Producer Responsibility for Packaging Waste

Policy Paper
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Doug is a foremost expert in recycling and waste management, with a particular specialism in governance, policy and institutional aspects. Doug has received many accolades throughout his career, and this is because his knowledge is built on practical experience. He has many years experience establishing recycling schemes at the ground level. He was a member of the team that designed and implemented the original Blue Box recycling scheme, now working across North America and in other parts of the world; and has worked extensively on institutional systems in Eastern Europe and elsewhere in the world.

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List of Acronyms and Abbreviations

- EU European Union
- IFC International Finance Corporation
- ISWM Integrated Solid Waste Management
- PEPSI Private Enterprise Partnership for Southeast Europe
- PRO Packaging Recovery Organization
- PRS Producer Responsibility Scheme
- RO Recovery Organization
- EPR Extended Producer Responsibility
This Policy Paper is prepared by Wasteaware with financial support from the International Finance Corporation (IFC) ISWM program in southeast Europe, delivered through the IFC Advisory Services in ECA.

The focus of this initiative is to facilitate the implementation of integrated solid waste management (ISWM) in the countries: Albania, Bosnia-Herzegovina, Kosovo, Macedonia, Montenegro and Serbia.

The Policy Paper concentrates on the subject of producer responsibility for packaging waste.

By nature of the assignment that gave birth to this Policy Paper, emphasis is placed on the communication of those experiences from implementing packaging waste management systems in EU member states which are of particular relevance to Western Balkans countries.

The main targets are to relate some specific experiences to policy makers and to contribute to informed policy making in those countries which are targeting accession to the EU. Although the Policy Paper is also relevant to other countries considering implementation of producer responsibility systems.

A series of workshops and consultations organised and financed by IFC were held during preparation of this Policy Paper in Skopje, Pristina, Tirana, Podgorica, Sarajevo and Belgrade. We would like to thank the national authorities for helping to arrange these events and the participants for their active contributions.

The purpose of the Policy Paper is to:

- Communicate some experiences from implementation of legislation and systems for management of packaging waste and
- Identify a set of core policy actions for policy makers in Western Balkans and other countries to consider when developing their own systems.
Policy Context

Current status of packaging waste management in the Western Balkans

The countries of the Western Balkans have all chosen to harmonize their national policies and legislation with those of the EU and, in particular, to take the necessary measures to ensure that systems are set up for:

(a) The return and/or collection of used packaging and/or packaging waste from the consumer, other final user, or from the waste stream in order to channel it to the most appropriate waste management alternatives; and

(b) The reuse or recovery (including recycling) of the packaging and/or packaging waste collected.

Reflecting the prevailing legal framework in the EU, these systems shall be open to the participation of the economic operators of the sectors concerned and to the participation of the competent public authorities. They must also apply to imported products under non-discriminatory conditions, including the detailed arrangements and any tariffs imposed for access to the systems, and must be designed so as to avoid barriers to trade or distortions of competition.
The European Directive 2004/12/EC on packaging and packaging waste requires the following recycling and recovery targets to be achieved by the end of 2008:

- General recovery and recycling targets
  - 60% as a minimum by weight of packaging waste shall be recovered or incinerated at waste incineration plants with energy recovery; and
  - Between 55% as a minimum and 80% as a maximum by weight of packaging waste shall be recycled.

- The following minimum recycling targets for materials contained in packaging waste shall be attained:
  - 60% by weight for glass;
  - 60% by weight for paper and board;
  - 50% by weight for metals;
  - 22.5% by weight for plastics, counting exclusively material that is recycled back into plastics; and
  - 15% by weight for wood.

Taking into account the specific conditions in the new Member States, temporary derogations of the recycling and recovery targets were set as: until not later than 2012 for Cyprus, the Czech Republic, Estonia, Hungary, Lithuania, Slovakia and Slovenia; 2013 for Malta; 2014 for Bulgaria and Poland and 2015 for Latvia and Romania.

The quantitative recycling targets are further extended and not only limited to packaging waste in the new Waste Framework Directive. The Directive requires the achievement of following:

- By 2015 separate collection to be set up for at least the following: paper, metal, plastic and glass.
- By 2020, increase of targets to a minimum of 50% by weight for re-use and recycling of waste materials including paper, metal, plastic and glass from households and possibly from other origins as far as these waste streams are similar to waste from households.

Establishment of the extended producer responsibility (EPR) principle in the same Directive is one of the means to support the design and production of goods which take into full account and facilitate the efficient use of resources during their whole life cycle. This includes their repair, re-use, disassembly and recycling without compromising the free circulation of goods on the internal EU market.

