European Commission, Brussels

SUPPORT TO MEMBER STATES IN IMPROVING WASTE MANAGEMENT BASED ON ASSESSMENT OF MEMBER STATES' PERFORMANCE

070307/2011/606502/SER/C2

Final Report

07 May 2013

BiPRO

Beratungsgesellschaft für integrierte Problemlösungen

In cooperation with

ARCADIS
Infrastructuur, milieu, gebouwen

ENVIROPLAN
Consultants & Engineers

CLIENT	**European Commission** **Directorate-General** **Environment** **Unit C.2 – Waste Management** **Avenue de Beaulieu 29, BU29 - 06/037** **1160 Brussels** **Belgium**
PROJECT	**Support to Member States in improving waste management based on assessment of Member States' performance** **070307/2011/606502/SER/C2**
CONSULTANT	**BiPRO GmbH** **Grauertstraße 12** **81545 Munich** **Germany**
SUBCONTRACTORS	**ARCADIS Belgium nv** **Kortrijksesteenweg 302** **B-9000 Ghent** **Belgium** **ENVIROPLAN Consultants & Engineers S.A.** **40, Ag. Konstantinou str** **Aethrio Business Center** **151 24 Maroussi** **Greece**
CONTACT	**BiPRO GmbH**
Telephone	**+49-89-18979050**
Telefax	**+49-89-18979052**
E-mail	**mail@bipro.de**
Website	**http://www.bipro.de**

BiPRO

Beratungsgesellschaft für integrierte Problemlösungen

Content

List of tables

List of Figures

Executive summary

BACKGROUND

Proper legal implementation and practical enforcement of EU waste legislation are key priorities of EU environmental policy, in order to comply with the obligation of the European Commission to ensure and oversee the application of EU legislation according to the Treaty of the European Union (TFEU). However, the implementation of EU waste legislation shows large differences in the EU Member States (MS). In particular, major discrepancies exist in the implementation of the Waste Framework Directive[1] (WFD), defining the basic principles of environmentally sound management of waste. This wide disparity between MS hampers development of the EU economy as a whole, and its recycling and waste management industry in particular, from reaping the benefits of proper implementation.

The Report on the Thematic Strategy on the Prevention and Recycling of Waste[2], published by the European Commission in 2011, stipulates that the proper implementation and enforcement of the EU acquis remains a priority and related monitoring at MS level will be performed. This includes continuing efforts to modernise, simplify and ensure consistency of the waste legislation and the review of main targets included in key waste Directives. A legal obligation to review a number of waste management targets by 2014 is laid down in the WFD 2008/98/EC, the Landfill Directive 99/31/EC and the Packaging and Packaging Waste Directive 94/62/EC. The review will address in a comprehensive manner the adequacy of the current targets under the three targeted Directives, which may lead to the reinforcement of existing targets or to the introduction of new targets. At the same time, the review will look into possible overlaps and identify options to simplify legislation and improve clarity and consistency, thus making legislation clearer, more effective and more easily enforceable. The review will be informed by the 'aspirational objectives' set out in the Resource Efficiency Roadmap[3] as recently confirmed in the proposal for a 7th Environmental Action Programme[4], basically to manage waste as resource, reduce per capita waste generation in absolute terms, limit energy recovery to non-recyclable materials, phase out landfilling, ensure high quality recycling, and develop markets for secondary raw materials; as well as by the objective to ensure safe/sustainable access to raw materials.

Further, the Commission committed itself to support MS in developing appropriate strategies and policies. In order to improve implementation and related waste management systems, additional measures need to be taken at EU level, taking into account the development of proactive verification procedures and an early warning system on the basis of the national Waste Management Plans (WMP). Against the background of increasing waste amounts, deficits in waste management and vast discrepancies in the EU, the Commission has defined the objective to strengthen the proper implementation of EU waste legislation, support waste prevention policies and to move towards a European recycling society.

