WP6

Portray of current body of rules describing local and regional situation

6.1.

6.1.1.

November 2014

I. Introduction

In order to manage waste paper collection and recycling it is important to identify the sources, types and application of waste paper generated. According to data gathered by the confederation of European Paper Industries, CEPI, for European member countries roughly 50% of waste paper originates from industrial and commercial sources, and the remaining 50% from households, offices and small businesses. Out of this 50%, 40% stems from households and small business and 10 % from offices.

The primary uses of paper are for newspapers, magazines, applications linked to information, communication and packaging. The use for newspapers, magazines etc still prevails, though the share of paper used as packaging is increasing. The European waste paper recycling rate for 2012 was 71,7% according to CEPI's latest sustainability report for 2013, with paper and board being the most recycled packaging in Europe achieving a recycling rate of 81,3% in 2011. Generally, there is a lack of data on collection, collection and recycling rates by specific grades of paper (for example, for office printings, or for newspapers, etc.), partly due to the fact that many of the waste paper streams consist of mixtures of different types of papers.

Approximately 20% of all the paper on the market is considered non collectable (archives, wall paper, bank notes, libraries), or non-suitable for recycling (hygiene and tissue paper, some types of food packaging, etc.) which is transferred to landfills (5-6%), incinerators or other waste treatment systems.

The proportion of packaging made from uncoated and untreated paper and board, coming into direct contact with food bought by the end-consumer was estimated to be less than 3.5% (3.39% is the actual value quoted) of all direct contact food packaging in the EU-15 in 2001; compared to other direct contact food packaging materials, for example plastics (estimated proportion around 70%). The proportion of packaging made from coated paper and board commonly used to pack food with very high moisture contents was estimated to be 17%.

II. Identifying paper waste and key terminology

Waste defined as "any substance which the holder discards or intends or is required to discard" remains the most important definition in the waste directive, as it is the starting point of decisions regarding further management.

European decision 2000/532/EC establishes a list of waste to facilitate harmonised classification of waste and hazardous waste within the EU.

The list of wastes is divided into 20 chapters, 1-12 and 17-20 are systemized according to waste origin with chapter 1-12 designating production activities and 17-20 portraying general waste, including wastes from construction, waste processing and household waste. Chapters 12-15 categorise auxiliary production materials and articles such as lubricating oils, solvents and packaging. Chapter 16 is left for miscellaneous wastes end-of-life vehicles, waste electrical equipment, batteries, transport tank washings etc. Individual waste streams must be assigned a six digit code. Hazardous waste entries are marked with an asterisk, these entries can be either so called mirror entries, where the same code is included twice, once with an asterisk to depict a hazardous waste stream and once without an asterisk to designate a nonhazardous waste stream. So called absolute hazardous waste streams also exist in cases where the waste stream may only be considered hazardous, with a single same waste code entry marked with an asterisk.

When paper has been defined as waste by the holder, it may be, depending on its source of origin be classified as

- subchapter 03 03 Wastes from pulp, paper and car1dboard production and processing as 03 03 07 and 03 03 08,
- subchapter 15 01 as 15 01 01 - paper and cardboard packaging and 15 01 10* contaminated packaging
- subchapter 15 02 Absorbents, filter materials, wiping cloths and protective clothing as 15 02 02* contaminated paper wipes and 15 02 03 paper wipes
- subchapter 18 01 Wastes from natal care, diagnosis, treatment or prevention of disease in humans as 18 01 03* infectious paper towels and 18 01 04 paper towels
- subchapter 18 02 Wastes from research, diagnosis, treatment or prevention of disease involving animals as18 02 02* infectious paper towels and 18 02 03 paper towels
- 19 12 wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified as19 12 01 paper and cardboard and
- 20 01 Municipal waste /separately collected fractions as 20 01 01 – paper and cardboard.

Preventing loss of material resources to permanent waste disposal has become a pressing issue in EU waste policy in recent years. Waste paper has always been considered a highly recyclable commodity and is one of the waste fractions, the waste framework directive 2008/98/EC, obliges Member states in Article 11(1), paragraph 3 to introduce separate collection for, by 2015.

Considering that the aim of separate collection is high-quality recycling, the introduction of a separate collection system is not necessary if the aim of high-quality recycling can be achieved just as well with a form of co-mingled collection. So, co-mingled collection of more than one single waste streams may be accepted as meeting the requirement for separate collection, but the benchmark of 'high-quality recycling' of separately collected single waste streams has to be examined; if subsequent separation can achieve high-quality recycling similar to that achieved with separate collection, then co-mingling would be in line with Article 11 WFD and the principles of the waste hierarchy. Practically, this usually excludes co-mingled collection of bio-waste and other "wet" waste fractions with dry fractions such as e.g. paper.

In the paper industry waste paper is most commonly referred to as recovered paper and has been regarded a raw material since the development of technologies capable of recycling collected waste paper streams.

The waste framework directive 2008/98/EC, on the other hand defines recovery as any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste been prepared to fulfil that function, in the plant or the wider economy. A nonexhaustive list of possible recovery operations are specified in annex II of the waste framework directive. In general recovery operations are considered as preparations for reuse, recycling and other recovery for example energy recovery.
With these additional definitions the latest framework directive extended recovery in the waste hierarchy to include preparing for reuse as a recognised mode of recovery alongside recycling and other recovery, e.g. energy recovery. Recycling being the optimal choice for waste paper recovery as:

Recycling means any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations. As waste paper whether originating from graphic applications, office paper and packaging have always been deemed highly recyclable, except in instances when the packaging has come in direct contact with food or polluting materials, which deteriorate the recyclability of paper.

Reuse, the waste framework directive 2008/98/EC defines reuse as any operation by which products or components that are not waste are used again for the same purpose for which they were conceived.

Preparing for reuse means checking, cleaning or repairing recovery operations, by which products or components of products that have become waste are prepared so that they can be re-sued without any other pre-processing. A similar conclusion regarding preparing paper for reuse may be drawn as in the description of reuse. When paper comes into the waste stream, preparation for reuse is generally not a feasible option.

Re-use and recycling targets. According to the waste framework directive paper is one of the waste streams which falls into the targets for preparing for re-use and recycling of waste to a minimum of overall 50% by weight, from households and possibly other origins as far as these waste streams are similar to waste from household, by 2020.

Waste statistics show that packaging is an important source of paper consumption. Due to large and ever increasing quantities of waste packaging, packaging and waste packaging are in addition to the waste framework directive also subjugated to a special directive 94/62/EC on packaging and waste packaging. According to the packaging and waste packaging directive 'packaging waste` is determined as any packaging or packaging material covered by the definition of waste in the framework directive, excluding production residues. The technical report for an end-of-waste proposal for paper prepared by JRC IPTS in March 2011, recorded that 41% of paper consumption in CEPI countries went to packaging application with the largest consumption stream being information / graphic at 47%.

The directive on packaging and waste packaging has both environmental objectives and safeguards to support the functioning of the internal free market of goods. It was amongst the first to introduce the extended producer responsibility concept in order to strengthen the re-use and the prevention, recycling and other recovery of waste, as the legal entity placing goods on the market remains responsible for post-consumer waste packaging.

The latest waste framework directive reinforces this concept designating that Member States may take legislative or non-legislative measures to ensure that any natural or legal person who professionally develops, manufactures, processes, treats, sells or imports products has extended producer responsibility. Post consumer responsibility coupled with so-called essential packaging requirements limiting contents of hazardous substances and heavy metals in packaging, requiring statements on recovery waste packaging recovery options and conditions of re-use set the base for the inclusion of environmental considerations during the packaging design or eco-design.

From waste to resource

In response to EU judicial experience, gained after the initial waste directive came into force in 1975 the latest waste framework directive includes new definitions for by-products and end-of-waste status. The proposed steps to define by-products clarify how to ascertain if a residue should be considered as waste or a by-product.

By-products The waste framework directive determines a process to determine production residues which could be considered as by-products in Article 5 of the waste directive, which could be important for certain residues being generated as an integral part in the paper and cardboard production process, which have further use, can be used directly without any further processing other than normal industrial practice, for which further use is lawful, i.e. the substance or object fulfils all relevant product, environmental and health protection requirements for a specific use, that does not lead to overall adverse environmental or human health impacts.

Hypothetically waste paper which occurs as cut-off waste during the production of packaging or during printing could be considered as a by-product if they are of adequate quality to be processed as a raw material in the paper mill.

As the most prevalent streams of waste paper occur in applications mainly linked not to the production but to the consumption process, the option to declare end-of-waste, seem much more attractive.

End-of-waste status Article 6 of the waste directive lays down the requirements to achieve end-of-waste status. It designates that waste shall cease to be any substance or object which the holder discards or intends or is required to discard, when it has undergone a recovery, including recycling, operation and complies with specific criteria to be developed when the substance or object is commonly used for specific purposes; a market or demand exists for such a substance or object and the substance or object fulfils the technical requirements for the specific purposes and meets the existing legislation and standards to products. The use of the substance or object must not lead to overall adverse environmental or human health impacts. End-of-waste specific criteria should be considered among others at least for aggregates, paper, glass, metal, tires and textiles.

Proposal for end-of-waste status paper

Paper waste was one of the waste streams for which the European Commission Joint Research Centre Institute for Prospective Technological Studies prepared a End-of-waste criteria for waste paper technical proposal/EUR 24789 EN - 2011/, which was followed by a Proposal for a COUNCIL REGULATION on defining criteria determining when recovered paper ceases to be waste pursuant to Article 6 (1) of Directive 2008/98/EC on waste COM(2013) 502 final. The proposal suggested by the European Commission would move the point where waste paper stops being waste from the paper mill output to an earlier stage in collection. The European Environment Committee objected to the draft regulation in November 2013, and put forward a resolution to block the proposal, which the European Parliament supported by a vote majority on 10th December 2013. The EEC stated the Commission had not properly assessed the impact of the proposed regulation. MEP noted that if recovered paper was granted the proposed end-of-waste status before it was recycled it could be traded freely on the global markets and the safeguards of the waste shipment regulation would no longer apply. Concern was voiced that such a regulation could lead to a decrease the European paper recycling rate due to reduced availability of waste paper.

End-of-waste compost, biogas and digestate

As in the case of waste paper streams, a technical proposal - Report EUR 26425 EN has been prepared for End-of-waste criteria for biodegradable waste subjected to biological treatment (compost & digestate), by the JRC-IPTS. The final report was published in December 2013. It defines biodegradable waste as any waste capable of aerobic or anaerobic decomposition, such as food, garden waste, and paper and paper board.

It is estimated that most waste paper and board are collected separately undergoing material recovery /recycling. Some small quantities of paper and cardboard waste may be included as fractions in mixed municipal solid waste. In plants for mechanical separation and biological treatment, the mixed MSW undergoes a mechanical sorting of the waste into a biodegradable material containing fraction and a non-biodegradable material containing fraction. The latter fraction may be further split, especially to sort out and recycle metals or other recyclables. The remainder of the non-biodegradable containing material fraction is either landfilled or incinerated. The biodegradable material containing fraction is then composted or anaerobically digested

National criteria end-of-waste

Where criteria for end-of-waste have not been set at Community level, Member States may decide case by case whether certain waste has ceased to be waste taking into account the applicable case law. Where such a decision has been made by a member state, the latter must notify the Commission of such a decision. As waste paper is biodegradable, compostable and combustible, portions of the paper waste stream may be susceptible to loss to mixed waste streams, especially municipal mixed waste ones, which are undergo composting and biogas production or preparation of refuse derived fuel.

III. Common EU legislative framework

Initial waste legislation was designed to protect both the environment and public health. It reflected a need for strict control of waste flows so as to "dispose" of them as cheaply as possible. Recent changes in waste legislation were initiated to support a refocus of our view of waste solely through the perspective of waste management and to consider options to exploit it as a valuable resource.