In order to strengthen prevention, reuse, recycling and other recovery of waste, the 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 (producer of the product) has extended producer responsibility. Such measures may include an acceptance of returned products and of the waste that remains after those products have been used, as well as the subsequent management of the waste and financial responsibility for such activities.

Member States may take appropriate measures to encourage the design of products in order to reduce their environmental impacts and the generation of waste in the course of the production and subsequent use of products. Such measures may encourage, the development, production and marketing of products that are suitable for multiple use, that are technically durable and that are, after having become waste, suitable for proper and safe recovery and environmentally compatible disposal.

When applying extended producer responsibility, Member States should take into account the 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.

Member States may decide whether responsibility and costs for arranging waste management are to be borne wholly by the producer of the product or whether distributors of products are to share this responsibility.
What is producer responsibility?

Producer Responsibility (or EPR) schemes are considered as a major implementation tool for the establishment of a packaging waste collection and recycling system to guarantee the achievement of targets.

“Producer Responsibility Schemes” (PRS) in the field of packaging and packaging waste may be defined as:

- Manufacturers, distributors and importers of packaging and packed goods being responsible for the collection and recovery of their resulting packaging waste.

The establishment of PRS for packaging waste has the following main objectives:

- To guarantee achievement of the recycling and recovery targets defined in national policy/legislation.
- To incorporate waste prevention, reuse and recycling issues into product design.
- To integrate financial stream and incentives for separate collection, sorting and recycling.
- To avoid temporary interruptions in the collection processes in case of negative trends in recyclable waste prices.
- To guarantee achievement of the recycling and recovery targets specified in the Directive.
- There is currently no clear view how the achievement of the recycling and recovery targets will be technically implemented as no pilot projects have been initiated, implemented and monitored.
- Drafts of national legislation had been prepared for the transposition of Directive 2004/12/EC on the Packaging and Packaging Waste Directive.
- No final decision had yet been made about the deadlines for achieving the recycling and recovery targets specified in the Directive.
- There are no clear rules on how the municipal packaging waste collection will be financed and what the relation will be between the producer responsibility organizations and the municipalities.
- There are no separate collection systems for household packaging currently in place.

Collective producer responsibility schemes to deal with packaging waste on behalf of the industry are defined in the draft legislation.

Different requirements are set for municipal (household) packaging and for non-municipal (industrial, commercial) packaging.

Most of the countries have specified that the local authorities (municipalities) shall be responsible for organizing the collection of municipal packaging waste.

There are no clear rules on how the municipal packaging waste collection will be financed and what the relation will be between the producer responsibility organizations and the municipalities.

There are no separate collection systems for household packaging currently in place.

Definitions

The following definitions are important within the context of the application of the packaging waste management system, which is harmonized with the EU requirements.

- Packaging: all products made of any materials of any nature to be used for the containment, protection, handling, delivery and presentation of goods, from raw materials to processed goods, from the producer to the user or consumer.

- Sales packaging or primary packaging: packaging conceived so as to constitute a sales unit to the final user or consumer at the point of purchase.

- Grouped packaging or secondary packaging: packaging conceived so as to constitute at the point of purchase a grouping of a certain number of sales units whether the latter is sold as such to the final user or consumer, or whether it serves only as a means to replenish the shelves at the point of sale; it can be removed from the product without affecting its characteristics.

According to the draft regulations of Albania, Macedonia, Serbia, the following definitions are important within the context of the application of the packaging waste management system, which is harmonized with the EU requirements.

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5 These definitions are based on the EU definitions but have been simplified for the purpose of this document. The legal wording of these definitions may be found in EU Directive 2004/12/EC.
Transport packaging or tertiary packaging: packaging conceived so as to facilitate handling and transport of a number of sales units or grouped packaging in order to prevent physical handling and transport damage.

Economic operators: suppliers of packaging materials, packaging producers and converters, fillers and users, importers, traders and distributors, authorities and statutory organizations.

Additionally, the following definitions need to be introduced for the purpose of better understanding the present document.

Producer Responsibility Organization or Recovery Organization: a commercial company established for the purpose of achieving packaging waste recovery and recycling targets on behalf of the obliged economic operators.

Municipal (household) packaging waste: packaging waste generated at households and similar waste generated by industry and commerce.

Non-municipal (industrial, commercial) packaging waste: packaging waste generated at industry and commerce, which cannot be considered as municipal packaging waste.

Producer of packaging materials: is an entity, which in agreement with the regulations, produces and markets packaging material as its economic activity.