INTRODUCTION TO THE PROJECT

[1] Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (OJ L 312, 22.11.2008, p. 3)
[2] Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the Thematic Strategy on the Prevention and Recycling of Waste (SEC(2011) 70 final, 19.1.2011)
[3] European Commission Communication COM(2011) 571 final, Roadmap to a Resource Efficient Europe. http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0571:FIN:EN:PDF
[4] European Commission Communication COM(2012) 710 final, Proposal for a decision on a General Union Environmental Action Programme to 2020. http://ec.europa.eu/environment/newprg/pdf/7EAP_Proposal/en.pdf

The project '*Support to Member States in improving waste management based on assessment of Member States' performance*' aims at assisting the Commission in the practical implementation of the conclusions of the 'Report on the Thematic Strategy on the Prevention and Recycling of Waste'. Further, the purpose of the project is to provide support to MS and to contribute to the improvement of waste management practices at national level in accordance with the principles of EU waste legislation.

In the first phase of the project a set of objective assessment criteria was defined for the screening of waste management practice in all MS, based on current legal requirements[5]. The methodology was verified via comprehensive stakeholder consultation and applied within the project to screen the waste management performance of all EU-27 MS and identify those MS with the largest implementation gaps.

In a second phase ten MS of the latter were selected to be covered by an in-depth assessment of their waste management situation and challenges in complying with EU requirements. Detailed information on the national waste management systems of the MS with the largest implementation gaps has been compiled. Based on the assessment, individual roadmaps, containing country specific recommendations for the improvement of the waste management situation, have been prepared. On the basis of the elaborated documents and intensive exchange with national competent authorities in all ten MS, seminars were organised to discuss the views on specific problems and possible recommendations for improvements. The seminars took place between September and November 2012 and were organised by BiPRO in close cooperation with the national competent authorities. DG Environment and DG Regio representatives participated in the MS meetings. Further, experts from the European Investment Bank JASPERS attended two seminars.

In the last stage of the project, a high level seminar was organised to discuss eventual actions already taken by the MS and to exchange best practice information on municipal waste management.

SCREENING OF WASTE MANAGEMENT PERFORMANCE

The waste management performance of all MS was subject to screening to identify those MS with the largest implementation gaps, in particular in relation to municipal waste management. For the screening the main elements and legal requirements stemming from EU waste directives (mainly from the WFD and the Landfill Directive), the following core elements were considered for the development of criteria:

- practical implementation of the waste management hierarchy,
- application of economic and legal instruments to move up the waste hierarchy,
- sufficiency of treatment infrastructure and quality of waste management planning,
- fulfilment of targets,
- infringement procedures.

These elements were assessed using 18 criteria for each MS, taking into account information sources at EU, national and regional level. Latest available statistical data and data of former years, for comparison of development within a MS, were extracted from the EUROSTAT database. References comprised reports published by the European Commission, the European Topic Centre on Sustainable Consumption and Production, internal working documents of EUROSTAT and the EU Commission, national/regional

[5] The document "Assessment criteria for the screening of all EU Member States' waste management performance" together with the Annex provides details on information sources and data.

WMPs and where available also the Waste Prevention Programmes (WPPs).

The screening results confirmed the assumption of large differences within the EU-27 with regard to treatment of municipal waste, compliance with the WFD and Landfill Directive and application of legal or economic instruments as well as planning quality. The screening report is published at: http://ec.europa.eu/environment/waste/studies/pdf/Screening_report.pdf

For further consideration, a detailed analysis and preparation of recommendations were made for BG, CZ, EE, GR, IT (South), LV, LT, PL, RO and SK.

DETAILED COUNTRY ANALYSIS

Detailed background information on municipal waste management (including bio-waste and packaging waste) was compiled in country factsheets for each of the ten MS. The factsheets served, together with the in depth analysis of the problems and their reasons, as a basis for the elaboration of the roadmaps (i.e. recommendations on how to address identified problems).

A great variety of information sources (EUROSTAT, EC reports, EC implementation reports, EEA reports, EIONET information, other available databases and MS specific information such as WMPs and information available on national websites were used to develop a comprehensive overview of the actual waste management situation in each of the selected MS.

