 December 2009, the last amendment being made on 1 June 2012. At present, the Batteries Act is being amended in order to implement the specifications of the European Union (EU). In 2013, the EU agreed on an amendment to the Batteries Act to further restrict the use of cadmium and mercury in batteries and thus permanently remove these harmful substances from the cycle of materials. The amendment process should be completed by the end of 2015.

### **Bundesverband der Deutschen Entsorgungs-, Wasser- und Rohstoffwirtschaft e.V. [Society of the German Waste Industry]**

The Bundesverband der Deutschen Entsorgungs-, Wasser- und Rohstoffwirtschaft e.V. (BDE) was founded in Offenbach in 1961 and, with around 750 member companies, is now one of the largest interest groups involved in private waste, water and raw material management in both Germany and Europe. The association's head office is in Berlin.

### **Bundesverband der Deutschen Industrie e.V. [Federal Association of the German Industry]**

The Bundesverband der Deutschen Industrie e. V. (BDI) was founded in 1949 and is based in Berlin. The BDI is a leading organisation of German industry and industry-related service providers. It represents the interests of 38 industry associations and over 100,000 companies at a political and public level.

### **Bundesvereinigung Deutscher Stahlrecycling- und Entsorgungsunternehmen e. V. [National Association of German Steel Recycling and Waste Management Companies]**

The Bundesvereinigung deutscher Stahlrecycling- und Entsorgungsunternehmen e. V. is a trade association that represents the interests of companies involved in steel recycling and other waste management services. The BDSV is the largest steel recycling association in Europe and is based in Düsseldorf.

### **Bundeskartellamt [German Federal Cartel Office]**

The Bundeskartellamt is an independent competition authority responsible for protecting competition in Germany. At state level, the [Landeskartellbehörden](#) [state competition authorities] of the individual states' Ministries of Economic Affairs are responsible for this. The German Federal Cartel Office is based in Bonn.

### **Bundesverband Sekundärrohstoffe und Entsorgung e.V. [German Federal Association for Secondary Raw Materials and Waste Management]**

The Bundesverband Sekundärrohstoffe und Entsorgung e.V. (bvse) is an industry-leading umbrella organisation for recycling and waste management in Germany and Europe. Over 670 predominantly medium-sized companies are organised in the bvse, generating a total turnover of over 10 billion euros and employing more than 50,000 employees. The association is based in Bonn.

## **Bund/Länder-Arbeitsgemeinschaft Abfall [German Federal/State Working Group on Waste]**

The Bund/Länder-Arbeitsgemeinschaft Abfall (LAGA) is a working body of the German Conference of Environment Ministers (UMK) that was founded in 1963. Its objective is to ensure that waste legislation is enforced in a uniform manner nationwide throughout Germany. To this end, LAGA promotes the exchange of information and experience between the federal government and the states. The LAGA's tasks also include developing legal provisions and coordinating state interests in developing the German position in international organisations.

## **Chamber of Commerce**

The 80 Chambers of Commerce (IHK) in Germany are autonomous public bodies and the largest stakeholders of all trading companies in the respective regions. They perform public service tasks and advise their member companies in local, regional and national affairs. All domestic German companies – except craft businesses, professionals and agricultural holdings – are legally obligated members of a Chamber of Commerce.

## **Clearing house**

The dual systems' clearing house is responsible for calculating the market share of all approved dual systems in Germany. The market share for the lightweight packaging (LVP), paper and board (PPK) and glass fractions are recorded for each federal state on a quarterly basis and assigned to the respective systems. From this, the clearing house can calculate the size of the share of collected packaging that the relevant system operator must take on. The clearing house is situated in the clearing house for Duales System Deutschland GmbH.

## **Collection**

In the waste management sector, collection is defined as the gathering of waste at collection points such as households or businesses by waste management companies. Depending on the type of waste, the waste disposal firms bring these to appropriate sorting and recovery plants or incinerators.

## **Collection and bring-back system**

There are two forms of collection for household waste disposal: the collection system and the bring-back system. With the collection system, waste is collected directly at private households (for example the yellow bin/yellow bag or paper bin). With the bring-back system, citizens must take their waste to a collection point (for example recycling stations for glass, metals, textiles etc. or recycling centres).

## **Commercial collection points**

In the context of the Packaging Ordinance, industry – as opposed to households and comparable waste producers (small businesses) – is a collection point that is not associated with private final consumers. For example, the production of sales packaging in the production process of an automotive or machine manufacturer (not in government offices, canteens). If sales packaging is used in large commercial enterprises or in the processing industry, there are no licensing obligations for a dual system.

## **Comparable waste generation sources**

In addition to households, so-called comparable waste generation sources include collection points assigned to private final consumers. The reason for this is that the same kind of packaging that is sold in retail outlets is generated there, just as with households. Examples of comparable waste generation sources include hotels, canteens, hospitals and restaurants.