Importer: is an entity, which in agreement with the regulations, imports packaged goods for the purpose of marketing, as its economic activity.

Producer (packer, filler): is an entity, which in agreement with the regulations, packages goods or fills goods in a packaging as its economic activity.

Retailer: is an entity, which in agreement with the regulations, performs trading activity and procures packaging materials, packaging and packaged goods for the purpose of selling it to the end user.

Final supplier: is an entity that supplies packaging or packaged goods directly to the end user, regardless of whether the entity is at the same time the producer, importer, packer or retailer.

End user: is a consumer, who because of its final use or consumption of packaged goods, separates the goods or empties them and, in that way, creates packaging waste; and retailer, who because of further use of goods, separates the packaging from the goods or empties it and in that way creates transport or secondary packaging waste.
Core Policy Actions

Western Balkan countries have started the process of transposing the requirements of the Directive 2004/12/EC into their national legislations through the development and adoption of relevant Laws, decrees and regulations in the field of packaging and packaging waste.

The new developed legislation needs to be supported by additional policy and institutional actions and measures in order to establish the necessary collection, sorting and recycling infrastructure and to guarantee its implementation and enforcement. As most of the different actions and measures are interrelated, they should be planned, organised and implemented in a coordinated manner. Core Policy actions are presented below.
Core Policy Actions

Recovery and recycling targets

Objective: Define the quantitative targets for packaging waste recycling and recovery, the time schedule for their achievement and the responsibilities of different stakeholders.

Key actions at national and local levels include:

- Define the recovery and recycling targets applicable towards the different packaging materials and packaging in general and the time periods for their achievement. The targets should be realistic and technically achievable, taking into account the current levels of recycling, implementation costs, etc.

- Set up intermediate recycling and recovery targets for the period between the entering into force of new legislation and the first target year.

- Define the economic operators responsible for achieving the targets. The responsibilities of different stakeholders such as producers of packaging materials and empty packaging, producers and importers of packed goods (packers and fillers), distributors, retailers, etc should be specified. The compliance with the requirements needs to be checked easily and any overlapping of obligations and duties should be avoided.

Recovery and recycling targets in Bulgaria

The Republic of Bulgaria agreed a transitional period for the achievement of recycling and recovery targets by 2014. The producers and importers of packaged goods on the Bulgarian market are solely responsible for the achievement of recycling and recovery targets for packaging waste. The other economic operators, such as producers and importers of packaging materials or empty packaging, distribution and retailers, have no specific responsibility to take back or support the achievement of recycling and recovery targets. Annual recovery and recycling targets for 2004 – 2014 were defined in the Bulgarian Waste Management Act. During the first two years of implementation only general recovery targets were defined.

Core Action

Recovery and recycling targets for different packaging materials and packaging in general, and the time periods for their achievement, need to be realistic. Provide some flexibility to the industry in choosing an appropriate set of packaging materials to be collected and sorted.

Table 1: Example of packaging waste recovery and recycling targets in Bulgaria

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<td>53%</td>
<td>56%</td>
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<tr>
<td>RECYCLING</td>
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<td>38%</td>
<td>42%</td>
<td>45%</td>
<td>47%</td>
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<td>52%</td>
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<td>17%</td>
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<tr>
<td>Glass</td>
<td>26%</td>
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<td>Metals</td>
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<td>Wood</td>
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Core Policy Actions

**Objective:** To provide reliable data about packaging consumption and packaging waste treatment at national level.

Key actions at national and local levels include:

- The competences between institutions regarding the reporting of data related to packaging and packaging waste at national level to EU (EUROSTAT, European Environmental Agency and European Commission) should be defined, and adequate administrative capacity needs to be provided. Good coordination between the national statistical institutions, customs agencies, ministries of finance, economy/industry, and environmental protection authorities is needed.

- Simple and clear registration/reporting procedures need to be established. Reporting templates should be defined carefully, and if possible, reporting in electronic format should be incorporated from the beginning.

- Companies placing packaged goods on the market should be responsible for the calculation and documentation of packaging amounts. The documentation requirements should be based on the available accounting procedures in order to avoid unreasonable burden on the industry. The documentation should be kept for auditing by the competent authorities.

- The reporting system should be oriented mainly to large producers/importers of packaged goods, and the producer responsibility organizations, in order to guarantee that at least 90% of the packaging placed on the market is reported. Extending the reporting requirements to all companies placing packaged goods on the market will require additional administrative capacity for the processing and verification of collected data.