The factsheets and roadmaps were developed in cooperation the MS authorities and stakeholders involved in waste management.

The recommendations include the following policy instruments:

- Economic and fiscal instruments (e.g. landfill/incineration fees/taxes or bans, resource efficiency taxes, producer responsibility schemes, 'pay as you throw' schemes, incentives for municipalities and other relevant instruments);
- Legal instruments (modification of national laws);
- Administrative instruments, including change of administrative procedures;
- Infrastructure needs;
- Information and educational campaigns.

Member Stats obtained the possibility to send an official statement with regard to the factsheets and roadmaps to the Commission. The statements have been published together with the national factsheets and roadmaps at: http://ec.europa.eu/environment/waste/framework/support_implementation.htm

So far, three MS (PL, GR and CZ) have sent their statement.

RESULTS:

1) Main findings of the problem analysis at national level

Waste treatment largely diverting from the waste hierarchy: Most of the MS are still highly relying on landfilling municipal waste and partly overcapacities exist. Huge efforts and progress were made by MS in closure and recultivation of illegal landfills over the past years and most incompliant landfills could be reequipped. However, in some MS illegal landfills still exist. There is a lack of modern collection and

treatment infrastructure. Available funding could be better allocated and used to improve separate collection and prevention, reuse and recycling infrastructure.

Insufficient separate collection: Most systems are in the (early) developing phase and only limited infrastructure is available to the public , mainly for packaging waste and paper (lack of civic amenity sites, rarely door-to-door collection, often only voluntary bring systems available in urban areas). Generally, separate collection for bio-waste and other fractions is not yet available and need to be up-scaled. Further, the convenience of collection schemes in place need to be improved considerably.

High share of biodegradable waste going to landfills: Most of the ten MS did not reach the reduction targets of the Landfill Directive. National strategies with specific measures on diverting biodegradable waste from landfill need to be enforced; source separate collection of bio-waste is the highest priority to improve its management and to make it available as a valuable resource.

Lack or poor use of economic instruments: Generally low or no taxes are applied on disposal, MBT or incineration of (municipal) waste in order to make recycling an economic option. Further, the application of extended producer responsibility (EPR) schemes is limited to few waste streams. Their control is a challenge for several MS. Intransparent or inefficient EPR schemes hamper development in the MS. Most MS do not yet apply pay-as-you-throw (PAYT) schemes and/or incentive policies for municipalities to support the development of separate collection schemes.

Problems with planning and practical implementation of WMPs: Some MS have outdated WMPs in place and there is a need to update the documents according to new requirements of the revised WFD. In order to improve the planning, also more reliable data is needed and a better overview of collection systems in place, available and planned treatment capacities available, etc. In addition, measures and concepts on how to achieve the objectives and targets of the EU legislation should be included.

Deficits in enforcement, cooperation and communication: In several MS there is a need for improving practical enforcement, inspections and control in order to ensure the practical application of legal provisions. In addition, there is a need for harmonisation of systems and extended cooperation as well as for bundling capacities to have a coordinated approach and support for local authorities on waste management. There is often scope to improve guidance and awareness raising.

2) Main recommendations to improve national waste management systems

Based on the experiences made in other MS and the problems encountered, the recommendations generally comprise to

- **Introduce treatment taxes** (especially for landfill/disposal in a first step, incineration and low quality MBT in a second step). Revenues from taxes should be earmarked for financing separate collection, reuse and recycling infrastructure and awareness raising,
- **Establish, improve and intensify separate collection systems** and their control,
- **Initiate and intensify awareness raising** and information designed for different target groups,
- **Simplify administration** of waste management by administrative reforms,
- **Support local authorities** in their tasks on municipal waste management, provide incentives and penalties for municipalities to promote prevention and develop separate collection,

- **Extend and improve EPR schemes** by better monitoring and more transparency, and ensure that all funds collected are used for the development of separate collection and recycling,
- **Update WMPs**, including development of measures to achieve legally binding targets and objectives,
- **Enforce national strategies on bio-waste management**,
- **Revise and/or improve waste statistics** by aligning reporting to EUROSTAT guidelines,
- **Make better use of EU funding** for waste infrastructure and initiatives related to the first steps of the waste hierarchy.