## **Deutscher Industrie- und Handelskammertag e.V. [The Association of German Chambers of Commerce and Industry]**

The Association of German Chambers of Commerce and Industry (DIHK) represents the interests of the commercial German economy with regard to federal policy and the European institutions on behalf of the Chambers of Commerce and Industry (IHK). 3.6 million commercial companies in all industries and sizes are legal members of the CCIs. The DIHK is based in Berlin.

## **Distribution channel analysis**

A distribution channel analysis examines which sales packaging accumulates at which collection point. Here, the exact weight and the amount of each material fraction is calculated for each collection point. Of particular interest is the proportion of sales packaging accumulated at comparable places where packaging arises in accordance with Section 3(11) of the Packaging Ordinance and which can therefore be incorporated into an industry solution.

## **Distributor**

Within the meaning of the Packaging Ordinance, a distributor is anyone who puts packaging, packaging materials or products from which packaging can be directly manufactured into circulation, regardless of the level of trade. Distributors also include the mail order trade.

## **Dual systems**

Dual systems organise the collection, sorting and recycling of sales packaging. While a dual system means a system operator, the dual system means the entire system of taking back and recovering household packaging, which consists of cooperation between the individual system operators or the waste management companies authorised by them (see also Section 6(3) of the Packaging Ordinance).

## **EC Directive on Packaging**

In the early 1990s, the European Union sought to harmonise the packaging sector by means of a mandatory overall solution. As a result, on 20 December 1994 the EC Directive on Packaging (Directive 94/62/EC) on packaging and packaging waste came into effect. The directive lays down content and conditions that all European Union member states must transpose into national law. Consequently, each member state must take the necessary measures for establishing take-back, collection and recovery systems for used packaging. The EC Directive on Packaging lays down, among other things, minimum recovery and recycling quotas for the individual fractions.

## **Emptiable containers**

Emptiable containers are container systems for the continuous disposal of waste and recyclable materials. They can be hooked into the disposer's collection vehicle. The container is automatically lifted by the refuse collection vehicle and dumped over the collection container. The emptied container is left behind at the collection point.

## **Energy recovery**

With energy – also thermal – recovery, the energy contained in waste is used to generate heat or electricity by burning the waste. It thus replaces some of the fossil fuels such as oil, gas or coal for industrial, heating and cement power plants. Unlike with most fossil fuels, burning waste has a lower calorific value.

## **Energy efficiency**

Energy efficiency is a measurement of the amount of energy that must be used in order to achieve a certain benefit, such as for cooling food in a refrigerator. The less energy required to achieve this benefit, the more energy efficient a process or device is. Since 1998, the European Union has been identifying the energy efficiency of household appliances using the EU Energy Label.

## **Environmentally beneficial non-returnable drinks packaging**

According to the Packaging Ordinance, environmentally beneficial non-returnable beverage packaging is drinks carton packaging, drinks packaging in the form of polyethylene bags and foil stand-up pouches. Their environmental advantages in comparison to other non-returnable drinks packaging is attributable to the LCA studies commissioned by the Federal Environmental Agency (UBA).

## **European Directive on Waste**

The 2008 directive 2008/98/EC on waste (European Directive on Waste) lays down the legislative framework for handling waste from generation to disposal in the European Union member states. The five-step waste hierarchy laid down therein gives the order of priority for dealing with waste: prevention, preparation for re-use, recycling, other recovery (such as energy recovery) and disposal.

## **Extended producer responsibility**

Extended producer responsibility (EPR) describes the legal obligation of producers to take responsibility for their product throughout the life cycle and also after its service life ends. Transferring the responsibility for the withdrawal and recycling of the product (and its packaging) from the community to industry intends to create incentives for more efficient and more environmentally friendly product design. Around the world, more and more countries are implementing legal regulations on extended producer responsibility.

## **Entsorgungsgemeinschaft der deutschen Entsorgungswirtschaft [Waste Management Association of the German Waste Management Industry]**

The Entsorgungsgemeinschaft der Deutschen Entsorgungswirtschaft e.V. (EdDE) is an association of companies in the local and private waste management industry. The Waste Management Association was founded in Stuttgart in 1996 and, with around 300 member undertakings and over 740 production sites, has the largest membership of all of the waste management associations in Germany. In accordance with Sections 56 and 57 of the Recycling Act (KrWG), the Ordinance on Specialised Waste Management Companies (EfbV) and the Guidelines for the Work and Recognition of Waste Management Associations, it awards the “Waste Management Company” monitoring certificate and the EdDE supervision mark.

## **Environmental Impact Assessment**

The Environmental Impact Assessment refers to the systematic and comprehensive assessment of the ecological consequences of measures that have an impact on the environment. Pursuant to the Law on the Environmental Impact Assessment, this includes all projects which are likely to have a significant impact on people, animals, plants, soil, water, air, climate and landscape as well as on cultural and other material goods. The authority responsible for approving a project must assess the information and opinions and take into consideration the results of the EIA when deciding on whether to approve a project.