- The reporting of companies collecting, sorting, and recycling packaging waste should be in conformity with general reporting requirements in the waste management sector.

- Appropriate enforcement mechanisms should be established in order to guarantee that all obliged companies meet the reporting requirements.

- All reporting requirements should be communicated and explained in an appropriate way to the industry.

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**Collection and reporting of data**

It is essential to put in place appropriate information and reporting systems, including reporting templates and procedures, availability of trained staff to process the collected data, developed specialized software, etc.

Depending on how the reporting requirements are formulated and how different stakeholders are defined, the reporting obligations will cover a large number of companies. Consequently, there is a serious risk that a large number of companies will not provide data and/or for the overlapping of the reported amounts of packaging.

Lack of communication to the obliged companies and appropriate enforcement measures can cause difficulties, especially during the first years of implementation.

**Core Action**

Ensure simple and clear reporting requirements. Do not ask for data or information that is not easily available or will not be used for a specific purpose or will be difficult to process or audit.
Core Policy Actions

Defining the respective roles of Municipalities and Industry

In most countries, local authorities are responsible for municipal waste management. However, municipalities are often not responsible for collecting the commercial & industrial waste stream. In the field of packaging waste management, requirements for municipal and non-municipal packaging waste collection are typically defined separately.

Core Action
Initiate a discussion between industry and municipalities in order to achieve an agreement on sharing the responsibilities for organising separate collection and sorting of packaging waste from municipal and commercial & industrial sources.

Objective: To provide a clear legal framework and practical guidance for the cooperation between industry and local authorities in setting up separate collection systems for packaging waste

Key actions at national and local levels include:

- The responsibilities of municipalities in organizing separate collection and sorting in their territories needs to be clearly defined. In practice there are two major models for cooperation between municipalities and packaging waste recovery organizations (see figure and explanations below).
- Legislation should provide a clear framework defining how the cost related to packaging waste collection and sorting will be financed, including the contractual relations between the different stakeholders (municipalities, producer responsibility organizations and waste management companies).
- National plans should provide a time frame for the provision of separate collection systems for packaging waste to the general population. Decisions need to be made whether the separate collection system shall cover the whole national territory or give priority only to large settlements and areas with high population density. The national plans should provide indicative deadlines in terms of number of residents served per year and/or municipal packaging waste amounts collected.
- Planning of packaging waste management should also take into account possibilities for organizing separate collection and sorting on a regional basis.
- Establishment of a national structure (e.g. a Packaging Council) as a monitoring body, including representatives of different stakeholders, can support communication and consensus between municipalities and industry in organizing separate collection and achieving national targets.

Figure 1: Alternatives for contractual relations in organising separate collection

Alternative 1: Collection organized by municipalities

Alternative 2: Collection organized based on direct contracts with collect companies and cooperation with municipalities

Packaging waste management issues should also be incorporated into the municipal waste management plans and regulations.

An appropriate training programme oriented to municipalities and communal companies needs to be implemented at national level.
**Core Policy Actions**

**Alternative 1**

Within this Alternative the municipalities are entirely responsible for organizing separate collection and sorting of municipal packaging waste in their territories. For this purpose they contract the services to municipal communal companies or private operators. In order to guarantee the sustainability of the system additional contracts are signed between the Recovery Organization (RO) and municipalities. Through these contracts the RO provides the following support to the municipalities:

- Granting of funds to the municipalities, proportional to the amount of separately collected and sorted packaging waste, which will compensate the costs related to these activities.
- Guarantees for buying back and processing of the separately collected waste.
- Participation in the financing of public awareness campaigns.
- Provision of financing and technical assistance during the management of pilot projects.

The financing provided from the RO to the municipality can cover the full costs for separate collection and sorting or only part of them based on agreement.

**Alternative 2**

In the second alternative the RO is responsible for organising separate collection. For this purpose the RO signs a general contract with the municipality. The contract provides the right for the RO to organize separate collection on the territory of the municipality. Services are contracted directly from the RO to private operators usually based on tender. Municipal companies are also allowed to participate in the tender.

The municipality is not directly involved in organizing and contracting separate collection but takes a role in planning the separate collection system and control over the operators and waste holders. As there is no direct payment from the municipality to waste collection and sorting companies it is assumed that the RO covers the full costs of the system.