III.1 Waste framework directive 2008/98/EC

The waste framework directive 2008/98/EC provides no common limitations or approach on how waste paper should be collected from different sources. According to the directive collection is the gathering of waste, including the preliminary sorting and preliminary storage of waste for the purposes of transport to a waste treatment facility, whilst separate collection means the collection where a waste stream is kept separately by type and nature so as to facilitate specific treatment. In accordance with the waste paper sources described above, it may be assumed for a majority of EU member states, that roughly 50% of it is gathered primarily by private organisations from larger industrial sources and retailers, mainly in the form of packaging within extended producer responsibility packaging schemes and paper residues from printing and graphic industries.

The remaining half of waste paper is collected from private households, small business operators, retailers and offices. There is no universal approach towards the collection of this waste stream in the EU. A lot of it is collected by public municipal waste services either as separate waste streams of graphic paper and newspapers and waste packaging, or more or less co-mingled collection of different household waste streams, either extracting waste paper consisting of packaging, newspaper, magazine and other paper as one separate stream or collecting these fractions with other waste fractions, such as packaging or mixed municipal household waste, depending on the economic, technical and environmental feasibility for separate collection of various waste fractions.

Due to the rising and significant quantities of packaging in waste streams, specific requirements for packaging and packaging waste were introduced at EU level.

III.1a Packaging and waste packaging directive

On matters of packaging reuse the packaging and packaging waste directive 94/62/EC refers to EN Standard 13429, the currently valid issue of which was published in 2004. The standard defines reuse as an operation by which packaging, which has been conceived and designed to accomplish within its life cycle a minimum number of trips or rotations, is refilled or used for the same purpose for which it has been conceived, with or without the support of auxiliary products present on the market enabling the packaging to be refilled: such reused packaging will become packaging waste when no longer subject so reuse.

While printed paper in the form of books has a long history of reuse, paper used as packaging does not conform to the requirements set for packaging reuse in standard EN 13429 rendering reuse of paper packaging as practically inapplicable. It can be concluded that paper reuse depends greatly on what the paper was initially used for.

EN standard 13430 determines general requirements for packaging recoverable by material recycling applicable to all recyclable packaging materials.

According to EU legislation waste recovery operations must hold environmental permits and abide by their requirements. Waste permits and environmental permits - Directives 2008/98/EC and 2010/75/EU.

Though waste paper streams are recognised as a commodity with a market value, this does not mean that sites performing recovery of such waste streams are exempt from the requirement expressed in Article 23 of the waste framework directive, requiring any establishment or undertaking intending to carry out waste treatment (recovery & disposal) to obtain a permit from the competent authority. An obligation to hold a permit is reinforced and complemented by the requirements of Directive 2010/75/EU concerning industrial emissions where production in industrial installation of pulp from timber or other fibrous materials and paper or card board with a production capacity exceeding 20 tonnes per day are included as activities, to which the directive applies, thus requires to carry and integral environmental permit. Permit conditions for these installations are referenced according to BAT (Best Available Technique) conclusions, which are established through exchange of information between Member States, the industries concerned, non-governmental organisations promoting environmental protection and the Commission.

Annexes A and B of the standard EN 13430 define procedures to be followed from packaging design to post used collection and sorting so that a certain percentage of packaging may be claimed recyclable. This entails selection of raw materials that do not affect recycling negatively and use of materials or their combinations which are compatible with recycling technologies. It gives reference to the packaged goods and packaging design. Waste packaging must be designed in such a manner that it may be emptied by the end user, while the material should be easily identified by the waste collector in order to ensure it is appropriately sorted.
The standard provides examples of compliance summary statements for packaging to be recovered by material recycling after use and declaration of percentage of a functional unit of packaging available for recycling.

Standard EN 13432 defines requirements for packaging recoverable through composting and biodegradation.

Due to its biological origin, used paper is biodegradable and compostable. The Waste Directive includes composting in material recycling however, the difference is that once paper is composted it disappears from the paper recycling loop. For materials that are not suitable for recycling, for example paper soiled with food, composting would be a good alternative to incineration or landfilling, and used paper bags are a good carrier for bio-waste. At the moment, any paper going for composting is not included in the calculation for the European recycling rate.

Standard EN 13432 offers a test scheme and evaluation criteria for final acceptance of packaging. The standard offers guidelines for composting in controlled waste treatment plants and does not take into account packaging waste which may end up in the environment. Constituents known to have a negative effect on the environment should not be deliberately introduced into packaging or packaging materials. Compost quality should not be compromised by the material or its harmful constituents. Materials of natural origin such as wood, wood fibre, cotton fibre, starch paper pulp and jute should be accepted as being biodegradable without testing, though they need to still be chemically characterized and fulfil the criteria for disintegration and compost quality.

In addition to recycling and composting, waste paper can be processed into refuse derived fuel or RDF. Standard EN 13431 determines requirements for packaging recoverable in the form of energy recovery, including specification of minimum inferior calorific value. The standard notes that packaging composed of more than 50% (by weight) of organic content e.g. wood, cardboard, paper and other organic fibres, starch, plastics provides calorific gains and meets the minimum calorific value required for energy recovery. Nevertheless care should be taken not to expose these organic materials to materials and substances which could have a negative effect on the environment during energy recovery. Annex C of the standard provides guidelines on substances and materials liable to have a negative influence on the energy recovery process and material, combinations of materials or design of packaging liable to create problems during energy recovery.

Due to its renewable origin, recovered paper is considered as biomass and therefore a renewable energy resource. It is true that incineration of used paper generates renewable energy and therefore allows the substitution of fossil fuels but it is more efficient to burn used fibres only when they can no longer be recycled. The Waste Directive gives recycling a clear priority over incineration.

III.2 Other relevant EU legislation

Combustion, Incineration and co-incinerations

Installations performing energy recovery and disposal operations must hold a permit according to the waste framework directive. The waste framework directive defines disposal as any operation which is not recovery. Annex V and Annex VI of directive 2010/75/EU on industrial emissions contain technical provisions relating to large combustion plants and waste incineration plants and co-incineration plants respectively.

While paper waste theoretically could be subject to energy recovery and incineration a market as such does not exist today for waste paper to incineration according to the study for the end-of-waste technical proposal for paper. A market for energy recovery of waste paper may exist in the future, but there is no evidence of it today. As for non-paper mill recycling uses, the before mentioned study declares the market for these are marginal, and they are to be considered as end-use alternatives to disposal.

As mentioned, there is currently no evidence that non-paper mill recycling or energy uses of waste paper are commonly used specific purposes for waste paper, except for very specific waste paper grades (see details below) that represent very small percentages (under 8% of the collected paper flow), and are in most cases part of multi-material mixtures.

The combustion of waste in incinerators allows diminution of the waste for material recovery (e.g. metals) or disposal in landfills to an inorganic ash residue. Large-scale mass burn incineration is the most common form of incineration today. It means that waste is combusted with little or no sorting or other pre-treatment. In most present day incinerators, the energy is recovered to produce electricity and/or heat.

A proposal for directive on the limitation of emissions of certain pollutants into the air from medium combustion plants Brussels, 18.12.2013 SWD (2013) 536 final shall apply to operators of combustion plants within the range from 1 to 50 MW irrespective of the type of fuel used.

The proposal determines limit values and requires registration of medium sized combustion plants. It defines fuel' as any solid, liquid or gaseous combustible material; and 'biomass' which among other means also products consisting of any vegetable matter from agriculture or forestry which can be used as a fuel for the purpose of recovering its energy content.

The waste shipment regulation (EC) No 1013/2006

The Waste shipment regulation lays down rules for shipments of waste both within the EU and between the EU and third countries. It specifically prohibits exports of hazardous waste to countries outside the OECD and exports of waste for disposal outside EU/EFTA.

Different regimes apply to shipments of wastes for disposal and for recovery, as well as to hazardous and "green-listed" non-hazardous wastes, and to some special categories in-between. The shipment of hazardous wastes and of wastes destined for disposal is generally subject to notification procedures with the prior consent of all relevant authorities of dispatch, transit and destination, while green-listed wastes, as a rule, may be shipped for recovery within the OECD like normal commercial goods and only accompanied by certain information. The shipment of non-hazardous wastes to non-OECD countries depends essentially on whether the importing country accepts them and which procedures it wants to apply.

Paper waste streams are a recognised commodity with a market value. Paper product wastes are listed as so-called "green" listed waste in the annex III of the waste shipment regulation which includes Annex IX to the Basel Convention.

Non hazardous paper waste streams are designated within both annexes as: B3020 Paper, paperboard and paper product wastes. The following materials provided they are not mixed with hazardous wastes are considered waste and scrap of paper or paperboard:

- unbleached paper or paperboard or of corrugated paper or paperboard
- other paper or paperboard, made mainly of bleached chemical pulp, not coloured in the mass
- paper or paperboard made mainly of mechanical pulp (for example, newspapers, journals and similar printed matter)
- other, including but not limited to
- laminated paperboard;
- unsorted scrap.

This waste stream is subject to the general information requirements laid down in article 18; the main goal of which is to enable tracking of these shipments, requiring "green" waste shipments to be accompanied by the document contained in Annex VII of the waste shipment regulation.

On the 6th of May 2014 the EU council adopted a regulation amending regulation 1013/2006 on shipments of waste, which lays down requirements for shipments of waste within the EU and between the EU and third countries in order to protect human health and the environment.

The new regulation contains strengthened measures to ensure more uniform implementation of the waste shipment regulation throughout the EU. By 1 January 2017, member states will have to establish inspection plans, which must include the objectives and priorities of the inspections, the geographical area covered by the inspection plans and the tasks assigned to each authority involved in the inspections. The inspection plans must be based on a risk assessment. They are to be regularly reviewed and updated at least every three years. Member states will make information relating to inspections publicly available, including electronically, on an annual basis. The Commission will review the regulation by 2020.

The regulation will enter into force twenty days after its publication in the EU Official Journal. It will apply from 1 January 2016.

As mentioned, disposal is defined as any operation which is not recovery. The most frequently used method for disposal has been landfill. Council Directive 1999/31/EC determines conditions for landfill of waste.

Waste paper is often present as one of the fractions in municipal solid wastes from households. In the past, landfilling mixed MSW without pretreatment or separating out the biological fraction was common practice in most Member States. This option is today considered bad practice because it is associated with environmental and safety risks related to landfill gas with a high greenhouse gas potential (methane), leachate and space usage.

Through the Landfill Directive, the European Union has laid down strict requirements for landfills to prevent and reduce the negative effects on the environment as far as possible. Amongst other things, the Landfill Directive requires that waste must be treated before being landfilled and that the biodegradable waste going to landfills must be reduced gradually to 35 % of the levels of the total amount of biodegradable municipal waste produced in 1995.

III.3 The REACH regulation (EC) No 1907/2006

The REACH regulation (EC) No 1907/2006 does not apply to waste as defined in the waste framework directive. The regulation stipulates waste is not a substance, preparation or article within the meaning of the REACH regulation. This applies only until a material ceases to be waste, either due to the performance of a recovery processes or the waste has been prepared to comply with end-of waste status; or was declared to be a by-product and as not waste, it is necessary to verify REACH obligations. Within the meaning of the REACH regulation by-product' means a production residue that is not a waste; a 'production residue' is a material that is not deliberately produced in a production process.1 EINECS defined by-products as "substances which are produced without separate commercial intent during the manufacture of another substance." A by-product consumed by the same legal entity does not need to be registered while the by-product placed on the market is regarded as a substance that does need to be registered.