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## **ElektroG Electrical and Electronic Equipment Act**

The 2005 Electrical and Electronic Equipment Act (ElektroG) transposes the EU Directive on Waste Electrical and Electronic Equipment (WEEE) into Germany. The ElektroG regulates the marketing, return and environmentally sound disposal of electrical and electronic equipment. The ElektroG has the aim of promoting environmental and health protection as well as conserving natural resources by avoiding waste, reducing waste volumes and limiting the use of hazardous substances.

## **EPS Expanded polystyrene**

**Expanded polystyrene (EPS)**, also known as Styrofoam, is created by physically foaming the thermoplastic resin polystyrene. EPS is used for heat insulation and damping, for example in the packaging of electronic devices.

## **EUWID Europäischer Wirtschaftsdienst [European Economic Service] (journal)**

The Europäische Wirtschaftsdienst GmbH (EUWID) is a specialist publishing house that publishes print and online media for the following sectors: recycling and waste management, pulp and paper, wood and wood products, packaging, water and waste water, new energies, plastics, furniture and energy efficiency.

### **Expert, independent**

In accordance with the Packaging Ordinance, an independent expert must certify that the recovery quotas specified were achieved. An independent expert pursuant to Section 6(3) in conjunction with Annex I no. 2 paragraph 4 of the Packaging Ordinance is:

- (1) a person whose competence has been determined by a member of the German Accreditation Council in a generally accepted method;
- (2) an independent environmental verifier in accordance with Section 9 or an environmental verification organisation in accordance with Section 10 of the Environmental Audit Act or;
- (3) someone who has been officially appointed in accordance with Section 36 of the German Industrial Code.

### **Facility waste disposal**

With facility waste disposal, the waste that is generated when goods are produced and/or packaged are disposed of at the manufacturer's or distributor's premises. Facility waste disposal can be carried out by an authorised third party.

### **Final consumer**

According to Section 3(11) of the Packaging Ordinance, the final consumer is the person who does not resell the goods in the form delivered to them. This may include both private as well as commercial waste producers.

### **Food retail industry**

The food retail industry (FRI) includes all companies whose businesses and markets carry a range that consists mostly of foods. The food retail industry's trade activity is in the distribution of food products to final consumers. The most usual types of business in the food retail industry are discounters, supermarkets and consumer markets.

## **Fractions**

Fractions in the sense of the Packaging Ordinance are material classes; packaging waste is assigned as glass, plastic or aluminium. The Packaging Ordinance prescribes different recovery rates for the individual fractions.

## **Free-riders**

In the waste management industry, free-riders are manufacturers and distributors who have not licensed their packaging with a system operator, despite being required to participate in the system under the Packaging Ordinance. Free-rider packaging is disposed of and recovered at the expense of dual systems and therefore indirectly at the expense of all customers who license their packaging correctly.

## **German Conference of Environment Ministers**

The German Conference of Environment Ministers (UMK) is a specialist ministerial conference on environmental policy that takes place twice a year. The environmental ministers and senators for the federal government and the states are represented at the UMK. It mainly focuses on presenting the positions of the individual states on environmental issues and developing shared approaches. Various governmental/state working bodies are organised in the UMK on various topics.

## **Glass**

Glass plays an important role in the packaging of foodstuffs. Used glass can be recycled well. It is collected and recycled throughout Germany, separated into colourless, brown and green glass.

## **Granules**

Granules are small grain or globular units of a material and are important raw materials for the plastics processing industry. Thermoplastics are usually traded as granules, as this allows them to be transported and handled for further processing into

products more easily. If the plastic product made from it is later recycled back into granules, this is called re-granulate.

### **Green Dot [Grüner Punkt]**

“The Green Dot” is an internationally protected trademark, the rights to which are owned by Der Grüne Punkt – Duales System Deutschland GmbH (DSD). A licence fee must be paid to use the symbol in most countries. Following court decisions, the trademark is currently only approved for use in Poland and Slovakia. Until 2008, all sales packaging brought into circulation in Germany must be marked with the “Green Dot” symbol. This obligation no longer applies.

### **Industry**

In the context of the Packaging Ordinance, industry – as opposed to households and comparable waste producers (small businesses) – is a collection point that is not associated with private final consumers. For example, the occurrence in the production process of an automotive or machine manufacturer (not in government offices, canteens). If sales packaging is used in large commercial enterprises or in the processing industry, there are no licensing obligations.

### **HDE**

#### **Handelsverband Deutschland [Trade Association of Germany]**

The Handelsverband Deutschland (HDE) is the umbrella organisation for the German retail sector which represents the industry with regard to politics at both national and EU level, to other economic sectors, to the media and the public. The association supports its members in the fields of economic policy, taxation policy, legislation and quality assurance. There is a particular focus on the issues of consumer and environmental protection. The Handelsverband Deutschland is based in Berlin.



## **Households**

Within the meaning of the Packaging Ordinance, households – in addition to comparable collection points (small businesses) – are private final consumer collection points.

## **Incineration plant**

An incineration plant (IP) is a plant for thermally treating waste for the purpose of reducing the waste volumes. IPs are also used to reduce organic and inorganic pollutants (particularly dioxin, mercury, cadmium, etc.) which are destroyed and removed from the biosphere when burnt. An IP usually consists of a delivery and temporary storage area, a combustion zone and a flue gas cleaning.