1 Introduction

1.1 Background

The Commission's implementation reports from 2009 revealed large differences in implementation of EU waste legislation in the MS. In particular, major discrepancies exist in the implementation and application of the WFD, defining the basic principles of environmentally sound management of waste. In addition, the transposition of EU requirements into national legislation or the definition of sustainable waste management policy does not ensure environmental sound management in actual practice in a MS. There is often a gap observed which is not only shown by available waste management statistics, but which was confirmed by court cases, infringement procedures as well as related studies. This observation could be also made in the last series of information exchange and awareness raising events for MS authorities and stakeholders. The events were carried out in the past years on EU waste legislation covering on waste management, landfill of waste as well as waste shipment.

Proper implementation of EU waste legislation is an important economic opportunity for the EU as a whole, and in particular for the recycling and waste management industry, providing stimulation for innovations and economic growth. However, the existing discrepancies in the MS prevent these positive effects and economic benefits.

Against the background of increasing waste amounts, deficits in waste management and vast discrepancies in Europe, the Commission has defined the objective to strengthen waste prevention policies and to move towards a European recycling society. The Thematic Strategy and the Prevention and Recycling of Waste recently published by the Commission states that the proper implementation and enforcement of the EU acquis remains a priority and related monitoring on MS level will be performed. In this context especially relevant provisions of the WFD and compliance with EU targets will be closely observed. In addition, the Commission is committed to support MS in developing appropriate strategies and policies. For the improvement of the state of implementation and related waste management, additional measures need to be taken at EU level, taking into account the development of proactive verification procedure and an early warning system on the basis of the national WMPs.

This contract assists the Commission in the practical implementation of the conclusions of the report on the Thematic Strategy and the Prevention and Recycling of Waste. Further, the study contributes to the improvement of waste management practices in MS in accordance with the principles of EU waste legislation. In more detail, the tasks of the study comprise: 1) the identification of objective criteria for the assessment of waste management practice in order to analyse the real situation of waste management in the MS; 2) the screening of national WMPs and WPPs as well as other available information (reports, studies, statistics, minutes from awareness events, etc.) against the criteria developed in order to provide an overview on implementation of EU waste legislation and to identify 10 MS with the largest implementation gaps. In particular, the compliance with the waste hierarchy and the targets laid down in EU waste legislation are assessed. With the identification of the specific problems and existing deficits, a selection of ten MS is made; 3) for these ten MS, a set of individual, implementable recommendations and practical guidance is developed, addressing their specific waste management problems. The solutions provided are elaborated in detail and individually for each MS concerned to support the improvement of the waste management practices by moving up the waste hierarchy.

The Waste Framework Directive, targets and related legal requirements and targets of other waste stream directives

The WFD establishes the legal framework for the waste management in the Community and aims at protecting the environment and human health by prevention of harmful effects caused by waste generation and waste treatment. The transposition deadline for the revised WFD 2008/98/EC was 12 December 2010. However, national execution measures are not available for all MS by 01 July 2011.[6]

The revised WFD sets out a number of new provisions and introduces recycling and recovery targets. In its basic principles environmentally sound management of waste, the directive is however closely related to the former waste framework directives dating back to 1975:

- No waste treatment/disposal without permit;
- Application of treatment standards to prevent damages to health and environment;
- Proper classification of hazardous waste and related record keeping and mixing ban;
- Inspections by competent authorities;
- Efficient measures and penalties against uncontrolled waste disposal;
- Polluter pays principle.

The WFD requires MS to set up a proper infrastructure for environmental sound waste management including adequate enforcement authorities, appropriate collection schemes as well as sufficient waste treatment and disposal capacities. Key instrument to set up this infrastructure and to monitor waste generations and its environmental sound treatment and disposal are the MS WMPs.