**Packaging and packaging waste management plans**

**Objective:** To define the framework for packaging waste management over a long time period

Key actions at national and local levels include the following:

- Define the institution responsible for the preparation of the national plan for packaging and packaging waste. The plan can be developed as a separate document or as part of the general waste management plan.
- Organize collection and processing of baseline data necessary for the development of the plan. Include data about packaging consumption, development of generation forecast, existing packaging waste collection systems, available recycling capacities, etc.
- The specific responsibilities of the competent national authorities in charge of packaging waste management need to be defined and these to be provided with the necessary capacity to monitor, control and enforce the requirements of packaging regulations.
- Define the objectives, key implementation principles and possible actions for their achievement.

**Packaging Waste Management Plans**

The issues about packaging waste management are generally addressed in the Environmental Strategies and Environmental Action Plans.

A Packaging Waste Management Plan provides a long term horizon for investment and action. Agreement between all stakeholders on the implementation approach, in particular the distribution of responsibilities and financing of the packaging waste collection and recycling system, are important components of such a plan.

Directive specific implementation plans support the national authorities in future negotiations with the European Commission and provide the grounds for the requested transitional periods (if necessary)

**Core Action**

Prepare a specific plan for the field of packaging waste management.
Core Policy Actions

Financing

Objective: Ensure sufficient financing from different sources for the development of the necessary infrastructure.

The financing of packaging waste separate collection and sorting is directly linked to the responsibilities of different stakeholders defined in the legislation. The different technical solutions adopted for the collection and sorting of packaging waste also assume a different level of cost sharing, and different costs and financing structures. The potential sources for the financing of separate collection and sorting systems can be summarized as follows.

• Revenue from recycled materials: Market price of sorted secondary raw materials delivered to the recycling (processing) plants. The revenue from the recycled materials is usually not enough to cover the costs related to the municipal packaging waste collection and sorting.

• Licensing Fees: Fees paid by the producers and importers of packaged goods to the producer responsibility organizations for organizing the achievement of recycling and recovery targets on behalf of the industry concerned. The licensing fees can be proportional to the weight of packaging and/or number of packaging units put on the market. In the case that industry is fully responsible for the financing of separate collection and sorting, the licensing fees are the major source for the financing of the system.

• Municipal Waste Taxes or Fees: Taxes charged by the municipalities, or fees directly charged by the communal waste management companies to households and industry providing for municipal waste collection and disposal. The municipal waste taxes are used where there is shared responsibility between the industry and municipalities for the financing of separate collection and sorting. Municipal waste taxes are often used to finance non-packaging recyclable waste collection (e.g. old newspapers, waste printing paper).

• Product Taxes: State taxes charged to the producers and importers of packaged goods proportional to the amount of packaging material and/or number of packages put on the market. The taxes are usually paid to the State Budget or state managed Environmental Fund. The product taxes are used in the case that the state takes the responsibility for the financing of separate collection and sorting of packaging waste. In the case of the producer responsibility system the packaging contracted to the organization, for which the licensing fee is paid, shall not be charged with a product tax.

• Deposits on beverage containers: A deposit charged to the customer of the product and paid back at the return of the container. In the case of the deposit system the packaging subject to deposit is excluded from the producer responsibility scheme financed by licensing fees.

Investment Needs

Notwithstanding the collection methods selected the minimum amount of capital investment necessary to guarantee the achievement of recycling and recovery targets by Western Balkan countries is estimated at Euro 50 – 70 million, excluding investment into the recycling industry. These figures can be significantly exceeded if more complicated collection and sorting technologies are selected.

Core Action

Identify priority investment projects providing guarantees for easier achievement of recycling and recovery targets.

Establishment of a producer responsibility scheme to deal with packaging waste assumes that industry will be responsible for financing the separate collection and sorting of packaging waste. The industry through the producer responsibility organizations can cover the full costs of the system, or only part of the costs in the case of the additional financing provided from the municipalities.
The packaging waste generated at industrial enterprises and large shops and supermarkets is usually generated in large quantities and has good quality. The responsibilities at company level can easily be defined in order to organize efficient waste sorting and storage on-site. Because of this the collection of industrial and commercial packaging waste can be usually organized at lower unit costs compared to household packaging waste. Thus the overall efficiency of the packaging waste management depends on the optimal organization of industrial and commercial packaging waste collection and sorting.

The financing of industrial and commercial packaging waste management is an obligation of industry. The responsibility to transfer waste for recycling can be designated to the waste holder or via a take back obligation to all the supply chain. A sample cost structure for industrial and commercial packaging waste is presented in the diagram below.

The internal costs such as on-site sorting and temporary storage should be responsibility of waste holder (packaging end user – industrial enterprise or shop).