## **Industrial collection points**

Within the meaning of the Packaging Ordinance, in contrast to households and comparable collection points (small businesses), industry is a commercial source of waste generation not associated with final consumers. Sales packaging from industry is not subject to licensing obligations for a dual system.

## **Industry solution**

An industry solution refers to when manufacturers or distributors of sales packaging take back their sales packaging that have been put into circulation at the called collection points comparable to private households (e.g. hotels or hospitals) and send it for recovery themselves. Here, they must demonstrate that they have suitable industry-related collection systems that ensure the regular free return and recovery of sales packaging in accordance with the requirements of Annex I of the Packaging Ordinance. There is no obligation to participate in a dual system for sales packaging covered by an industry solution.

## **Initial distributor**

Initial distributors are the manufacturers or distributors who first put the sales packaging filled with goods into circulation, typically used at households, i.e. they hand them over to third parties working in commercial transport. They are obligated to participate in a dual system in accordance with Section 6(1) of the Packaging Ordinance.

## **DIHK DoC register**

### **The Internet portal for the Chambers of Commerce and the DIHK e.V. for depositing the Declaration of Completeness**

The DoC register is an Internet portal for the Chambers of Commerce and the DIHK e.V. in which manufacturers and distributors of sales packaging must deposit their declarations of completeness. (see also Declaration of Completeness).

## **Converting transport packaging**

Transport packaging is packaging that either makes it easier to transport goods, protect goods from damage during transport and/or is used for safety reasons. Transport packaging is always used by the distributor. If it is taken by final consumers, it becomes sales packaging. This is the case, for example, if someone purchases a 6-pack of water bottles and takes it home in the shrink-wrap, i.e. the film then becomes sales packaging.

## **Littering**

Littering refers to the improper disposal of waste in public places, such as throwing away beverage cans without using a dedicated public litter bin. However, littering is distinguished from the illegal removal of household, industrial or commercial waste for the purpose of the saving on disposal costs. There are many disadvantages to carelessly discarding waste in public places, such as impaired quality of life and safety, increasing cleaning costs or damage to a locations reputation.

## **LAGA**

### **Bund/Länder-Arbeitsgemeinschaft Abfall [German Federal/State Working Group on Waste]**

The Bund/Länder-Arbeitsgemeinschaft Abfall (LAGA) is a working body of the German Conference of Environment Ministers (UMK) that was founded in 1963. Its objective is to ensure that waste legislation is enforced in a uniform manner nationwide throughout Germany. To this end, LAGA promotes the exchange of information and experience between the federal government and the states. The LAGA's tasks also include developing legal provisions and coordinating state interests in developing the German position in international organisations.

## **Licence fee**

The licence fee for a system provider's sales packaging corresponds to the total revenue received for the participation of various manufacturers' sales packaging within a certain period. From the manufacturer's point of view, the LEV is the fee paid for licensing all sales packaging to system operators within a certain period.

## **Life cycle assessment**

A life cycle assessment is a tool which shows the environmental influences of a product throughout its life cycle and evaluates the resulting environmental impact. The life cycle assessment works as a decision basis for measures to improve the environment within the product life cycle. It plays an important role in the packaging selection and form of recovery.

## **Lightweight packaging**

Lightweight packaging (LWP) is packaging made from plastic, metal (aluminium, tinplate) or composites. It is collected using the yellow system (yellow sacks, bins or containers) and then recycled; this is organised by dual systems.

## **Liquid packaging board**

Liquid packaging board is a type of packaging that is made from composite materials for drinks and liquid food. Liquid packaging board consists of a carton that is laminated with plastic. The plastic polyethylene (PE) is used during the manufacturing process to make the package thick, and aluminium is used to prevent light and oxygen from changing the liquid. The most famous manufacturers of liquid packaging board are Tetra Pak, SIG combi bloc and Elopak.

## **Markenverband [Brands Federation]**

Markenverband e.V. represents the interest of brand-oriented businesses in Germany. The federation has just under 400 members, which accounts for over 1,000 brands and a turnover of more than 300 billion euros in branded consumer goods and around 200 billion euros in the services sector. Markenverband, which was founded in Berlin in 1903, is the largest federation of its kind in Europe.

## **Material recovery**

Material recovery of waste does not chemically change the materials used. Generally, the waste is sorted, washed and processed. The recycled materials can be re-used in the established production processes. In the paper and board, glass and metal sectors, material recovery has long been carried out successfully. When recycling used plastics that result from melting, recyclates, mainly re-granulates, are used for manufacturing new products such as sweaters, blankets, clothes hangers or park benches. Material recovery has significant advantages in comparison to raw material and thermal recycling.

## **Methanol production**

Methanol production is a type of raw material recycling in which the long hydrocarbon chains (polymer chains) which make up plastics are broken down into individual parts (monomers). This creates methanol among other things.