The core element of the new WFD is the introduction of an expanded 'five step hierarchy' for waste management which shall be applied by MS. According to the hierarchy, waste prevention is the most desirable option, followed by preparing used products/non-waste for re-use, recycling and other ways of recovery, including energy recovery, with disposal (e.g. landfilling) as the last management option. A deviation from the waste hierarchy is only possible for specific waste streams and when justified by life-cycle thinking which considers the resource use and environmental impacts throughout all stages of the life of a product or service.

Waste prevention at the source is a key priority of the WFD. By 2013 MS shall establish WPPs that set out their prevention objectives, describe measures to achieve these objectives and determine qualitative and quantitative benchmarks for waste prevention. Measures for waste prevention can potentially include the promotion of eco-design products, the use for economic instruments for sustainable resource use and the design of campaigns to change consumer behaviour.

The Directive also introduces a 50 % target for recycling of municipal waste including at least paper, metal, plastic and glass from households. A 70 % target is set for the recycling and material recovery of construction and demolition waste. Both targets have to be met at the latest by 2020. The calculation

[6] References for national execution measures are available for Belgium, Czech Republic, Denmark, Ireland, France, Italy, Latvia, Lithuania, Malta, The Netherlands, Austria, Poland, Portugal, Finland, Sweden, United Kingdom, on http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:72008L0098:EN:NOT (homepage accessed on 05 July 2011)

method for the recycling targets was adopted on the meeting of the Technical Adaptation Committee (TAC) on 1 July 2011.

In addition, requirements for separate collection of at least paper, metal, plastic and glass have to be introduced by MS by 2015. Further, separate collection of bio-waste shall be promoted by MS. Separate collection aims to facilitate the recovery process and encourage the collection of waste materials that meet the quality standards of the recycling industry.

A number of waste stream specific targets are laid down in the respective directives, e.g. for waste collection, recycling and recovery.

The Commission supports extensive research in the area of different waste streams and related management and disposal. In order to support the MS in the proper implementation and enforcement of the EU waste legislation, the Commission Services have further commissioned several studies in the area of waste management planning and waste prevention.[7]

The current discrepancies in terms of municipal waste management between MS and their sometimes large distance to the 50 % recycling target set by the WFD for 2020, illustrate the urgent need for several MS to adjust their waste policy and infrastructure to achieve the targets (see Figure 1).