REACH offers some exemptions which must be considered in the evaluation of potential requirements. The guidance on waste and recovered substances, under reference: ECHA-10-G-07-EN states: "materials that have been recovered, that have ceased to be waste and that are subject to REACH obligations for substances, mixtures or articles. A recovery operator may be able to benefit from the exemption under Article 2(7)(d) of REACH:
"2.7. The following shall be exempted from Titles II, V and VI: […]
(d) Substances, on their own, in mixtures or in articles, which have been registered in accordance with Title II and which are recovered in the Community if:
(i) the substance that results from the recovery process is the same as the substance that has been registered in accordance with Title II; and
(ii) the information required by Articles 31 or 32 relating to the substance that has been registered in accordance with Title II is available to the establishment undertaking the recovery." "

Echas guidance on waste and recovered substances provides the following explanation of REACH requirements for recovered paper

"Recovered paper mainly consists of cellulose pulp. EINECS identifies cellulose pulp as follows: "The fibrous substances obtained from the treatment of lignocellulosic substances (wood or other agricultural fiber sources) with one or more aqueous solutions of pulping and/or bleaching chemicals. Composed of cellulose, hemi-cellulose, lignin, and other minor components. The relative amounts of these components depend on the extent of the pulping and bleaching processes." (EINECS number 265-995-8).

Cellulose pulp is listed in Annex IV, and consequently, exempted from registration, downstream user and evaluation obligations. Recovered paper may contain other constituents such as pigments, inks, glues, fillers etc. Regarding the recovery and recycling process, constituents that have no specific function in the material (cellulose pulp), can therefore be considered as impurities (see section 2.2.4).

Recovered paper consisting exclusively of cellulose pulp with impurities without specific function in the material will therefore be exempt from registration, downstream user and evaluation obligations."

IV. Green public procurement

In the European Union, Green Public Procurement (GPP) is defined as:
"A process whereby public authorities seek to procure goods, services and works with a reduced environmental impact throughout their life cycle when compared to goods, services and works with the same primary function that would otherwise be procured."

GPP is governed by the EU Public Procurement Directives which are then transposed in national legislations. The Member States at the national government level are required to adhere to sector-specific EU laws and to act upon mandatory GPP requirements on vehicles, energy performance of buildings, timber and information technology (IT) equipment (under ENERGY STAR). Definitions and verification techniques are also provided for renewable energy and organic food, however their purchase is not required.

In 2008 the European Commission adopted a Communication (Public Procurement for a Better Environment, 16 July 2008), which set a target for Member States to achieve a level of 50% green public procurement (GPP) by 2010 (defined as complying with the priority GPP core product criteria).

The concept underlying GPP relies on setting good performance environmental criteria for products and services and then utilising these during public procurement throughout Europe. Ensuring that the appropriate information and guidance is provided to procurers, to enable them to make informed sustainable and green procurement decisions, is a key challenge in this area.

The EU GPP criteria have been developed as part of the voluntary approach to GPP. The purpose of the EU GPP criteria is to identify the main environmental impacts of each of the products and services covered, and propose clear, verifiable and ambitious criteria to address these in the procurement process. They are not legally binding and encompass two separate levels – core and comprehensive. Member States are invited to include the criteria into their national GPP policies and individual contracting authorities to use them when procuring.
In practice, a number of Member States have either referenced the EU GPP criteria in their national action plans, or adopted criteria which reflect these quite closely.
Variations in the criteria adopted may reflect national differences in the market availability of products/services, approach to procurement and environmental and other priorities. Similarly individual contracting authorities may choose to adapt the criteria to meet their particular requirements. Individual contracting authorities can choose which criteria to apply, in the absence of specific national laws regulating this.
The EU GPP criteria are developed based on consultation with stakeholders and reflect the scientific and market knowledge available at the time of their publication. However in some cases contracting authorities may wish to either include or exclude certain elements. The EU GPP criteria are designed to be flexible in this way and do not remove the responsibility of the individual authority to act fairly, transparently and proportionately in determining which criteria to apply.
It is considered that by providing a common reference point based comprehensive assessment of environmental impacts, the EU GPP criteria contribute to the alignment of procurement practices in the absence of mandatory common criteria.
Having a number of differing schemes and criteria has a potentially negative effect on the European market for green products, as each has to comply with different standards in a number of Member States. Therefore working towards common GPP/SPP criteria would considerably reduce the administrative burden for both operators and those implementing GPP/SPP as well as for the business community supplying the products and services.

Where possible, the criteria mirror the criteria underlying the European Ecolabel. For each product/service group two sets of criteria are presented:

1. Core GPP criteria address the most significant environmental impacts, and are designed to be used with minimum additional verification effort or cost increases.
2. Comprehensive GPP criteria are intended for use by authorities who seek to purchase the best environmental products available on the market, and may require additional administrative effort or imply a certain cost increase as compared to other products fulfilling the same function.

GPP criteria have been proposed at EU level for copying and graphic paper. The key environmental criteria recognized in the technical background report to prepare GPP criteria and proposed solutions for copying and graphic paper are presented in the following table extracted from the report:

Table 1. Key environmental impacts – Copying and Graphic Paper

Impact		GPP Approach
• Forest destruction and potential loss of biodiversity • Emissions to air and water during pulp and paper production	→	• Procurement of paper based on post-consumer recovered paper fibres (recycled paper) or paper from legally and sustainably harvested wood
• Energy and water consumption during production • Chemical consumption during production • Waste generation during production such as rejects and sludge	→	• Procurement of paper produced through processes characterised by low energy consumption and emissions • Avoidance of certain substances in paper production and bleaching

In the process of GPP ecolabels and voluntary sustainability standards are cited as a reference tool in creating criteria, and secondly for verification, while not being a mandatory requirement. It is not possible to require conformance with particular ecolabels given possible trade implications. As such product guidelines and criteria have been issued, with the ecolabel being one (but not the only) way of demonstrating conformance to those criteria where relevant.

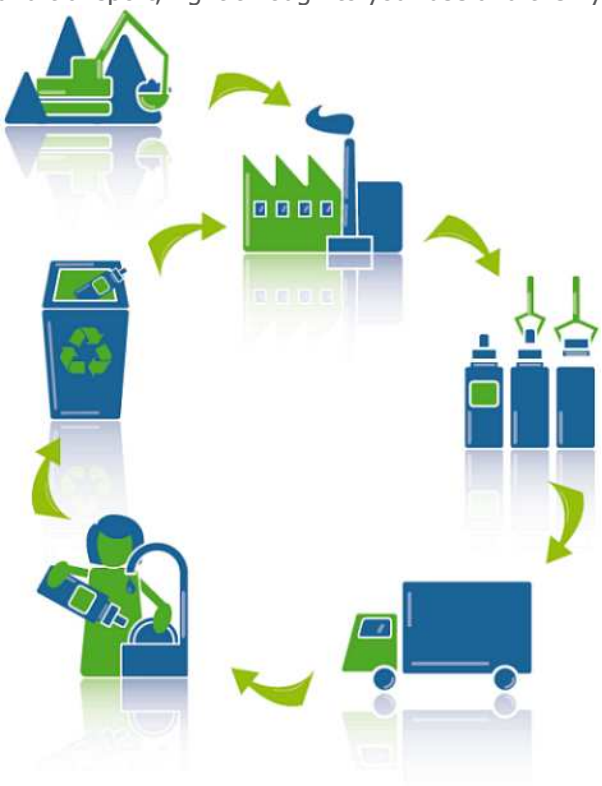
V. Environmental labels and EcoLabel

International standards describe three approaches to towards product environmental labelling determined in ISO standards ISO 14021 (type III), ISO 14024 (type I) and ISO 14025 (type II) and general rules regarding labelling and honest presentation to consumers in ISO 14020.

Type I labels are considered the most verified and trustworthy labelling initiatives, where clear and elevated environmental criteria determined through the product cycle are linked to a strict verification process to assert the actual implementation of claims. There are a number of Type I ecolabels for office paper such as the European Ecolabel, Nordic Swan, Milieukeur, Blue Angel, Good Green Buy, Czech Ecolabel, Hungarian Ecolabel, Austrian Umweltzeichen and others. In the European market, the most usual ones are the Blue Angel for 100% post-consumer recovered paper fibres (recycled paper); and the European Ecolabel and Nordic Swan for both recycled paper and paper based (totally or mainly) on virgin fibre. The recommended criteria are based on these ecolabels. Because the production of recycled paper and paper based on virgin fibre is different, the criteria of the various ecolabels are not the same. As highlighted in Section 2, the production of paper based on virgin fibre is characterised by a high water and energy consumption and emissions to air and water. The European and Nordic Swan ecolabel criteria focus on these aspects, as well as on the use of chemical products. On the other hand, the Blue Angel criteria for paper based on post-consumer recovered paper fibres concentrate on the use of chemical products in pulp and paper manufacture and on technical performance. Annex 1 presents a comparison of the criteria of these three ecolabels. Apart from these ecolabels, office paper can also be marked with the logos of the FSC or PEFC sustainable forest management systems. These, depending on what they state, can certify that paper is made of

100% recycled fibres or that it contains a minimum percentage of certified sustainable wood fibres. However they do not deal with any other environmental aspects relating to paper production.

To qualify for Ecolabel, products have to comply with a tough set of criteria. These environmental criteria, set by a panel of experts from a number of stakeholders, including consumer organisations and industry, take the whole product life cycle into account – from the extraction of the raw materials, to production, packaging and transport, right through to your use and then your recycling bin.



This life cycle approach guarantees that the products' main environmental impacts are reduced in comparison to similar products on the market.

Fitness-for-use criteria also guarantee good product performance. The criteria for awarding the ecolabel for copying and graphic paper are published in Commission Decision 2011/332/EU, for newsprint paper they are published in Commission Decision 2012/448/EU, for printed paper in Commission decision 2012/481/EU amended by 2014/345/EU, for tissue paper in Commission decision 2009/568/EC prolonged by Commission decision 2013/295/EC and the latest criteria for converted paper covering envelops, paper carrier bags including packaging and stationery paper products in Commission Decision 2014/256/EU. . The criteria encompass:

1. emissions to water and air
2. energy use
3. fibre, sustainable forest management
4. hazardous chemical substances
5. waste management
6. fitness for use
7. information on packaging

VI. Current body of rules in the partners countries

VI.1 GERMANY

Waste management in Germany is centered on producer product responsibility. This approach reorients the focus of product production to the design phase, where many negative environmental impact resulting from product production and usage maybe mitigated or even prevented before the occur. Emphasis on preventing waste before it occurs is determined by the Act for Promoting Closed Substance Cycle Waste Management and Ensuring Environmentally Compatible Waste Disposal as well as the Federal Immission Control Act.

This closed cycle material management to redirect waste into sustainable resource-efficient material flow is coupled by strict wastes separation, through pretreatment, recycling and the recovery of energy to increase use of substances and materials bound in wastes. The goal is for landfilling to become obsolete.

At national level the German government supports sustainable waste management concepts to secure raw materials or energy from wastes. German waste management has the highest waste recovery quotas worldwide, and thus already contributes significantly to sustainable management and climate protection.

VI. 1a Waste (general)

Germany's first uniform national waste disposal act, the Abfallbeseitigungsgesetz (AbfG), was adopted in 1972. The Waste Management Act (KrWG), which is today Germany's main waste disposal statute (and the successor to the KrW-/AbfG act), incorporates the main structural elements of the Kreislaufwirtschafts- und Abfallgesetz (KrW-/AbfG).

Germany's Waste Management Act (KrWG) entered into force on 1 June 2012. The Waste Management Act (KrWG) adopts and expands the definition of waste in the Waste Framework Directive (Article 3(1)), whereby the restrictive wording "moveable property which the holder discards or intends or is required to discard is replaced by "all substances or objects." However, by virtue of having excluded elements such as "non-excavated soils and constructions," the law still applies solely to moveable property.