## **Misthrow**

A misthrow refers to when consumers dispose of their waste in an incorrect collection container, for example putting paper in the yellow bin. A so-called “intelligent misthrow” is when consumers dispose of plastic waste, which are not packaging, in the yellow collection systems. Materially, these do indeed look similar to lightweight packaging in the yellow bag or yellow bin, but as they are not packaging, they may not be disposed of there.

## **Mixed plastics**

Mixed plastics are plastic fractions which consist of various plastics. They are left over after other plastic fractions are sorted in the sorting plant and form their own fraction which can only be separated with great effort. Mixed plastics can be recovered into material or raw material form or into energy.

## **MNV**

### **Trademark usage agreement**

Duales System Deutschland GmbH (DSD) owns the trademark for the “Green Dot”. Manufacturers/distributors who want to print the symbol on their product packaging must complete a trademark licence agreement with DSD and pay licence fees. In the meantime, however, DSD has lost the first proceedings in the dispute over the trademark. The symbol is now approved for use in Poland and Slovakia.

## **National register for waste electric equipment**

The national register for waste electric equipment (stiftung ear) is the clearing house for manufacturers in the sense of the Electrical and Electronic Equipment Act (ElektroG), which is authorised by the Federal Environmental Agency and performs certain functions under the ElektroG. These mainly include registering manufacturers, recording amounts put in circulation, coordinating the collection of waste electrical and electronic equipment with public service waste management companies, submitting annual volume flows to the German Federal Environmental Agency and identifying and reporting “free-riders”. The foundation is based in Fürth.

## **Natural materials**

Natural materials are materials obtained from the environment, i.e. from plants, animals or the soil. These include wood, copper, cotton or silk.

## **Ancillary fees**

As part of the Packaging Ordinance, dual systems may require public service waste management authorities to allow them to use public containers for collecting waste. The system operators are then obliged to contribute proportionally to the costs of public service waste management authorities (so-called ancillary fees) incurred from waste consultancy for the respective system and from establishing, providing, maintaining and cleaning areas on which large collection containers are placed.

## **Near-infrared**

Near-infrared technology is used in waste sorting plants to separate plastics. When a near-infrared beam strikes a non-metallic material, a portion of the beam is absorbed by it and another part is reflected. The portion of the spectrum absorbed by a plastic allows for precise identification. The coordinates of the packaging on the conveyor belt and its speed make it possible to calculate when the packaging will reach the offloading area and which nozzle hole must emit a blast of compressed air at the offloading area at this moment to remove the packaging. The NIR technique does not work with black or very dark materials.

## **Non-packaging**

Non-packaging is referred to as products that are not packaging according to the German Packaging Ordinance (VerpackV), for instance a kitchen bowl or a lunch box (see also the StNVP [non-packaging of the same material]).

## **Non-packaging of the same material**

Non-packaging of the same material are products made from plastic or composites which, although made from the same materials as packaging, are not defined as such



under the Packaging Ordinance (VerpackV), for example a kitchen bowl made from plastic or a saucepan made from aluminium. As the StNVP manufacturer does not have to take part in a dual system scheme, the waste belongs to residual waste. Out of ignorance, many consumers do not adhere to the separation rule here and dispose of the products using the yellow collection systems. This is what is known as an “intelligent misthrow”. There is legislation currently being debated in politics which would require the non-packaging of the same material to be disposed of using the yellow system in future.

## **Other composites**

Other composites is a concept that is the result of dual systems and is not universally defined. In the context of the Packaging Ordinance, other composites is all composite packaging with the exception of liquid cartons such as plastic-aluminium composites, paper-plastic composites, etc.

## **Plastic**

Plastics are materials that have been produced artificially or by modifying natural products. They are made from crude oil or coal. Plastics are composed of long carbon chains. They play a major role in the packaging industry; the plastics that are used most often are polyethylene, polypropylene, polystyrene and polyethylene terephthalate (PE, PP, PS and PET).

## **Producer responsibility**

Producer responsibility was introduced in Germany for the first time in 1991 by the Packaging Ordinance for an area of waste legislation. It describes a producer or distributor’s responsibility for the entire life cycle of a product – from manufacturing to disposal. The key elements are comprehensive take-back, recovery and deposit obligations. In accordance with the Packaging Ordinance, any company that puts sales packaging into circulation must take this back free of charge and recover it after use. Thanks to the Recycling Act, product responsibility has been determined to be a prerequisite for constructive life-cycle management and was extended to all consumer goods and commodities.



## **Polyethylene**

Polyethylene (PE) is a thermoplastic material with a waxy surface. It is the world's most produced plastic and is widely used as a raw material in the packaging industry. Polyethylene is also used in the manufacturing of toys, rubbish bins and plastic film.

## **Polyethylene terephthalat**

Polyethylene terephthalate (PET) is a plastic from the polyester family which is processed and used for a variety of applications. It is mainly used for manufacturing plastic bottles and for processing textile fibres. PET packaging has its own identification code to make recycling easier.