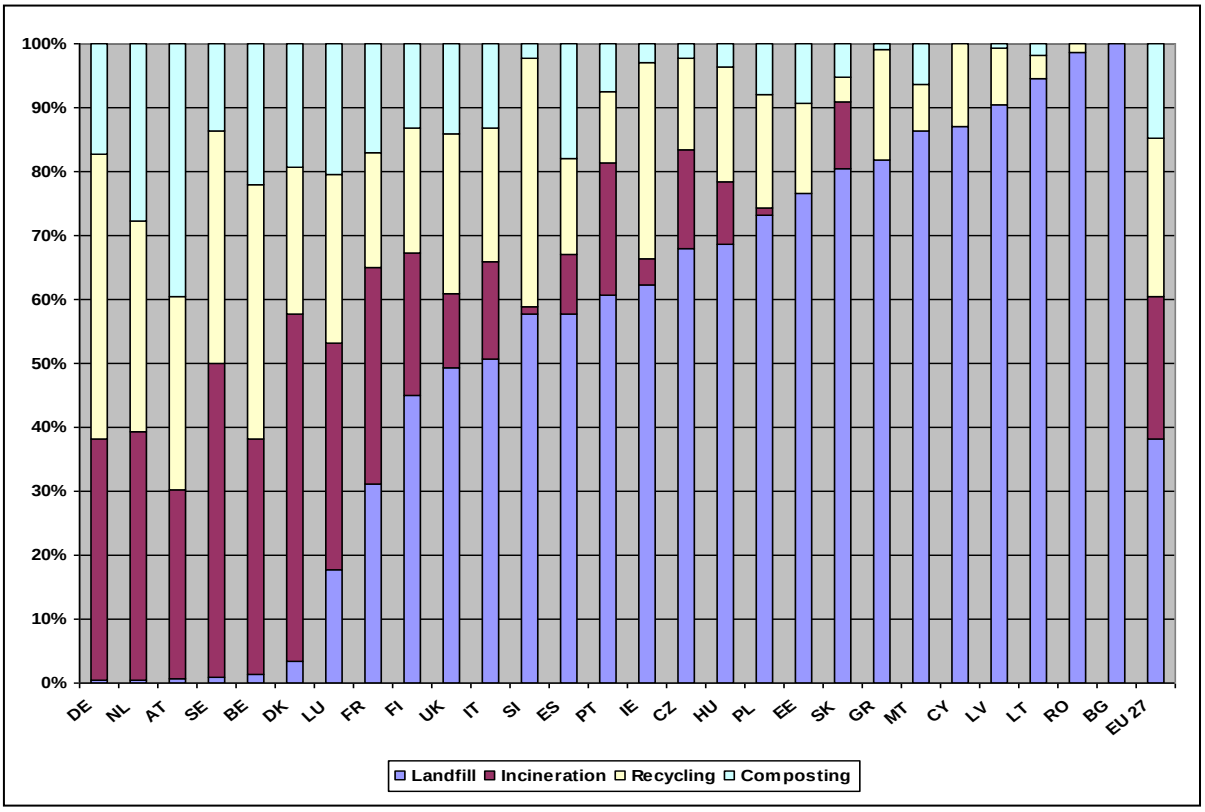

Figure 1: Municipal waste treatment in EU-27 in 2010 [EUROSTAT 2012]

[7] The studies are available at the Commission's webpage: http://ec.europa.eu/environment/waste/studies/index.htm

1.2 Tasks and objectives

The general objective for this contract is to assist the European Commission in monitoring the practical implementation and enforcement of EU waste legislation at national level and in developing support for MS to address deficits identified. In particular the following tasks are specified:

- Identify a set of objective criteria for the assessment of waste management practice in MS, based on current legal requirements;
- Analyse the real waste management situation in the MS by screening national WMPs and WPPs as well as other relevant information;
- Identify potential deficiencies in MS' waste management practices;
- Elaborate a set of recommendations ("roadmaps") which address these specific deficits by providing a selection of measures and tools which proved successful ain well performing MS (including use of economic instruments);
- Organisation of expert seminars in the selected MS;
- Follow-up activities and meeting with selected MS.

2 Project management

2.1 Schedule and deliverables

The official project start was 01 December 2011. The tasks will be completed within 18 months, and the project work is foreseen to be finished by 01 June 2013.

The following deliverables are required and have been accordingly completed within the project:

Table 1: Project deliverables

Deliverable	Description	Deadline	Date of delivery
D0	Work Plan	A work plan to be agreed with the Commission Services (two weeks after project start)	**13 December 2011**
D1	Inception Report	1 month after signature of the contract	**18 January 2012**
D2	Interim Report	7 months after signature	**02 July 2012**
D3	Draft Final Report	17 months after signature	**26 April 2013**
D4	Final report	18 months after signature	***31 May 2013***

2.2 Meetings

2.2.1 Project meeting

A project meeting for the discussion of the factsheets and draft roadmaps took place on 12 June 2012 in Brussels. The meeting was organised as a joint meeting with project managers of European Environment Agency (EEA) and consultants in charge to support the study on municipal waste management and modelling for waste management planning to use potential synergies between the different projects. Related information on national waste management infrastructure and organisation of municipal waste management in the MS as well as interim results on historic waste policy and prognosis of distance to targets were exchanged for the ten MS.

2.2.2 Seminars in the Member States

A series of seminars on the Roadmaps with the ten selected MS was planned to be scheduled between Sep-Nov 2012; all meetings could be undertaken within this timeframe. The meetings took place in the respective capitals of the MS. The seminars have been organised by the consultant in close cooperation with the MS authorities that provided helpful support for the realisation of the seminars and invitation of national representatives.