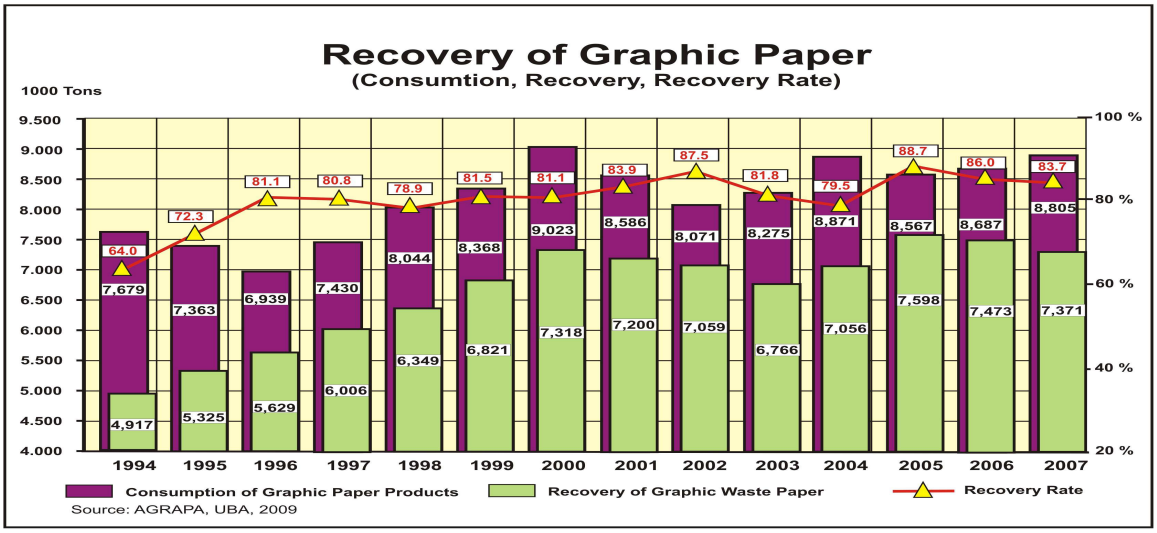
The law contains a new provision concerning the distinction between waste on one hand, and by-products that do not fall within the scope of the law on the other (Article 4). A by-product is a substance that is produced in connection with the manufacture of another substance or product, and is thus not the main focus of the manufacturing process.

Waste paper is a valuable resource. According to an ecological assessment carried out by the Federal Environment Ministry (BMU) and the Federal Environment Agency (UBA), waste paper products (recycled paper, cardboard) cause significantly less ecological damage than paper products made from fresh fibre.

Plants listed in the Regulation on plants requiring a permit (4th BImSchG) must obtain immission control approval before they can be built and operated (§§ 4, 6 BImSchG). These include facilities for pulp, paper and cardboard production.

In 1994, the graphic paper industry pledged to the BMU to gradually increase the recovery of graphic waste paper to 60 % by 2000 (voluntary commitment). The actual development of the recovery quota has clearly surpassed the targets of the voluntary commitment.

The statistic for paper consumption and recovery are displayed below



With a view to this positive development, the industry updated its voluntary commitment in 2001 and guaranteed a permanent recovery quota of around 80%, This commitment is consistently met, thus confirming the great importance attached to waste paper recycling in Germany.
The recycling of paper packaging is considerably improving. In the field of sales packaging the minimum quotas laid down in the ordinance were exceeded.

VI. 1b Packaging and waste packaging

Germany introduced a order on packaging in 1991 to tackle their increasing volumes of packaging. This ordinance supported principles of closed cycle management and extended product responsibility, i.e. the responsibility of manufacturers and distributors ranges through the whole product process; from production to disposal.
Manufacturers and distributors manage their obligations through participation in producer responsibility organisations and their own take back schemes. The German Ordinance gave impetus to the adoption of the European Directive 94/62/EC on Packaging and Packaging Waste of 20 December 1994 that is legally binding for all EU member states.
The ordinance has undergone several adaptations since the original ordinance was approved. These adaptations were made to improve the system and determine new, more ambitious targets.
According to the ordinance 60 % by weight for paper and cardboard must be obtained for recycling
A seventh draft amendment to this ordinance is currently in public discussion. The change plans to abolish the possibility for producers and distributers to achieve packaging targets through their own take back systems as it is considered to be a cover for "free riders" not fulfilling their obligations to the extent which is required.
The statistics concerning packaging paper consumption and recovery are showed below.

Packaging material	1991	1997	2007	2008	2009	2010	2011
Paper, cardboard and carton							
Paper, cardboard consumption	5.598,2	5.238,1	6.928,9	6.725,9	6.431,5	6.998,2	7.155,0
Volume recovered	3.121,0	4.640,8	6.019,4	6.131,4	6.078,3	6.479,6	7.114,8
Recovery quota in %	*55,8*	*88,6*	*86,9*	*91,2*	*94,5*	*92,6*	*99,4*
Carton liquids packaging consumption	193,0	209,7	219,5	213,6	202,6	198,0	191,9
Volume recovered	0,0	129,2	146,5	144,9	144,1	143,5	188,7
Recovery quota in %	*0,0*	*61,6*	*66,7*	*67,8*	*71,1*	*72,5*	*98,3*
Total paper, cardboard, carton liquids packackaging consumption	5.791,2	5.447,8	7.148,4	6.939,5	6.634,1	7.196,2	7.346,9
Volume recovered	3.121,0	4.770,0	6.165,9	6.276,3	6.222,4	6.623,1	7.303,5
Recovery quota in %	*53,9*	*87,6*	*86,3*	*90,4*	*93,8*	*92,0*	*99,4*

VI. 1c Waste collecting and sorting

The German waste management industry consists of various groups of main stakeholders: About 1000 municipal and private waste management companies (from One-man-firms to large concerns) fulfil the tasks of waste collection, recovery and disposal, with municipal companies accounting for a share of 35% in and private companies for a share of 65% in domestic waste handling
The distribution of competences between public and private waste management firms is generally regulated by the Closed Loop Waste Management Act. The act distinguishes wastes by their further use: „Waste for Disposal" vs. „Waste for Recovery", as well as by their source: waste coming from private households vs. commercial/industrial waste.
Waste for disposal from all sources and waste for recovery from private households can only be handled by public waste management firms, whereas commercial/industrial waste for recovery can as well be recycled by private companies. Exceptions from the obligation of having waste from private households and waste for disposal handed exist for a range of cases, e.g. direct disposal by waste producer, transfer of obligation for disposal to third parties, not-for-profit waste collection. A special ordinance exists for municipal waste and some building waste and rubble originating from companies. (Gewerbeabfallverordnung - GewAbfV). The aim of this ordinance is to ensure separate waste material collection, especially of waste streams similar to waste streams occurring in private households.

Recycling has increased from 48 % of MSW generated in 2001 to 62 % in 2010. The EU target for 50 % recycling by 2020 has therefore already been met.

Landfill

Germany was among the first European countries to introduce policies to limit landfilling in the 1990s. Measures included schemes for collecting packaging waste, biowaste and waste paper separately. The result of this was that by 2001 Germany already recycled about 48 % of municipal waste, whereas approximately 25 % was landfilled and 22 % was incinerated.

In 2010, the level of recycling had increased to 62 %, landfilling was almost 0 % and incineration had increased to 37 %.

Significant progress was made with the ban on landfilling of untreated household wastes or general waste from industry as of 1 June 2005.

Landfill tax

Twenty European countries are using a landfill tax but this does not include Germany. Germany has a very high level of recycling of MSW and it is interesting that Germany has achieved this without using a landfill tax. The requirement of pre-treatment of MSW before it can be landfilled combined with other management activities such as producer responsibility have been strong drivers in diverting MSW away from landfills and towards recycling.

National criteria end-of-waste

German waste legislation has a special ordinance on the Recovery of Bio-Waste on Land used for Agricultural, Silvicultural and Horticultural Purposes, which includes waste paper from various waste stream sources.

Apart from the waste mentioned other organic sub-stances occur in industry, commerce, trade or agri-culture which are used by recovery plants. These include for example leftover food from restaurants and large kitchens (e.g. canteens, hospitals and refectories), waste from the grocery trade, and production residues from food manufactures. Common to all of these is that they do not have to be collected by public-sector waste entities.

The 2016 target for biodegradable municipal waste sent to landfill was met in 2006.

VI. 1d Green Public Procurement & Environmental labels and Ecolabel

In Germany the federal government, federal states and municipalities have enormous market power, with annual spending on procurement of products and services to a total value of approximately 260 billion Euro, which through demand can create important stimuli for increased supply and stronger market penetration of energy-efficient products and services as well as for additional market driven technological innovations.

Procurement procedures are administered according to the:
• fourth chapter of the competition law against distortion of competition (Gesetz gegen Wettbewerbsbeschränkungen, GWB),
• public procurement regulation (Vergabeverordnung VgV),
• regulations on contract awards (Vertragsordnungen VOL/A, VOF and VOB/A), and
• law on budgetary funds.

In addition to legislation Germany has strong political drivers, national guidelines and programmes for GPP; public information resources via websites and ecolabels; use of innovative tools like life cycle thinking and green contract variants.

In Germany the study "Ökobilanzen für graphische Papiere" carried out by the Umweltbundesamt (Federal Environment Agency) demonstrated the lower environmental impact of recycled paper. As a result, the Ministry for the Environment recommends the use of 100% recycled paper. A survey carried out in 2002 by Forsa33 shows that 90% of the regional and central public administrations which participated in the survey use recycled paper, and 24% use exclusively recycled paper. Recommendations for procurement of recycled paper are given on the national website www.beschaffung-info.de and are based on the criteria of the Blue Angel.
Since 1977, the "Blue Angel" (Blauer Engel), a national environmental label, has been used in Germany to call consumers' attention to products and services that are optimised in their impact on the environment.

It is not a seal of approval for the whole product but it points out special features. Only products being more environmentally friendly, more practical to use or more health protecting than comparable goods and services are labelled with the "Blue Angel".
There is a clearly defined procedure regulating the environmental criteria which have to be fulfilled before the label is issued.
Parts of the competitive tendering procedure are the:
- Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
- Federal Environmental Agency
- RAL Deutsches Institut für Gütesicherung und Kennzeichnung e.V.
- Jury Umweltzeichen

Concerning electrical appliances, e.g. flat screens for personal computers, the "Blue Angel" for the selected ones says "saving the environment, because energy-saving and recycling-friendly". Comparing to other labels regarding energy efficiency the "Blue Angel" also includes other aspects of environment issues. Thus it is not only one-dimensional.
Altogether, about 11.500 products and services from 1.050 different companies in 90 different product groups concerning all areas of life are entiteled to carry the "Blue Angel".

VI.2 HUNGARY

After joining the EU, Hungary redrafted nearly all of its environmental protection legislation. The Ministry of Rural Development, more precisely the State Secretariat for Environment Affairs has been responsible for environment protection since July 2010.
The country's performance in terms of MSW recycling has been improving dramatically over the last decade from close-to-zero (2 % in 2001) to 21 % in 2010, while at the same time MSW generation has decreased by 13 % and decoupled from economic growth over 2001-2010. If the increased rate for recycling of the last 5 years can be maintained, then the recycling rate will reach 47 % in 2020 which is slightly under the 50 % target set in the EU legislation for 2020.
The Hungarian waste strategy has focused on building capacity and setting up schemes for separate collection, mainly for packaging waste since 2001.

VI. 2a Waste (general)

In Hungary, Act XLIII. of 2000 on waste management determines the legal regulatory framework of waste management. Regulations specify the technical requirements of the waste management activities, the economic incentives and sanctions to be applied, the responsibilities of producers and manipulators, the licensing and supervision tasks of the authorities etc.
The Waste Management Act lays down obligations for records to be kept and data to be provided by all producers, owners and managers of waste that come under its scope. The methods, content and deadlines for fulfilling the obligations are regulated in more detail by the Decree on Record-Keeping and Data Provision Obligations Relating to Waste.
The „polluter pays" principle and the principle of „producer responsibility" are basic principles of the Hungarian waste management legislations and waste management system as well.