## **Polylactic acid (Polymilchsäure, biologisch abbaubarer Kunststoff)**

Polylactid (PLA), auch Polymilchsäure genannt, ist ein biologisch abbaubarer Kunststoff, aus dem sich unterschiedlichste Produkte wie T-Shirts, Kaffeetassen, Fast-Food-Verpackungen oder Flaschen umweltverträglich und ressourcenschonend herstellen lassen. PLA wird aus Milchsäure und damit auf Basis nachwachsender Rohstoffe hergestellt, wodurch fossile Ressourcen wie Erdöl geschont werden.

## **Polypropylene**

Polypropylene is the plastic with the second highest turnover in the world. PP can be used in many ways due to its hardness, chemical and heat resistance. In the packaging industry, it is used as a container for goods and foodstuffs.

## **Paper and board**

In Germany, paper and board (PPK) that becomes waste (also called waste paper) is collected and recycled in a shared system (especially printed matter and packaging). PPK consists largely of wood. Waste paper fibres can be recycled up to five times. Recycled waste paper is the most widely used raw material in paper production. Corrugated board can even be made entirely from recycled paper. Waste paper is also a very important raw material for the production of PPK packaging.



## **Polystyrene**

Polystyrene (PS) is a widely used, thermoplastic bulk plastic. Many consumer goods and packaging are made from PS, such as yoghurt pots, clothes hangers, clothes pegs and CD cases.

## **Polyvinyl chloride**

Polyvinyl chloride (PVC) is a plastic that is produced in large quantities and has a wide range of uses. In the packaging industry, it is used to manufacture plastic films and composite packaging among other things. Its applications are greatly limited due to its chlorine content, resulting in PVC being used mainly in the construction industry, for instance in window frames and floor coverings.

## **Packaging Ordinance**

With the 1991 German Packaging Ordinance (VerpackV), manufacturers and distributors were forced to take responsibility for the disposal of packaging. The Packaging Ordinance has been amended repeatedly, resulting in the monopoly held by DSD being lifted among other things. The fifth and most recent amendment of the Packaging Ordinance was carried out in 2008.

## **Proof of recovery**

The proof of recovery refers to verifiable proof that material from waste has been received at the recycling plant, i.e. where a new product is produced and that the material will no longer require any waste-specific treatment. For the dual system or industry solution volume flow record, evidence from a trader of waste fractions is not sufficient. In addition, plastic packaging, plastic composites, drinks cartons and paper composites require additional certification from an expert in packaging disposal proving the suitability of the plant.

## **Public service waste management authorities**

Public service waste management authorities are all local waste management companies. In accordance with Section 15 of the Closed Substance Cycle & Waste Management Act, they are obligated to dispose of and recover the accumulated and allocated waste from private households and other collection points.

## **Raw material recycling**

With raw material recycling, waste plastic is chemically altered and converted back into raw material such as oil, methanol or carbon monoxide. The resulting chemical or petrochemical precursors are fed back into a material cycle in refineries or chemical plants. The main methods of raw material recycling are the reduction method and methanol production.

## **Recovery**

Packaging waste can be recycled either into material (material or raw material) or into energy. While recycling can be used to produce new products, with energy recovery (incineration), energy is used to generate heat and electricity. The Packaging Ordinance requires minimum recycling quotas for the various material groups (see recovery quotas).

## **Recovery quotas**

Recovery quotas specify to the dual systems what percentage of the mixture of sales packaging used by private final consumers licensed with them have to be sent for recovery for each type of material. The quotas are stipulated in the Packaging Ordinance. For the individual fractions, these are:

- Glass: 75 per cent
- Tinplate: 70 per cent
- Aluminium: 60 per cent
- Paper and board: 70 per cent



- Composites/drinks cartons: 60 per cent
- Plastic: 60 per cent, of which 60 per cent in turn must be sent for material recovery.

The systems must demonstrate that they have complied with the recovery quotas in the yearly volume flow record.

### **Recyclables**

Recyclables are materials that are suitable for further use. Usually these include plastics, metals, paper, composites, textiles and glass. In recent years, the waste industry has increasingly developed into a recycling industry.

### **Recyclates**

Recyclates is the umbrella term for plastics derived from recycling plastic waste. This include re-granulates.

### **Recycling**

Recycling is when used materials (such as packaging) are reintroduced into the material life cycle. For this, the materials are collected, sorted and refined so that they can be subsequently recovered for material or energy. Recycling conserves resources for manufacturing new products and avoids waste.

### **Recycling Act**

The Recycling Act (KrWG) is the fundamental federal law on waste legislation in Germany. With the amendment of 24 February 2012, the EU Waste Framework Directive has been transposed into German law and the existing German waste legislation has been modernised comprehensively. The aim of this Act is to ensure the sustainable improvement of environmental and climate protection and resource efficiency in waste management by reinforcing waste avoidance and waste recycling. At the heart of this is a five-step waste hierarchy (prevention, preparation for re-use, recycling, other recovery, disposal).

## **Recycling bin**

The recycling bin is a concept for developing the modern yellow system. Waste such as plastic, metal and composite materials can be disposed of in the recycling bin, regardless of whether it is packaging or not. When introduced, recycling quotas in Germany shall increase and the separation system for consumers shall be simplified. Until now, the recycling bin has merely been a pilot project in some German local authorities. It can only be introduced nationwide throughout Germany if there is a new law at federal level. The Recycling Act has already created the foundations for this.