On behalf of the EC representatives of DG Environment (C and A), DG for Regional and Urban Policy, the European Investment Bank and the Task Force on Greece have participated in the meetings as well as decision makers on behalf of the national and regional competent authorities of the MS.

The minutes of the MS seminars are available in **Annex 8**.

2.2.3 *High level meeting on municipal waste management*

The high level seminar on policy instruments to improve municipal waste management took place on 19 March 2013 in Brussels as part of the project launched by DG Environment to support implementation in the MS experiencing implementation gaps in terms of municipal waste management.[8] It closes the ten MS visits conducted between Sep-Nov 2012.

Among the main objective of the seminar was to exchange information, share good practices and encourage participating MS to use the country specific Roadmaps as well as the ex-post evaluation developed by the EEA as a tool for their future policy design. The meeting agenda is included in the minutes (see Annex 9).

The seminar was inaugurated by the Commissioner for Environment, Mr Janez Potocnik. Representatives of the ten MS (BG, CZ, EE, GR, IT-South, LV, LT, PL, RO and SK) and other MS attended, having experienced and solved similar problems/issues in their respective countries (AT, BE, EE, ES, FR and IT). Further representatives from DG Environment, EEA, DG REGIO, the European Investment Bank, the Task Force on Greece and BiPRO participated in the seminar.

The presentations and additional information to the seminar can be downloaded at: http://ec.europa.eu/environment/waste/framework/support_implementation.htm

The minutes of the high level meeting are available in **Annex 9**.

2.3 Completed tasks

In accordance with the specific Terms of References of this contract and the agreed project schedule, the following work packages have been completed and respective deliverables have been duly sent to the Commission:

- WP 1 “Development of criteria and methodology for the assessment of national waste management practice”
- WP 2 “Screening of waste management practices of all MS against developed criteria”
- WP 3 “Description of problems and elaboration of a proposal for actions improving waste management in the selected MS”
- WP 4 “Preparation and organisation of seminars”
- WP 5 “Follow-up to seminars, including meetings”
- WP 6 “Overall dissemination, reporting and management including close cooperation with the European Commission”

All deliverables are submitted with the Final Report, including the Annexes as listed in the table below.

[8] SUPPORT TO MEMBER STATES IN IMPROVING WASTE MANAGEMENT BASED ON ASSESSMENT OF MEMBER STATES’ PERFORMANCE 070307/2011/606502/SER/C2

Table 2: Overview of Annexes to the final report

Annex 1	Work plan
Annex 2	Screening methodology
Annex 3	Documentation of stakeholder consultation on the screening methodology and respective consideration of comments and justification
Annex 4	Screening report
Annex 5	Country factsheets
Annex 6	Guidance on the application of policy instrument and infrastructure in the field of waste management
Annex 7	Roadmaps
Annex 8	Minutes of the 10 seminars
Annex 9	Minutes of the high level meeting in March 2013

3 Screening report

3.1 Methodology (development of criteria) and scoring

The proposal for the assessment criteria and methodology is included in the "*Method and information sources for the screening of all EU Member States' waste management performance*" (**Annex 2**).

The document contains:

- Information on **background and objectives** of the project and reasons for assessing the MS' performance;
- List of **elements related to waste management** which shall be considered for the assessment;
- **Set of criteria and explanation on the rationale** behind the criteria and its **application** (overview table);
- List of **information sources** used as basis for the assessment;
    - In order to provide the Commission and MS with full transparency on the information basis which was used for the assessment a complete list of information sources is included in the respective Annex to the document
    - In addition, a table compiling WMPs and WPPs is provided; a separate overview table on the documents and related publication or reference years are included;
    - As an additional element to the ToR and tender delivered, timelines and completeness/correctness of the information used (e.g. regarding WMP/WPP) were consulted with MS within the stakeholder consultation

For further information see **Annex 2**.

3.2 Stakeholder consultation on screening methodology

The screening methodology (Annex 2) was subject to stakeholder consultation. In total 150 stakeholders were contacted to comment on the document including contacts from:

- The Technical Adaptation Committee on the WFD,
- National competent authorities (MoE, Environmental Agencies, Inspectorates),
- Non-governmental organisations (EEB, European Compost Network, Friends of the Earth, Greenpeace, etc.),
- EC institutions (EEA, European Topic Centre, Joint Research Centre).