Due to the „polluter pays" principle, the producer or holder of waste or the manufacturer of the product that became waste shall pay the waste treatment costs or dispose of the waste; the polluter shall be responsible for the abatement of environmental pollution caused by the waste, for the restoration of the state of the environment and the reimbursement of damages including costs of restoration.

On the basis of the principle of manufacturer's responsibility, it shall be the responsibility of the manufacturer of the product to select product and technology properties favorable from the point of view of waste management, including the selection of resources, the resistance of the product to external effects, the life cycle and possible recovery of the product, and the planning of recovery or disposal of waste originating from the production and use of the product and from the product itself, as well as contributing to the costs of the treatment.

Facilities in Hungary that have an impact on the environment can only operate if they hold an integrated environmental permit, as per the EU directive on integrated pollution prevention and control, which was transposed to legislation in Hungary via Governmental Decree 193/2001.

VI. 2b Packaging and waste packaging

According to Government Decree 94/2002 (V.5.) on the Detailed Rules of Packaging and Packaging Waste, manufacturers that produce a certain amount of packaging material are obliged to take back their packaging waste.

As to the recovery obligation, according to section 13(1) of the Waste Management Act, a producer or holder of waste must collect the waste produced in the course of its activity or which was obtained in any other way, and ensure the recovery or disposal of such waste. Recovery can be made even by the producer/holder itself or by an operator authorised and licensed for the recovery of waste.

A key measure to divert municipal waste from landfills and to meet the targets of the Packaging Waste Directive was the introduction of separate waste collection systems throughout the country.
A general campaign was launched in 2001 to gradually extend the network of 'free of charge' separate waste collection systems in public places. The purpose of the instrument is to dramatically increase the rate of recycling by making it easier and accessible for the population to recycle waste materials. The implementation of separate collection under the umbrella of extended producer responsibility schemes (i.e. Green Dot for packaging waste) resulted in the increased separate collection of PET plastics, paper, glass and aluminum waste. There are approx. 5 000 public separate collection facilities collecting a total amount of 485 000 tonnes. Approximately 57 % of the population had access to these facilities in 2010 and an additional 5-6 % had separate collection at their households.
Act LXXXV of 2011 on the Environmental Product Charge (hereinafter: Ktdt.) entered into force on 1 January 2012 and aims to collect necessary financial sources to prevent and/or repair environmental damages as well as promotes a significant improvement of waste recovery and reuse rate. The product charge must be paid for means of packaging supplies and advertisement paper. Obligation to pay product charge arises upon putting product, subject to product charge, in market circulation or if it is used by the holder. The charge is used to finance the National Waste Management Agency (NWMA) NWMA was established on 01.09.2011 according to the Product Fee Law and as a solely coordinator it manages, organizes and controls the public and industrial selective waste collection and prepares the National Collection and Utilization Plan.

VI. 2c Waste collecting and sorting

The main reason to establish NWMA was basically to operate the Hungarian selective waste collection, treatment and utilization in a transparent way which is based on uniform criteria. NWMA's main task and objective is to establish an organised selective waste collection system in Hungary for the public and private sector with the help of a predictable, persistent and efficient collection, utilization and processing technique. This is based on the fact, that the NWMA receives state support for this year (16.5 billion Ft) for the promotion of selective waste management. The registration and the administration of the companies that are obliged to pay product fee are regulated by the National Tax and Customs Administration.
From 2012 NWMA has the executive right to coordinate and control the selective waste management in Hungary.
The selective collection system of municipal waste should be accessible for 80 % of the population by 2014.

Next to the further development of separate collection, Hungary would like to introduce door-to-door collection and from 2014 a deposit refund system. By 2015 separate collection shall be set up for at least the following: paper, metal, plastic and glass. By 2020, the preparing for re-use and the recycling of waste materials such as at least paper, metal, plastic and glass from households and possibly from other origins as far as these waste streams are similar to waste from households, shall be increased to a minimum of overall 50 % by weight.

Landfill
For decades, the dominant treatment of municipal waste in Hungary was landfilling. The MSW management policies in the late-1990s and after 2000 are due to the efforts made mainly in order to take up EU regulations and objectives in waste management, amongst others:

A ban on landfilling of untreated waste was implemented in 2002. The purpose of this key direct legal measure is to achieve a proper ratio and composition of the waste landfilled, to be in compliance with the Landfill Directive and divert waste streams from landfills to incineration and recovery. In all types of landfill, it has been banned since 2003 to dispose of hazardous waste streams including waste tyres, shredded rubber and partially organic wastes (in line with the interim targets for BMW), which has also resulted in the development of MBT and composting capacities.

Landfill tax

The government has decided to implement a landfill tax from 2013. The tax per tonne of MSW landfilled will be EUR 10.5 from 2013 and will reach its intended level of EUR 42 from 2016.

The only municipal waste incinerator in the country was built in the late-1970s in Budapest. Modernisation of the facility was carried out between 2003 and 2005 in view of legal requirements and the technical standards set by the EU Waste Incineration Directive. During the period of its modernization (between December 2002 and December 2005) most of the municipal waste generated in Budapest was taken to landfills. Since then, this single incinerator with energy recovery has been operating with an increased capacity of 420,000 tonnes per year. This is around 52 % of the municipal waste generated in Budapest.

Biodegradable (non hazardous) waste
A National Biowaste Programme (2005-2008) to promote the diversion of BMW from landfills was launched in 2005. The order of priority is to reduce BMW by recycling (paper), composting, biogas generation, MBT and thermal utilization (KvVM, 2005). The programme was aimed at gradually extending the system to include garden waste, green waste from public parks, organic kitchen waste and paper by 2008.
Hungary has an end -of-waste criteria for compost and digestate which municipal waste collectros and operators manufacturing compost and biogas with digestate must comply with. Paper is included in this waste fraction as a compostable constituent of household waste, spoiled packaged food products

VI. 2d Green Public Procurement & Environmental labels and Ecolabel

One of the fundamental goals of the currently effective Public Procurement Act was to articulate environmental aspects more strongly. The executive decree on green public procurement came into force on the 1.st of July 2013.

GPP is compulsory for government institutions and those obliged to centralised procurement for product groups:

- stationary,
- IT,
- furniture,
- vehicles,
- transportation fuels,
- cleaning devices,
- communication equipment,
- transportation/shipping services,
- catering services,
- municipal waste and
- waste water services

The Hungarian National Ecolabel ("Környezetbarát Termék") is the official environmental label in Hungary and it was founded in 1994 by the Ministry based on the EU Ecolabelling scheme. It is an ISO 14024, Type 1 Ecolabelling system.

The application process is public, voluntary and continuous for national and foreign manufacturers, suppliers and distributors. Except of medicines, food and beverage products, any product, packaging or service may apply.

Applications must be submitted to the Hungarian Ecolabelling Organisation. The right of use of the trademark can be acquired for a period of at least 1 and up to 5 years. After expiry of the period of the contract, it may be extended by a simplified procedure.

If there are developed criteria in the product group, the applicant must provide proof of appropriate documentation regarding that the product meets the criteria; If there are no criteria developed, the applicant may propose to develop a set of criteria; and the applicant can apply after the development of the criteria.

During the application process, the Hungarian Ecolabelling Organisation provides complete assessment of the application. If the application is successful, the Company verifies that the product complies with the EU Ecolabel criteria check license agreement to use the mark in time for the product meets the requirements, in respect of products to which it has awarded the EU Ecolabel.

The companies can obtain the right to use the Hungarian National Ecolabel on their product by a licensing process. The application must be submitted to the Hungarian Ecolabelling Organisation.

There are currently 27 product groups within the Hungarian Ecolabel. Companies can apply for the within any of these product areas.

VI.3 ITALY

Issues relevant to environmental protection such as environmental impact assessments, integrated permits, liability, air and water protection as well as waste management are determined by Legislative Decree 152/2006. The decree replaced Legislative Decree 22/97, which initially defined the roles of waste management actors in 1997. In Italy the Regions are the Public authorities responsible to develop the general criteria under which the separate collection of waste shall be organized. Concrete and more detailed practical measures for waste collection are defined at Municipality level with specific regulations to set the actual organization of the waste collection system, from economic activities and municipal households.

Italy seems to be on the right path to reach the EU recycling target of 50 % for MSW by 2020 if the progress in the past can be maintained in the next decade but it is important to strengthen separate collection and increase the recycling rates at a continued pace achieved characteristic for the last ten years.

VI. 3a Waste (general)

The Waste Framework Directive (Directive 2008/98/EC) has been transposed through the amended National Environmental Act (d.lgs. 152/06, as amended by d.lgs. 205/10). The last amendment has incorporated a new Waste Control Traceability System -SISTRI. In line with the common requirements for all EU member states regarding waste, waste transporters must be registered, recovery and disposal activities must operate within permit conditions.
As in other member states paper and board production mills and larger waste recovery and disposal facilities fall under integral environmental permitting requirements. The legislative act transposing the EU directive on industrial emissions (2010/75/EU - IED) came into force on 11 April 2014.

VI. 3b Packaging and waste packaging

The responsibility for the management of packaging waste in Italy is transferred by industry to CONAI, the National Packaging Consortium. For the recovery operations of the different materials, CONAI co-ordinates the activities of six Material Consortia.
The general principles on which CONAI operates are the "polluter pays principle" and "shared responsibility". The CONAI system contributes financially for proper (i.e. efficient) packaging waste management since the collection fee, which is paid by CONAI to the municipalities, is based on the quality of collected materials. CONAI itself is funded through the "CONAI Environmental Contribution"

(CAC in Italian) applied to the packaging sold by Producers to Users. Of the six Material Consortia, one, Comieco, is devoted to paper. Comieco's members are mainly: paper manufacturers, importers of paper and board packaging, recycling companies. The Consortium manages voluntarily every stage of the process that recovers and recycles paper and board collected as a whole and not only packaging waste. In order to manage the collection and the recycling, Comieco signs agreements with the local authorities and collectors.

The general principles on which CONAI operates are the "polluter pays principle" and "shared responsibility", but companies cannot be totally and unconditionally charged with costs and, in the specific case of packaging waste, the local authority must organise the selective collection "efficiently and economically", and private citizens should follow the directions of local authority regarding the proper way of sorting the materials prior to their collection.

Two important points are established: a) municipal waste "management" of private citizens is the exclusive task of the local authority; b) the CONAI system contributes economically to the expenses for proper (i.e. efficient and economic) waste collection and management; it does not pay excess costs linked to poor quality collection, inefficient sorting, over-costly transport, etc. The collection fee which is paid by CONAI to the municipalities is in fact based on the quality of collected materials: the lower the quality is, the lower the collection fee will also be.

CONAI is funded through the "CONAI Environmental Contribution" (CAC in Italian) applied to the packaging sold by Producers to Users.
CONAI will then transfer such amount to the competent Material Consortium (by the collection fee), after deducting a certain percentage for its own administration. The value of the contribution for each material is defined every year by the CONAI Board of Directors7.

Value chain consortia have been established at national level for packaging waste recovery materials in order to support the recovery collection system thus helping to achieve the EU targets. The consortia include material producers, recovered material users and collectors. The consortia are directly financed by the value chain with the objective to rationalize the entire collection system.

There is an agreement that defines obligations and rights of the partners in the value chain as well as an environmental financial contribution which is a sort of tax that each packaging producer has to pay as a function of the type and the amount of packaging placed in the market. The municipalities are not obliged to stipulate contracts with the consortia, however, commonly the share of municipality that stipulate contracts through the consortia is quite high, in the case of paper,

The Italian consortium for the recovery of cellulose based packaging (Comieco) covers approximately 72% of the municipalities. The material for pulping is sent to specialized plants, where the preliminary elimination of all non-cellulose material is carried out and large waste paper bales are produced. These are used by paper factories to produce a paste that will be used in the production of new paper and cardboard. These materials can be recycled up to 5-6 times. In order to be re-used, the waste paper needs to go through a series of processes, including: pulping, selection in water solution, centrifugation, sieving, de-inking and whitening. After this, the pulp can be put into the production cycle, sometimes together with natural primary raw materials.