For most of the non-municipal packaging waste the market price of the secondary raw materials can cover the external costs related to collection and preparation for recycling (additional sorting, bailing, etc.). In the opposite case the external cost can be covered from the waste holders through service fees charged by the waste collection companies, or supported by the producer responsibility organizations.

Core Action
Through the established legal requirements provide an incentive for the packaging end users to separate and prepare for recycling the non-municipal packaging waste.

Cost structure for industrial packaging

<table>
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<tr>
<th>Internal costs</th>
<th>External costs</th>
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<tbody>
<tr>
<td>Collection costs</td>
<td>Conditioning costs</td>
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<tr>
<td>Container costs</td>
<td>Transportation</td>
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</tbody>
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Core Action
Through the established legal requirements provide an incentive for the packaging end users to separate and prepare for recycling the non-municipal packaging waste.
contractual relations the following stakeholders can play a role in the establishment of the necessary infrastructure:
• municipalities and/or municipal communal companies;
• private operators (waste management companies); and
• recovery organizations.
• Where possible technical requirements and guidelines towards separate collection and recycling should be established. These requirements need to be discussed and agreed between the competent national authorities, the industry responsible for achieving the targets and the municipalities who are responsible for municipal waste management planning at local level.
• Introduce economic indicators to measure the efficiency of the implemented separate collection systems (e.g., costs per ton material collected, costs per capita, collection rate per capita achieved, etc.).

Objective: To organize achievement of recycling and recovery targets at lowest costs for the industry

Key actions at national and local levels include.
• The requirements towards the founding, permitting, operation and control of the Packaging Recovery Organizations should be defined in the national legislation.
• Decision should be taken at country level regarding the following issues:
  • will the producer responsibility organizations organize separate collection at country level or can they work at regional level; and
  • will producer responsibility organizations deal with all types of packaging or can their activities be limited only to municipal packaging waste or only to specific packaging materials (e.g., dealing only with paper).
• The permitting of activity should be based on the detailed program prepared by the organization explaining how the collection, sorting and recycling will be organized and financed.

Packaging recovery organizations

The establishment of producer responsibility organizations has already started in most of the countries SUIOPAK (Serbia), BHP/AK (Bosnia and Herzegovina). These organizations will significantly increase their technical and financial capacities when national regulations are enacted.

Core Action
Establish clear rules for licensing of Producer Responsibility Organizations. Without creating barriers for competition avoid the establishment of many producer responsibility organizations operating at the national level.

Recovery organizations

The activity of the RO should be subject to audit in order to prove the achievement of targets and compliance with the permit conditions.
• The national legislation should provide the RO with a possibility for auditing the clients in order to guarantee the correct declaration of packaging and to avoid free-riders.

Costs structure municipal packaging collection and sorting

The costs of municipal packaging waste collection and sorting can be covered completely by the producer responsibility organizations or shared with municipalities responsible for the residual waste collectors.

Recycling of some materials can also cause costs, in case that separation/recycling of “un economical” materials is also necessary in order to guarantee the achievement of national recycling/recovery targets.

A sample costs structure for municipal packaging waste collection and sorting is presented in the figure below:

Household Packaging Collection

Site costs
Collection costs
Sorting/bailing costs
Costs for buying materials from individual collectors

Public awareness costs
Transport costs

Market price: secondary materials
Core Policy Actions

Contracts with waste management companies

Objective: To define the relations between the producer responsibility scheme (or municipality) and waste collection/sorting company.

Key actions at national and local levels include:

- Develop a guidance document on contracting and tendering the municipal packaging waste collection and sorting. In general the guidance should cover the following issues:
  - Services covered (clarification of responsibility).
  - Specifications:
    - public collection sites, cleaning and maintenance;
    - collection containers and/or bags for municipal packaging waste collection systems;
    - transport requirements;
    - collection requirements:
      - collection volume to be provided;
      - collection frequency; and
      - lower and upper limit for collection by weight, in kilograms per inhabitant and year.
  - quality of collection (input): minimum standards concerning non-packaging and residual waste in the packaging collection;
  - documentation, reporting and control requirements; and
  - terms of payment (e.g. per container lifted, per weight of material collected).
- Sorting requirements:
  - fractions to be sorted out, e.g. PET bottles, polyethylene (PE) films, high density polyethylene (HDPE) hollow bodies, PP items; and
  - terms of payment (e.g. per quantity of input material or per output of sorted materials).

Establishing infrastructure

Objective: To establish appropriate infrastructure based on the packaging collection systems to be employed, and the quantities and quality of materials to be collected.