## **Reduction method**

The reduction method is a method of recycling raw materials of plastic waste used for manufacturing iron. Here, the iron ore, which is melted in a furnace at about 2000 degrees, is fed into a plastics agglomerator. Due to its carbon content, the plastic deprives the iron ore of oxygen, producing pig iron. This means that the plastic waste can replace heavy oil.

## **REMEDICA**

REMEDICA is a Reclay Vfw GmbH take-back and disposal system for waste medicines in Germany. Since 1995, REMEDICA has been collecting and disposing of drug residues and expired medicines in environmentally friendly manner. Nearly 4,000 pharmacies participate in this system throughout Germany. REMEDICA works together with the pharmacy partner WEPA Apothekenbedarf GmbH & Co. WEPA supplies the participating pharmacies with collection bags. The filled bags are collected regularly when required and disposed of directly in accordance with the provisions of the Recycling Act.

## **Remaining stock management**

Remaining stock refers to goods/materials that are accumulated in a company and which cannot be marketed in the usual way. This includes out-of-specification goods, second rate goods, returns, semi-finished goods and raw materials. This can also include used production machines. With remaining stock management, the Reclay



Group is providing a service that consists of selling the products/materials for profit or, if this is not possible, disposing of them. For example, there is the option of choosing a different marketing location, changing the product's scope of application or modifying the product. Specific customer requirements must be taken into consideration here in order to prevent damage to the brand.

### **Refuse-derived fuel**

Refuse-derived fuels (EBS), also referred to as solid recovered fuel, are fuels derived from waste. The raw materials for producing refuse-derived fuels are ostensibly non-recyclable plastics and industrial waste, sorted waste from waste sorting plants and bulk and commercial waste. Refuse-derived fuels provide an alternative to fossil fuels for industrial, heating and cement power plants.

### **Reusable packaging**

For the purposes of the Packaging Ordinance, reusable packaging is packaging that is intended to be reused multiple times for the same purpose after use. All other packaging is non-returnable packaging. Reusing packaging contributes towards conserving fossil resources and reducing waste. A common example of reusable packaging is refillable drinks containers.

### **Sales Packaging**

Sales packaging is any packaging that is offered as a sales unit and is used by the final consumer.

### **Swim-sink process**

The separation process, also called the swim-sink process, is a method of sorting different types of plastic using water as a separating medium. The differences in weight that different types of plastic at the same volume have are used for this. For example, the light plastic polypropylene will float on the surface of the water, while the heavier polystyrene will sink.

## **Secondary raw materials**

The raw materials recovered from recycling are referred to as secondary raw materials. They can be used to manufacture new products. Recycling packaging mainly involves glass, paper, plastic, aluminium and tinplate. Using secondary raw materials conserves natural resources, thereby contributing towards environmental protection.

## **Secondary packaging**

Secondary packaging is additional packaging that is not required for reasons of hygiene, durability or to protect the goods from damage or contamination. They are used ostensibly for marketing purposes.

## **Sorting**

All types of waste are collected by the collectors and are often brought to modern sorting plants afterwards. They are separated there into different material fractions in several steps. Using modern technology, the sorting process is almost fully automatic and very accurate. Pressed into bales, the individual material fractions are then sent for recovery.

## **System participation obligation**

In accordance with Section 6(1) of the Packaging Ordinance, manufacturers and distributors of sales packaging to be collected from the private final consumer are obligated to participate in one or several dual system schemes to ensure that such packaging is collected nationwide

## **Service packaging**

Service packaging is a special subcategory of sales packaging. Service packaging is delivered to the place of purchase (business, restaurant or other service provider) separately from the goods and offered there initially without the goods. However, they

are designed to be filled with goods within the premises of the point of sale. They are therefore considered to be sales packaging as defined by the Packaging Ordinance. One example of this is the bag for bread that you get from the bakery.

## **Sustainability**

The term sustainability is used in many contexts. In general it refers to the equal consideration of environmental, social and economic aspects. The purpose of sustainable action is to ensure the well-being of the environment, society and economy not just for the present, but also for the future.

## **Tinplate**

Tinplate consists of a steel sheet that is finely rolled into a thickness of 0.13 – 0.50 mm. As tinplate is almost exclusively used as a packaging material (approx. 90 per cent), it is also known as packaging steel. A distinction is made between heavy sheet metal, used for tins for example, and well-malleable sheet metal, which is used to manufacture drinks cans for example.

## **Trademark**

With trademarks – in contrast to manufacturer brands –... it is the trade and not the manufacturer who owns the rights to the brand. Trademarks are almost always sold by the trading company in their own or in related points of sale. In most cases they are in a lower price level than manufacturer brands of the same quality.