There are some regional agreements related to waste management for liquid packaging board containers. Currently there are at least two paper mills in Italy using pre and post consumer Liquid packaging board containers. One is located in Veneto within the CE region and the other one in Tuscany just outside the CE region. The first one produces packaging products (e.g. paper sacks) and the other one tissue paper.

This material is collected according to four different options:

- Collection with other paper grades; the material is sent to paper mills without any sorting
- Collection with other paper grades and sorted in recovered paper platform before sending it to paper mills.
- Selected collection and sent directly to specialised paper mills
- Collection with organic waste (new experimental route) in case there are no other options. The cellulosic fraction of multilayer paper based material is recovered in composting plants.

In 2012 the collection of liquid packaging board was carried out in more than 50% of the municipalities at national level. Separate collection has been improved mainly due to the implementation of two new industrial plants dedicated to the sorting of paperboard packaging, one of them in northern Italy near Padua (Veneto-CE region) and the other in Southern Italy (Salerno).

In Tuscany, region just outside of the CE area, Liquid packaging board containers are collected within a multi-material collection system along with plastic and aluminium, then separated in a specific plant in the region and sent to a specialised paper mill located in Lucca. The described system allows the recovery of high quality cellulose fibres in a close regional loop system and may be considered a good waste management practise for handling such material avoiding incineration.

VI. 3c Waste collecting and sorting

As the general criteria are concerned, there are two potential waste management models that each region may choose from:
the service is given by each municipality for its territory, eventually associated to others especially if they are small municipalities
the Region can define the "optimal management areas" (ATOs) consisting of certain number of municipalities.
In the case of Lombardy, which is the largest Italian region in terms of population, the first option has been selected.

Waste collection management is entrusted to companies in accordance with the EC rules on competition matters OR to an in-house company OR with public tenders to private companies/public shareholding companies. Therefore the waste collection management varies in the different areas of the country. Nevertheless, the different waste collection systems can be grouped into two broad categories:

- Paper collection where paper based packaging and graphic paper is collected together with several different systems (e.g. Pick up Household collection, bring back system to ecological sites, public containers)
- Separate paper collection, is active only for packaging paper and more common for commercial activities, where specific types of paper is collected separately (e.g. corrugated board in supermarkets and large retailers, liquid packaging board containers in bars).

Landfill

Italy has traditionally landfilled most of its MSW, even if the landfill rates have constantly decreased between 2001 and 2010 (Eurostat, 2012), a reduction from 67 % to 48 % related to MSW generated (and from 19.7 to 15.4 million tonnes in absolute terms). However, also in this regard, there are substantial differences among regions. In 2010, e.g., Lombardy landfilled 8 % of its generated municipal waste and separate collection represented about 48.5 % of the total produced amount, while Sicily landfilled 93 % of its generated municipal waste (ISPRA, 2012). In general, it can be underlined that regions that are able to couple high separate collection rates with an adequate capacity for MSW processing under different waste treatment options and a market for recycled materials usually show lower landfill levels.

The level of separate collection is increasing in all the Italian regions, but Italy as a whole, with 35 % of MSW separate collection in 2010, equal to 11.4 million tonnes, is still far from achieving the national separate collection targets, introduced by Legislative Decree 152/2006 (the 2008 target was 45 %).

According to the EU Landfill Directive (1999/31/EC), Member States shall reduce the amount of biodegradable municipal waste (BMW) landfilled to 75 % of the total amount of BMW generated in 1995 by 2006; to 50 % by 2009; and to 35 % by 2016.

Although Italy, which landfilled 82 % of its BMW in 1995, could have got a 4-year derogation period from the above-mentioned targets, it decided not to request derogation. Moreover, instead of transposing the percentage-based targets set out in the Landfill Directive, Italy adopted targets based on the quantity (kilograms) of BMW produced per capita, which shall be reached at ATO level (Optimal Management Areas) or provincial level (if the ATO is not yet delimited). That decision was based on two core reasons: the lack of reliable data on the quantity of biodegradable municipal waste landfilled in 1995 and the need to implement improved monitoring at the local level (EEA, 2009).

Targets have been defined for 2008, 2011 and 2018, since Italy transposed the Landfill Directive into national law in January 2003 (D.lgs 3372003), i.e. 18 months after the deadline. As such the targets follow the intervals of the Directive with a delay of two years.

Landfill tax

In Italy the landfill tax was introduced in 1996, based on Law 549/1995. The Law, which defines the upper and the lower level of the tax, is applied at a regional level. The tax is directly paid to the regions by landfill operators.

The heterogeneity in the tax levels applied by regions is quite high, ranging, as an average between 1998 and 2008, from EUR 5.2 per tonne in Campania to EUR 25.8 per tonne in Piemonte (ETC/SCP, 2012).

The average landfill tax for all the regions increased from EUR 14.24 per tonne in 2001 to EUR 18.84 per tonne in 2012 (Figures 2.5b and 2.6b). The number of regions applying the higher tax level (between EUR 20-30 per tonne) from 2008 to 2012 passed from 4 to 10, while, in the same period, the number of regions applying the lower tax level (between EUR 0-10 per tonne) decreased from 2 to 0 (Figures 2.5a and 2.6a). However, the actual average level of the tax is among the lowest compared with western European countries

VI. 3d Green Public Procurement & Environmental labels and Ecolabel

Green Public Procurement in Italy is regulated by the Ministerial Decree of 8 May 2003, n ° 203, establishing that the regions adopt rules for Public authorities and companies with a majority public capital, including management services, which ensure that , products and goods made from recycled material, covering at least 30% of annual needs, establishing also the minimum environmental requirements (CAM).

In 2006 the decree was converted in an official law (Legge n. 296/2006). In 2008 (D.Lgs. 135/2008) the National Action Plan for sustainable purchasing in the public administration was approved (target 30% within 2009 of green purchasing following the minimum environmental requirements by all Public Administrations including the municipalities with more than 15.000 inhabitants,). The minimum environmental requirements valorize ecological labels such as Ecolabel and EMAS. In Lombardia region (l.r. 26/2003) the minimum requirement for the purchase of recycled material has been raised to 35%.

In GPP the purchase of individual products in quantities greater than thirty percent in a category (in the list of the repertoire of recycling), does not compensate for the lack of buying in other categories. In private companies, GPP is currently not mandatory, however several of them are aware of it. In 2008 Lombardia region and the regional Chamber of commerce system started promoting voluntary agreements between public administration and industrial associations to facilitate the adoption of the same criteria used by the public administration in private companies. In Piemonte region, the Province of Turin in cooperation with the regional environmental agengy (ARPA) has developed a voluntary agreement (Project APE, guidelines version 2011) signed by approximately 40 public entities in order to promote minimum environmental criteria for green public procurement. Under this agreement, besides the purchasing of a minimum amount of products made of recycled fibres some of the Ecolabel criteria have also been adopted including the recyclability criteria for printed products. In 2013 the GPP national plan has started being revised (D.M. 10 aprile 2013 pubblicato in Gazzetta Ufficiale n. 102 del 3 maggio 2013. - See more at: http://www.minambiente.it/pagina/gpp-acquisti-verdi#sthash.9k02qi6T.dpuf). A working group lead by the Minister of Environment is currently revising the minimum environmental criteria (CAM) to be adopted by public administrations.

Ecolabel

In Italy the Ecolabel certification is well established and it is managed by a specific ISPRA office-Istituto Superiore per la Protezione e la Ricerca Ambientale (Settore Ecolabel)- that release the official certification. At the end of 2013 in Europe 2080 ecolabel licences were released by specific offices. Italy with 314 licenses was the third country after France (497) and Germany (494). The paper sector is one of the most active in the ecolabel certification , 33 licenses out of 314 are from the paper sector. In terms of certified products the paper products represent the second most important group with a total of 1557 certified products of which, 1545 tissue products, 9 graphic products and 3 printed products. A significant increase of the number of certified products was observed in the last years, starting from 2008. The ecolabels for printed products (The COMMISSION DECISION of 16 August 2012) and converted paper products (8 May 2014) are the most recent and peculiar because the recyclability criteria have been included. It is notable that 52.1% of the Ecolabel licenses in Italy are geographically located in the Northern part of the Country included in the Central Europe region.

VI.4 POLAND

The framework for environmental protection is determined in the Environmental Law (Dz.U.2001.62.627), while environmental transgressions are prosecuted through criminal law determined in the Polish Penal Code (Dz.U.1997.88)

Poland had been preparing itself to fulfil EU waste requirements for several years before it entered the EU in 2004. The first Polish law concerning waste management was enacted in June 1997, and came into force on 1 January 1998. Another important act about keeping cleanliness and order in municipalities was passed in September 1996 and came into force on 1 January 1997 (Dz.U.1996.132.622).

VI. 4a Waste (general)

On 1 October 2001, a new Act from April 2001 (Dz.U.2001.62.6.628) came into force which introduced the waste hierarchy, the proximity principle and the principle of extended producer responsibility as its basis, along with new requirements for waste generators and actors involved in waste management activities (Tojo, N., 2008). The Act was upgraded in 2013 to comply with new requirements stemming from the waste framework directive (Dz.U.2013.21).

Permit requirements for larger paper mills performing pulp and paper production and recycling are determine by the decree on enterprises with high environmental impact potential. National waste management plans provide insight into the state of play for various waste streams, prognosis of future trend with policy measures and actions to achieve future requirements and goals. In 2002, the first national waste management plan was approved for the years 2002-2006. The second plan which covered 2007-2010 was approved in 2006 (Poland, 2006). The latest National Waste Management Plan 2014, covering the years 2011-2014 with outlook for the years 2015-2022 (KPGO 2014) was approved in 2010.

EEA Report No.2/2013 on the management of municipal solid waste - a review of achievements in 32 European countries2 maintains that according to present trends an extraordinary effort will be required to meet the EU requirement on 50 % MSW recycling in 20202.

VI. 4b Packaging and waste packaging

The latest National Waste Management Plan 2014 forecasts the following generation of paper and cardboard packaging between 2011 and 2022:

Material	Year					
	2011	2014	2015	2018	2019	2022
Paper and cardboard	2,010.0	2,228.0	2,305.0	2,557.0	2,647.0	2,933.0

The plan determines that as far as the management of packaging waste is concerned the recovery and recycling levels achieved may be attributed to packaging collected from business activities including commerce. Due to this the rates of packaging materials recycled achieve targets set in the decree concerning yearly levels of packaging waste recycling and recovery (Dz.U.2007.109.752) Not enough packaging waste is collected separately in households through municipal waste management.

The Act on packaging and packaging waste (Dz.U.2001.63.638) implemented the obligation to assure packaging waste recovery and recycling levels was imposed on each entrepreneur who places packaged products on the market, and hence the principle of extended producer responsibility was put into effect. Should an entrepreneur fail to achieve the required levels, they are obliged to pay a product fee, which is calculated for the difference between the required and the achieved recovery and recycling levels. Therefore, such a fee is a form of sanction that is imposed on an entrepreneur who places a product in packaging on the market for the failure to discharge the statutory obligations. The above-mentioned obligations may be discharged by an entrepreneur on their own or by subcontracting them to a recovery organisation.

Financing of works related to collection of packaging waste and preparation thereof for recycling is assured by the fees paid by entrepreneurs to recovery organisations and product fees paid – via Offices of the Marshal – to the Fund for Environmental Protection and Water Management. This is prescribed by the act of entrepreneurs responsibilities in the field of waste management; and product and deposit fees (Dz.U.2001.63.639 2013.01.23).