It is wise to implement an appropriate set of pilot projects before launching full scale operations in order to test different collection methods. The existence of individual collectors requires the efficiency of collection systems based on separate collection containers or plastic bags to be initially tested prior their eventual implementation at national level. In most countries there are no national technical guidelines on how the separate collection should be implemented.

The following factors need to be taken into account when planning a separate collection system as they influence the composition and quality of household packaging waste collection.
Factors which cannot be influenced:
- population density, community, size of area, number of residents living in the municipality/settlement;
- standard of living;
- seasonal changes;
- local and regional economic differences, social structure;
- number of persons per household and per building and
- other existing collection systems (informal sector collection).

Factors which can be influenced:
- collection system (bins or bags, centralized/decentralized, etc.);
- collected components (separate or combined multi-material collection);
- container size, container types combined with emptying frequency; and
- consumer behavior.

The different collection methods mean different costs and different quality of the collected material. A rough comparison between the different collection methods is presented in Table 2 below.

### Table 2: Rough comparison of different separate collection methods

<table>
<thead>
<tr>
<th>Collection system</th>
<th>Quantity of material collected</th>
<th>Residues content</th>
<th>Costs</th>
<th>Additional remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kerbside collection (plastic bags)</td>
<td>Average to high</td>
<td>Low</td>
<td>High</td>
<td>Collection schedule for plastic bags for discharge and collection of plastic bags shall be defined. Difficult compatibility with individual collectors and potential problems with homeless dogs.</td>
</tr>
<tr>
<td>Kerbside collection (individual bins, containers)</td>
<td>High</td>
<td>Low to average</td>
<td>High</td>
<td>Suitable mainly to areas with individual houses or where containers can be designated to a specific building.</td>
</tr>
<tr>
<td>Bring systems (separate collection containers)</td>
<td>Low</td>
<td>Average to high</td>
<td>Average</td>
<td>The system results can be significantly influenced by type of containers used and awareness campaigns implemented. The system is usually applied for glass collection.</td>
</tr>
<tr>
<td>Bring systems (recycling center)</td>
<td>Low</td>
<td>Low</td>
<td>Low to average</td>
<td>The collected amounts can be higher if material is delivered to recycling centers from individual collectors. Suitable for paper and glass, less suitable for plastics.</td>
</tr>
</tbody>
</table>

### Figure 2: Samples of different collection systems applied by EcoPack Bulgaria

[Images of different collection systems: bring system with containers, recycling center, kerbside collection with plastic bags]
Pilot projects

Objective: To develop an optimal separate collection system, taking into account the country specific conditions.

Key actions at national and local levels include the following:

- Develop appropriate (pilot) projects to test different collection systems. Possible pilot tests could be:
  - testing different collection methods for packaging waste separate collection:
    - depending on population density and standard of living (in areas with family houses and blocks of flats areas);
    - using different collection methods: bring systems (e.g. recycling centers, separate collection containers) or curbside systems (individual bins/containers, plastic bags); and
    - testing different types and location of containers.
  - separate collection in administrative buildings and commercial outlets;
  - collection campaigns; and
  - model project for involvement of individual collectors.

Agreement for packaging waste collection in Bulgaria

In 2007, three years after the packaging waste regulation entered into force, the Bulgarian Ministry of Environment and the Packaging Recovery Organizations signed an agreement for the future development of packaging waste separate collection systems. According to the Agreement the separate collection services were to be organised for 6,200,000 residents by end of 2008 (approximately 82% of the population in the country). The memorandum defined the minimum density of containers’ placement, collection frequency and container volume per collection point. The Recovery Organizations took the obligation to invest at least 51 million Euro in the period 2008/2009 in order to guarantee compliance with the Agreement.

Core Action

- Define technical standards towards municipal packaging waste collection and deadlines for their achievement.

- All data collected during the pilot projects needs to be measured and documented in the appropriate way.

- Define criteria for measurement and evaluation of the separate collection efficiency (e.g. container volume provided per capita, collection rates per material per capita, etc.). Cost-Benefit Analysis can be a very good tool to measure efficiency of collection systems. This analysis measures all effects (new labour places, emissions reductions, etc) of a system.

- Based on the analysis of the results achieved during the pilot projects implementation, guidelines on the future establishment of a separate collection system at national level need to be developed and agreed with all stakeholders.

- After evaluation of the possible collection schemes deadlines for extension of the collection system shall be set up and, if necessary, separate quantitative targets for municipal packaging waste collection.

- In all countries special attention needs to be given to the role of individual collectors in the achievement of targets. Building the collection system around the informal/semi-formal collection systems may be the most appropriate and cost effective solution. Potential conflicts between the newly established systems and individual collectors shall be avoided to the extent possible.