## **Transport packaging**

Transport packaging is packaging that either makes it easier to transport goods, protects goods from damage during transport and/or is used for safety reasons. As all of these characteristics also apply to sales packaging, the place of use is crucial for classifying the packaging as transport packaging. Transport packaging is used by the distributor (not by the final consumer) and is not delivered to the final consumer together with the goods.

## **Umweltbundesamt [German Federal Environmental Agency]**

The UBA was founded in 1974 and is the central environmental authority in Germany. The main legal duties include providing scientific support to the federal government, enforcing environmental legislation and informing the public about environmental protection. The UBA is based in Dessau and is part of the Federal Ministry for the Environment.

## **Vertically integrated system operators**

Vertically integrated system operators are dual system suppliers that are owned by actively operating corporate disposal groups. While vertically integrated system operators carry out a portion of the sorting and recovery services in their intra-group or associated companies, the other dual systems only commission third parties to carry out operational disposal services.

## **Verband der bayerischen Entsorgungsunternehmen e.V. [Association of Bavarian Waste Disposal Companies]**

The Verband der Bayerischen Entsorgungsunternehmen e.V. (VBS) has represented the interests of the medium-sized private waste management industry in Bavaria since its foundation in 1973. The VBS represents a number of member companies from all regions of Bavaria. It is committed to environmentally-friendly waste management that is in the public's interest and the sustainable conservation of important resources. The Association is based in Munich.

## **Declaration of Completeness**

The Declaration of Completeness is evidence of the volumes of sales packaging that a manufacturer or distributor has put into circulation during a calendar year. In accordance with Section 10(1) of the Packaging Ordinance, all companies obliged must submit the Declarations of Completeness for the previous year to their relevant Chamber of Commerce by 1 May.

## **Verband kommunale Abfallwirtschaft und Stadtreinigung im Verband kommunaler Unternehmen e.V. [The Association of Local Waste Management and City Cleaning in the Association of Local Utilities]**

Founded in 1949, the Verband kommunaler Unternehmen (VKU) is an interest group concerned with local utilities and waste management in Germany. Since 1912, the Verband kommunaler Abfallwirtschaft und Stadtreinigung (VKS) has been representing the interests of public service waste management and city cleaning companies and their associated branches of industry. The VKS has been part of the VKU since 2003. It is based in Berlin.

### **Volume flow record**

The volume flow record is the annual proof of the amount of packaging collected and recovered which dual systems and self-managers (operators of industry solutions) must provide for the highest state authority responsible for waste management. The VFR is used to ensure that sales packaging is collected, sorted and recovered correctly. The Packaging Ordinance is the legal framework. The VFR must show that the recovery quotas laid down in the ordinance were achieved. An independent expert must certify that the requirements have been fulfilled.

### **Weighing packaging**

Packaging is weighed in order to be able to correctly determine the weight of the individual packaging components for each packaging material fraction or to determine whether an object is packaging that must be licensed. When the packaging is weighed, it must be ensured that the packaging has been emptied, cleaned and completely dried.

### **White line/Yellow Line**

In the market for milk and milk products, there are two product classes: the white line and the yellow line. The white line includes fresh milk, milk-based drinks, cream products, yoghurt, quark and certain prepared desserts (e.g. rice pudding). The yellow line includes cheese products such as natural cheese (e.g. ordinary semi-hard cheese), cream cheese, soft cheese, sour milk cheese, red mould cheese, feta cheese and mozzarella.

## **Waste balance**

The waste balance summarises the type, amount and destination of waste that is accumulated within a certain period of time in a defined area. Waste balances can be created, for example, for individual companies, local authorities or for federal states. The Recycling Act (KrWG) stipulates that waste producers must create a waste balance if they produce over a certain amount of waste in a waste code requiring special monitoring or monitoring annually.

## **Waste Catalogue Ordinance**

The Waste Catalogue Ordinance (German abbreviation: AVV) specifies the designation of waste and the classification of waste materials according to the risks they pose. The types of waste and six-digit waste codes are listed in the ordinance annexes (waste catalogue) for designation. The AVV transposes the European Waste Catalogue into German Law.

## **Weighing receipt**

In the waste management industry, the weighing receipt allows the weight of incoming waste to be documented as well as the weight of the sales packaging for the volume flow record. In the sorting, processing and recovery plants, the lorries with the waste drive over calibrated scales. There is a log printer at the terminal that records the weighing data.

## **WEEE**

### **Waste of Electrical and Electronic Equipment (Elektro- und Elektronikgeräte-Abfall)**

WEEE stands for Waste Electrical and Electronic Equipment. The European Commission issued a WEEE Directive (Directive 2002/96/EC) which is transposed into German law by the Electrical and Electronic Equipment Act (ElektroG). The law regulates the sale, return and environmentally friendly disposal of electrical and electronic equipment.

## **Yellow bin/yellow bag**

The yellow bin and yellow bag (yellow system) are collection containers for lightweight packaging waste generated in households. It is mainly sales packaging made from plastic, aluminium, tinfoil and composite materials that is collected in the yellow system. The yellow bag was originally only for packaging marked with the Green Dot. Today, all dual systems use this collection structure, which means that all sales packaging waste can be collected in the yellow system.