The latest Act on packaging and packaging waste (Dz.U.2013,888), transposing the provisions of the Packaging Directive, sets the required annual recovery levels for packaging in general and for recycling of packaging in general and for individual types of packaging. The new act stipulates a new, publicly available register of recovery organisations, producers and processors is to be implemented in order to prevent free-riders. A local representative must be appointed by foreign operators in order to enter the register. Recovery organisations must spend at least 5% of their fee income on public

communications campaigns in order to be approved. Voluntary agreements can now be arranged regarding the management of waste from composite packaging and from packaging used for "hazardous products, including plant protection products". Regulations will be implemented to set minimum annual recovery and recycling targets for these types of packaging.

VI. 4c Waste collecting and sorting

According to the National Waste Management Plane 2014 (KPGO 2014), 1,52 million tons of paper and paperboard was generated within the municipal waste stream, representing a little under 10% of this waste stream. Paper waste to this amount was also reported as biodegradable waste. It is reported that 70 000 tons of waste paper and paperboard was collected separately from households and 75 000 tons from commerce, small business, offices and institutions within the municipal waste collection system.

In 2008, 78.1% of the Polish population was covered by the existing municipal waste collection system.

The EEA Report No.2/2013 on the management of municipal solid waste for Poland determines municipal waste management was much affected by a rather radical shift towards privatisation when Poland switched to a market-based economy (Tojo, N., 2008).

The collection and management of municipal waste was the responsibility of private property owners' i.e. individual houses as well as apartments - that selected a collection company. Waste collectors received money directly from their customers (i.e. citizens) in exchange for their service, and no money went to the municipality. The waste collection companies did not have an incentive to invest in infrastructure, as the cheapest way of managing the waste was to send it to landfill.

New legislation concerning municipal waste entered force in January 2012, giving local authorities greater control over municipal waste management. Pursuant to the adopted waste management system for a given gmina, the gmina council agrees on the rules and regulations for maintaining cleanliness and order (Dz.U.1996.132.622 and TJ Dz.U.2013.0.1399) in the area of the gmina, which will incorporate the adopted system solutions, including the obligation in respect of separate collection of predetermined fractions of municipal waste including paper and cardboard (including packaging, newspapers, magazines, etc). The municipalities have until the end of the first quarter of 2013 to establish such schemes (Poland, 2012).

In addition to permit requirements for waste recovery and disposal the provisions of the Act on waste apply to entities that generate at least 0.1 ton of hazardous waste, obliging them to obtain a decision approving their programme for hazardous waste management. Entities that generate not more than 0.1 ton of hazardous waste or less than 0.5 ton of other waste are obliged to submit to the competent authorities information about the waste they generate and the way in which they manage this waste. If an entity generates more than one ton of hazardous waste or more than 5 thousand tons of other waste, it should apply for a permit.

Landfill

The national waste management plan for 2010 reported that a majority of MSW in Poland was still landfilled. In 2010, the figure was 7.4 million tonnes compared with 10.6 million tonnes in 2001, and 9.2 million tonnes in 2004. In 2010, the generated amount of MSW was 12 million tonnes but the information available only covered the management of 10 million tonnes. There is no conclusive information on the remaining 2 million tonnes but it can be assumed that at least part of it has been illegally dumped or has been used by households for their own purposes, such as home-composting, feed for animals or fuel.

Landfill tax

In accordance with the Environmental Protection Act (Dz.U. 2001 nr 62 poz. 627), businesses are required to pay for landfilling of waste. There is a system of environmental charges in Poland, which includes charges for landfilling of waste. The charges are set out in the Regulation of the Council of Ministers of 2008 (Dz.U. 2008 nr 196 poz. 1217). Charges are determined each year and published as an announcement by the Minister of the Environment.

National criteria end-of-waste
No special national end-of-waste criteria were reported by the project partner.

VI. 4d Green Public Procurement & Environmental labels and Ecolabel

Green public procurement has been secured in polish legislation though the– *Public Procurement Act* (Dz. U. of 2007 No. 223 item 1655, of 2008 No. 171 item 1058, No. 220 item 1420, and No. 227 item 1505, and of 2009 No. 19 item 101, No. 65 item 545, No. 91 item 742, No. 157 item 1241, No. 206 item 1591, No. 219 item 1706, and No. 223 item 1778), stipulating tenders must contain a description of environmental impact within the functional requirements. The tender evaluation criteria shall be price or price and other criteria linked to the object of contract which include the use of the best available technologies with regard to the impact on environment, exploitation costs, after sale service and period of contract performance." Environmental offenders are excluded from the tendering procedure.

In addition to the EU ecolabel, Poland has introduced a national environmental label, Eko-Znak. Eko-znak can be registered at the Polish Centre for Testing and Certification ltd (PCBC). Eko-znak is awarded according to the same criteria applied in the EU Ecolabel. Applicants can obtain both labels at the same time. Eko-znak has developed national criteria for certain product groups at the request and in cooperation with producer groups, associations or other interested parties. The domestic criteria can be submitted to the European Union Ecolabelling Board (EUEB) and influence the EU ecolabel criteria.

VI.5 SLOVENIA

Waste legislation in Slovenia is anchored in the Environmental Protection Act (EPA) OJ RS, no. 41/04 (ZVO-1), 20/06 (ZVO-1A), 39/06 (ZVO-1-UPB-1), 70/08 (ZVO-1B), 108/09 (ZVO-1C), 48/12 (ZVO-1D), 57/12 (ZVO-1E), 92/13 (ZVO-1F)).
The EPA is an umbrella act which fuses the basic principals, requirements and demands linked to various EU environmental policies and directives focused on pollution prevention that have been implemented in national legislation. The act came into force in 2004 but has been adapted and changed to accommodate demands stemming from new directives or changes to existing ones on many occasions during the last ten years.

EEA Report No.2/2013 on the management of municipal solid waste - a review of achievements in 32 European countries maintains that according to present trends, Slovenia is on track to fulfil the 50 % recycling target of the EU Waste Framework Directive by 2020.

VI. 5a Waste (general)

The Environmental Protection Act stipulates the main concepts and requirements pertaining to waste from the waste directive. Actual practical requirements linked to the implementation are administered through the Decree on waste (OJ RS no. 103/2011), which lays down the framework obligations and procedures with regard to legal entities and their various roles along the waste chain.

The list of waste from European decision 2000/532/EC is supplemented to the decree as an annex. The decree incorporates and defines the new waste concepts of by-products and end-of-waste in national legislation and provides continuity with regard to waste permit and registration requirements, waste traceability and other requisitions of the waste framework directive.

With regard to permit requirements, the decree on waste is supplemented by the Decree on activities and installations causing large-scale environmental pollution (OJ no. 97/04, 71/07, 122/07 and 68/12) which is the implementing national legislation for the directive on integral pollution prevention and control, which has now been repealed with the directive on industrial emission 2012/75/EU.

A new decree on activities and installations causing large-scale environmental pollution is currently in public discussion. The decree will implement new requirements regarding underground water and soil monitoring and baseline reports. It will also incorporate new industrial activities required to operate with a valid integral environmental permit. In general smaller waste recovery and disposal activities must operate with a valid waste permit, larger waste recovery and disposal activities and paper mills which process waste paper must operate with a valid integral environmental permit. Paper mill permit conditions include requirements for waste paper recovery relevant to annual quantities and other aspects linked to additional conditions which need to be included due to the specifications of the waste framework conditions. Larger industrial activities required to obtain an integral environmental permit must adhere to emission limit values ascertained according to common EU agreement ob best available techniques. Emission limit values based on best available techniques agreed at an EU level, was practiced in Slovenia even before it became a common EU requirement with the new IED directive.

VI. 5b Packaging and waste packaging

The implementation of the packaging and waste packaging directive was one of the three environmental legislative areas where Slovenia was allowed a grace period to become compliant with the EU directive specifications. Compliance with recovery and re-use targets was postponed till the 31st of December 2007. Legislation was implemented gradually, initially according to the first Rules on management of packaging and packaging waste (OJ RS no.104/2000). This was followed by a Decree on the management of packaging and packaging waste (OJ RS no. 84/06, 106/06, 110/07; 67/11, 68/11).
Legal entities placing packaging or packaged goods on them market exceeding 15 tonnes per year must fulfil their obligations concerning extended producer responsibility by either joining a packaging scheme or they may opt to obtain a license to do this themselves. In order to be granted the license they must prove that they achieve material recovery shares, thus contributing to the national targets. In addition to the fee paid to producer responsibility these organisations must also pay a packaging and waste packaging tax. The tax is collected by Customs in Slovenia.

VI. 5c Waste collecting and sorting

Collection of household waste, including paper waste is determined in the Order on the management of separately collected fractions in the public service of urban waste management (OJ RS 21/01).
Detailed procedures for collection of household waste streams are specified by each municipality in their binding municipal ordinances. Due to this, how household waste is collected may differ from municipality to municipality. In general paper wastes are collected separately from mixed municipal waste streams. Most often waste paper packaging is collected together with newspapers, magazines and other paper waste in defined common areas and not at curb.

While larger manufacturing organisations have very efficient systems to separate different waste streams including municipal flows, with paper and prefer to transfer them to private waste companies,

smaller companies and many public entities prefer to hand over these waste streams to public waste service providers working within their municipalities.

Landfill

The Decree on the landfill of waste (OJ RS 10/14) determines the conditions for legal landfill operation. In the not so distant past landfills were a receptacle for a non-discriminatory list of wastes. Gradually the list of waste streams admissible to landfill disposal has been reduced. Biodegradable waste is one of the latest significant waste streams being rerouted from landfill. Paper discarded with mixed municipal wastes can contribute to this waste stream. No information exists what the share of paper in mixed municipal waste from households is, though it is assumed not to be significant, due to the growing improvement in waste separation in most households. The total reported recycling rate of MSW has increased from 11 % in 2002 to 30 % in 2009.

Due to contamination this paper is definitely lost to material recovery and depending on the composition of the original municipal waste stream (biodegradable, non-biodegradable) is sent to be prepared either as refuse derived fuel or to composting and bio-gas production. A new decree on waste landfills replaced the existing decree after public consultation in 2014.

Landfill tax

A landfill tax fee for disposal is administered through the Decree on environmental tax for environmental pollution caused by waste disposal (OJ RS no. 70/2010, 49/13). It is paid by industry managing industrial landfills and by households through their municipal waste service provider. It is meant to deter landfilling. A landfill tax has been administered since 2002 in Slovenia.

National criteria end-of-waste, which may be relevant to waste paper

Two national so-called end-of-waste decrees are in existence in Slovenia. Both have the potential to redirect paper waste stream fractions from material recovery in paper mills. Both options have a certain degree of potential to deal with paper waste streams, not compliant with quality demands for waste paper recycling, which would otherwise go to disposal

Combustible non hazardous waste

The first is the decree on the recycling of non-hazardous waste into solid fuel (OJ no. 57/08). This determines which combustible waste fractions can be prepared as fuel to be applied in industrial combustion plants (usually industrial boilers for heating and/or steam production). Paper included in mixed municipal waste streams can be rerouted to production of refuse derived fuels, together with other combustible materials, after the mixed waste streams have been pre-treated to separate biodegradable and non-biodegradable fractions.

Biodegradable (non hazardous) waste

The second is the decree on the treatment of biodegradable waste and the use of compost or digestate (OJ RS no. 97/13). As evident from the title of the decree it deals with biodegradable waste, which waste paper is, and the recovery of these waste to compost or digestate, with additional specifications for compost and digestate qualities.

The Decree on the incineration of waste (OJ RS no. 68/08 and 41/2009) determines the operating, conditions for waste incineration and co-incineration operations in accordance with the specifications stipulated in the waste incineration directive. It is assumed that this decree is relevant for small waste paper fractions which are mixed with other waste and contaminants and as such not suitable for material recovery.