- In order to facilitate the proper implementation of separate collection systems a training programme oriented to municipalities and communal companies shall be developed and implemented.
Core Policy Actions

Sorting

Objective: To provide the necessary capacities for sorting of quality recyclable materials.

Key actions at national and local levels include the following:

- Define the need for sorting facilities based on the selected collection system.
- Build on the existing recyclables collection/sorting activities, including and involving the informal/semi-formal sector.
- Identify the areas to be served by each sorting facility based on the calculation of the collection costs. Where applicable the future plans for the establishment of regional treatment and disposal infrastructure for mixed municipal waste shall be taken into account.
- Consider the (regional) market for recycled materials (don’t sort material you can’t use), the potential in the waste-stream and the market situation (revenues) as main economic factors for a decision about investment in sorting-plant.

Sorting of packaging waste

The sorting of recyclable materials is not well developed in all Western Balkan countries. Significant investments will be needed in order to provide enough sorting capacities to process separately collected waste. Special attention needs to be given to the establishment of appropriate infrastructure for sorting of glass packaging. The glass sorting will be a crucial factor for the achievement of recycling targets as presently there are no sorting and recycling capacities in the countries (except in Serbia).

Core Action

develop sorting facilities and capacity based on careful assessment of the commercial viability.

- Define the responsibilities of the producer responsibility organizations and municipalities for the establishment of sorting facilities and for the financing of initial investments.
- The stakeholders responsible for the establishment of sorting infrastructure should agree the necessary capacities to be established and the applied technologies.
Core Policy Actions

Public Awareness/Community Participation

Objective: To ensure support and participation of households and industry in the separate collection system

Key actions at national and local levels include:

- Requirements for raising public awareness and educating society for the importance of waste recycling should be established in national legislation and all plans in the field of packaging waste.
- The information and public awareness campaigns should be implemented both at national and local level.
- The target groups, key messages and communication channels need to be defined.
- Special attention should be given to work with kids in first school classes.

Halton Borough Council

In 2009, Halton Borough Council near Liverpool in the UK introduced a major expansion to their kerbside collection services including the provision to homes of a wheeled bin for dry recycling and a second bin for garden waste. The initial roll out had achieved limited success and analysis of performance cited poor communications as a major reason for the lacklustre levels of diversion. For the expansion a budget of £150,000 was committed for public engagement.

Direct, door-step engagement was deployed initially to assess barriers and understanding. This was followed by a district wide advertising campaign that raised awareness in advance of the distribution of a detailed information pack, landing through people’s letterboxes one week before the arrival of their new bins. This pack contained a collection calendar, frequently asked questions, and information on what can and can’t be recycled as well as general background information as to why the scheme was introduced. All material included an integrated local waste brand identity, which set the campaign apart from other council campaigns. As a result, take up and participation in the expansion areas was significantly improved over the initial rollout with diversion increasing from 23% to above 35%.

Core Action

Education and awareness is the most important element to guarantee the success of any separate collection system.
Summary of Core Actions

- Recovery and recycling targets for different packaging materials and packaging in general, and the time periods for their achievement, need to be realistic. Provide some flexibility to the industry in choosing appropriate set of packaging materials to be collected and sorted.
- Ensure simple and clear reporting requirements. Do not ask for data or information that is not easily available or that will not be used for a specific purpose or that will be difficult to process or audit.
- Initiate a discussion between industry and municipalities in order to achieve an agreement on sharing the responsibilities for organising the separate collection and sorting of packaging waste from municipal and commercial & industrial sources.
- Prepare a specific plan for the field of packaging waste management.
- Identify priority investment projects providing guarantees for secure achievement of recycling and recovery targets.
- Through the established legal requirements provide an incentive for the packaging end users to separate and prepare for recycling the non-municipal packaging waste.
- Both producer responsibility organizations and municipalities should be involved in the planning of separate collection systems for municipal packaging waste because of the related financial implications.
- Establish clear rules for licensing of Producer Responsibility Organizations.
- Without creating barriers for competition avoid the establishment of many producer responsibility organizations operating at the national level.
- Develop sorting facilities and capacity based on careful assessment of the commercial viability.
- Build on the existing recyclables collection/sorting activities, including and involving the informal/semi-informal recycling sector.
- Define technical standards towards municipal packaging waste collection and deadlines for their achievement.
- Develop a standard tendering and contracting procedure for contracting separate collection and sorting services.
- Education and awareness is the most important element to guarantee the success of any separate collection system.