VI. 5d Green Public Procurement & Environmental labels and Ecolabel

Green public procurement was introduced with the Decree on Green Public Procurement (OJ RS no. 102/11, 18/12 24/12, 64/12 and 2/13). Annex 3 to the decree determines the core and comprehensive criteria for the procurement of office paper and hygienic paper products.

The Decree on GPP sets minimal mandatory environmental requirements, which must be considered when awarding a public contract, and recommendations to achieve higher environmental standards.
Currently, the decree covers environmental criteria for 11 groups of products and services (electricity, food and catering services, copying and tissue paper, IT office equipment, audio and video equipment, household appliances and air-conditioning devices, construction of buildings, furniture, cleaning products and services and laundry services, road vehicles and tyres). Slovenian GPP criteria is based on the EU GPP criteria and relevant legislation taking into account the capacities of Slovenian public contracting authorities, the market and current economic situation. Updating and upgrading of current criteria and adoption of environmental criteria for new product and service groups is envisaged in the future.
Contracting authorities must consider GPP criteria during the assessment of needs, and must include them in the tender documentation when inviting potential suppliers to submit a bid. In tender documentation, contracting authorities must include the environmental aspect already when formulating the Subject Matter of a particular call, and the GPP criteria are included by setting relevant technical specifications, selection criteria, award criteria and/or contractual clauses. Life cycle costing (LCC) is currently used in vehicle procurement.
There is no national Type I ecolabel programme in Slovenia, however the EU Ecolabel, among other equivalent labels is used as a reference for product category criteria, and EMAS and ISO 14001 Standards for environmental management systems are also considered.

Ecolabels in line with the EU ecolabelling product criteria, defined in the subsequent EU decisions for certain product groups, are awarded by the Environmental Agency in Slovenia. Organisations wishing to be awarded the possibility to apply the ecolabel to their products must submit an application with documentation substantiating conformance with required environmental product characteristics to the Environmental Agency. Vipap Videm Krško has been awarded the right to use the ecolabel logo for the product group of copying and graphic papers since 2006, while Paloma Sladki Vrh has been applying the ecolabel to their hygienic paper products since 2010.

VII. What to expect in the future – the new waste legislation proposal

A proposal to amend directives 2008/98/EC on waste, 94/62/EC on packaging and packaging waste, 199/31/EC on landfill of waste, 2000/53/EC on end-of-life vehicles, 2006/66/EC on batteries and accumulators and waste batteries and accumulators, and 2012/19/EU on waste electrical and electronic equipment is currently under discussion.

As was mentioned previously in the study municipal waste the potential for reuse and recycling of materials found in municipal waste is not sufficiently exploited. Major differences are evident between member states regarding the efficiency of handling municipal waste, while six member states landfill less than 3% of their municipal waste, 18 lose to landfill over 50% and others even more than 90% of valuable materials.

The directive proposal suggests a definition for municipal waste, which has not been defined precisely in existing legislation. It is considered as household waste and waste from retail trade, small business, office buildings and institutions (such as schools, hospitals, government buildings) similar in nature and composition to household waste, collected by or on behalf of municipalities. From these sources it includes amongst other, waste not collected on behalf of municipalities but directly by producer responsibility schemes or private non-profit institutions for re-use and recycling purposes mainly by separate collection. This seems to indicate paper and paper packaging waste streams originating from

households, retail trade, small business, office buildings and institutions collected by charities and producer responsibility schemes are to be considered as municipal waste in the future.
Extended producer responsibility is defined as the producer's operational and/or financial responsibility for a product extended to the post-consumer state of a product's life cycle.
This responsibility is linked to measures, which must be taken by member states to encourage the design of products in order to reduce their environmental impact and the generation of waste in the course of the production and subsequent use of products, without distorting the internal market. Measures shall include steps to encourage the development, production and marketing of products, that are suitable for re-use, that are technically durable and that are after becoming waste suitable for re-use and recycling in order to facilitate proper implementation of the waste hierarchy. The measures shall take into account the full life cycle impacts of the products.

The directive proposal lists minimal requirements for extended producer responsibility, which are due to their importance, listed in completeness in items 1 to 7 below. With relevance to paper packaging (and packaging made from other materials) the directive proposal defines minimal requirements for extended producer responsibility, which will be developed and applied to:

1. take into account technical feasibility and economic viability and the overall environmental, human health and social impacts, respecting the need to ensure the proper functioning of the internal market;
2. ensure a clear definition of the roles and responsibilities of the actors involved in the implementation of the extended producer responsibility. including producers and importers placing goods on the market of the Union and their compliance schemes, private and public waste operators. local authorities and, where applicable, social economy actors;
3. define measurable targets in terms of prevention, preparing for re-use, re-use, recycling and/or recovery aiming at meeting at least the existing quantitative targets laid down in the relevant Union waste legislation;
4. ensure the waste holders covered by extended producer responsibility are given the necessary information about the available collection systems;
5. establishing a reporting procedure aiming at gathering data on products placed on the market and, once these products reach the end of their useful life, their collection and treatment in line with the waste hierarchy specifying material flows as appropriate;
6. ensure the financial contributions into extended producer responsibility schemes by producers or importers of products put on the Union market:
    a. cover the entire cost of waste management, including separate collection and treatment, adequate information to waste holders, data gathering and reporting,
    b. take into account the revenues from the sales of secondary raw materials originating from waste;
    c. are calculated in function of the true cost of the end-of-life management of individual products placed on the Union market which are covered by the scheme;
    d. support litter prevention and clean-up initiatives
    e. establish a recognition procedure for extended producer responsibilities schemes aiming at:
    f. ensuring the transparency of the schemes in terms of contributions paid by the producers, including the impact on sale prices and in terms of the impact on competitiveness and openness to small establishments and undertakings;
    g. defining the geographical coverage of the schemes;
    h. ensuring equal treatment for domestic producers and importers;
    i. ensuring a self-control mechanism via regular third party audits of the schemes in terms of both:
        i. sound financial management of the scheme - calculation of the entire costs per type of products; use of funds collected and
        ii. appropriate collection and treatment of waste, control over the legality of waste shipments and quality of data and reporting;
        iii. define proportionate sanctions in case of non-attainment of the targets and/or non-respect of these requirements;

iv. establish adequate monitoring and enforcement means, and organise a formal and regular dialogue between the involved actors.

The proposal enhances the priority given to material recovery in the waste hierarchy by defining "material recovery" as any recovery operation, excluding energy recovery and the reprocessing into the materials which are to be used as fuel;

With regard to by-products and end-of-waste residues, the commission has increased it's authority and shall be empowered to adopt delegated acts in accordance with Article 38 a. As paper is again included amongst the waste streams to be considered for end-of-waste status, and the authority to adopt delegated acts is referenced to the end-of-waste clause of the directive; it may be expected that paper waste may again be placed under scrutiny for a directly applicable end-of-waste regulation. The act comes into force if neither parliament or council do not object to it within two months of notification from the commission.

Waste allowed to be disposed of in landfills will be limited to less than 25% of the total amount of municipal waste generated in the previous year by 2025. With 2030 only residual waste, resulting from a recovery, including recycling operation which cannot be further recovered and as a result has to be disposed of, will be allowed to go to a non-hazardous landfill, the total amount of these waste going to landfill shall not exceed 5% of the amount of waste generated in the previous year.

By January 1st 2020 the recycling and reuse of municipal waste shall increase to at least 50% by waste and by January 1st 2030 recycling and reuse of municipal waste shall increase to at least 70% by waste.

With regard to the existing directive on packaging and packaging waste 94/62/EC, tubes and cylinders release paper of self-adhesive labels and wrapping paper shall be evaluated with reference to whether they should be illustrative examples for the definition of packaging.

By the end of 2020, a minimum of 60% by weight of all packaging waste will be prepared for re-use and recycled with the minimum target for paper and cardboard set at 85%.

By the end of 2025, a minimum of 70% by weight of all packaging waste will be prepared for re-use and recycled with the minimum target for paper and cardboard set at 90%.

By the end of 2030, a minimum of 80% by weight of all packaging waste will be prepared for re-use and recycled with the minimum target for paper and cardboard set at 90 %.

Member states shall take appropriate measures to encourage the design of packaging in order to reduce its environmental impact and the generation of waste in the course of the production and subsequent use of packaging, without distorting the internal market and do not hinder compliance of the directive by other states. Measures shall include steps to encourage the development, production and marketing of packaging, that are suitable multiple use, that is technically durable and that are after becoming waste suitable for re-use and recycling in order to facilitate proper implementation of the waste hierarchy. The measures shall take into account the full life cycle impacts of the packaging.

VIII. CONCLUSIONS

Though a common EU framework exists regarding waste as well as packaging and packaging waste applying to all member states, individual countries employ different measures to attain goals stipulated in the waste framework and the packaging and waste packaging directives.

All partner countries are striving to achieve community goals with regard to various more prevalent waste streams. Of the partner countries, only Germany has surpassed target requirements.

Other partner countries have made large improvement during recent years with regard to waste collection and recovery refining implementation to achieve targets.

Within these systems waste paper is seen as a commodity. While private waste collection companies collect waste from larger production organisations. The resulting waste paper streams are usually of high quality from these sources. Waste paper streams are usually collected by public municipal waste service providers from households and smaller private entities. The quality of these waste paper streams is not always clearly documented. It obviously depends on whether the waste paper is additionally separated before collection or if all the paper is collected together within a co-mingled waste collection scheme. A fraction of waste paper collected from households inevitably goes to landfill, incineration of biological treatment together with other household refuse. Trends show that this is linked more to the contamination of paper waste with food residues rendering them unfit for recycling and less to do with inappropriate disposal of paper with other household waste due to lack of awareness.

Environmental criteria in public procurement procedures are more or less a legislative requirement in all countries with some countries prescribing exact environmental criteria and others relying more on the dissemination of good practice, contract templates and other softer tools.

While some countries have developed national labelling criteria, all countries employ the use of the ecolabel, which currently includes four decisions relevant to environmental criteria of various paper product groups.

IX. Literature

[1]https://www.smitherspira.com/home.aspx

[2]http://ec.europa.eu/environment/gpp/pdf/toolkit/paper_GPP_background_report.pdf

[3]http://www.bmub.bund.de/fileadmin/Daten_BMU/Download_PDF/Wasser_Abfall_Boden/Abfallwirtschaft/total_packaging_1991-2011_bf.pdf

[4]http:// www.retech- germany.net/english/topics/waste_management_made_in_germany/structure/dok/660.php

[5]http://www.bmub.bund.de/fileadmin/Daten_BMU/Download_PDF/Abfallwirtschaft/bioabfv_engl_bf.pdf

[6]http://www.bmub.bund.de/fileadmin/Daten_BMU/Download_PDF/Wasser_Abfall_Boden/Abfallwirtschaft/total_packaging_1991-2011_bf.pdf

[7]http://www.unep.org/resourceefficiency/Portals/24147/SPP_Full_Report_Dec2013_v2%20NEW%20(2).pdf

[8]http://www.blauer-engel.de/

[9]http://www.buy-smart.info/media/file/1596.D2_2_BuySmart+_ProcurementStandards_Hungary.pdf

[10]http://www.kornyezetbarat-termek.hu/en/pages.php?aid=137&pID=2

[11]http://eimpack.ist.utl.pt/docs/CaseStudy_Italy_report1_Rev1_200114_clean.pdf

[12]http://www.comieco.org/about-comieco/

[13]http://www.mater.polimi.it/mater/en/wmt/recycling#secondo

[14]ttps://www.mos.gov.pl/g2/big/2013_11/2328f96819e9bda79bf26d0e00728080.doc#_Toc326912063

[15]http://cp.gig.katowice.pl/pdf/eEcolabel.pdf

[16]http://www.unep.org/resourceefficiency/Portals/24147/SPP_Full_Report_Dec2013_v2%20NEW%20(2).pdf