Feedback on the screening methodology was given in particular from:

- The Ministries of Environment from AT, CZ, DE, IE, PL, SK, UK,
- The Environmental Agency from AT,
- National Association on Recyclers from HU.

Comments in particular regarded the issues of taxes/fees, the comparability of data, the scoring method and the actuality of WMPs and current initiative/the application of instruments in the MS. All comments received by stakeholders were duly documented and evaluated. Several proposals from the stakeholders were deemed as suitable to improve the methodology.

The list of stakeholders and the comments received are included in **Annex 3**.

3.3 Screening results

The screening results are contained in the screening report which is available in **Annex 4**. The screening report includes a section on background and objectives, methodology, results as well as an overview of data and scoring applied. In addition, the information sources used are listed.

*As a result of the screening of waste management performance it is proposed to cover the following Member States **BG, CZ, GR, EE, IT, LT, LV, PL, RO and SK** with the particular support within this contract (assessment of problems and reasons, preparing roadmaps, seminars with competent authorities). For **IT** regional focus should be the southern part. **CY** and **MT** and probably also **IE** and **HU** should be addressed by other measures outside of this project (e.g. pilot projects etc.)*

The executive summary of the report is given below:

The waste management performance of all EU MS was subject to screening to identify those MS with the largest implementation gaps, in particular in relation to municipal waste management. For screening the main elements and legal requirements stemming from EU waste directives (mainly from the WFD and the Landfill Directive) were considered for the design of suitable criteria. These core elements comprise the practical implementation of the waste management hierarchy, application of economic and legal instruments to move up the waste hierarchy, sufficiency of treatment infrastructure and quality of waste management planning, the fulfilment of targets and infringement procedures. These elements were assessed by 18 criteria for each MS taking into account information sources at EU, national or regional level. Latest available statistical data and data of former years for comparison of development within a country were extracted from the EUROSTAT database. References comprised reports published by the European Commission, the European Topic Centre on Sustainable Consumption and Production, internal working documents of EUROSTAT and the EU Commission as well as national/regional WMPs. Where available also WPPs were screened.

The screening results confirmed the assumption of large differences within the EU-27 with regard to treatment of municipal waste, compliance with the WFD and Landfill Directives and application of legal or economic instruments as well as planning quality.

For each criterion two, one or zero points could be achieved, leading to a maximum of 42 points for all criteria. The methodology includes weighting of results for three selected criteria related to the application of the treatment options recycling, energy recovery and disposal of municipal waste.

The screening showed three groups differing in performance as follows:

1. A first group includes the ten **MS that are performing above average** achieving between 31 and 39 points. The group includes AT, BE, DK, DE, FI, FR, LU, NL, SE and UK. The MS are above average performing as regards the majority of key elements essential for good waste management – especially with regard to waste treatment, status and development of recycling of municipal waste, existence of restrictions or bans and total typical charges for landfilling municipal waste. All of these countries provide for complete collection coverage, sufficient treatment capacity and fulfilment of the targets related to biodegradable waste going to landfills. Further improvements in these MS could include the extended use of pay-as-you-throw systems which for most only reach regional coverage. Minor deficits were identified with regard to the planning of future capacities and the compliance with technical requirements. This group of MS especially faces problems with decoupling waste production from growing consumption. Furthermore, not all MS of this group have already implemented waste prevention in environmental policies.
2. The second group consists of five **average performing MS** achieving an overall score between 19 and 25 points, consisting of ES, HU, IE, PT and SI. This group of MS shows fairly deficits: not all households are connected to waste collection, planning of future treatment capacity is not sufficient and waste prevention yet is not on the political agenda. Furthermore, these MS show below average performance in the increase of recycling of municipal waste, treatment of municipal waste in accordance with the waste hierarchy, and the MS do not make sufficient use of economic and legal instruments to move up the waste hierarchy. Two MS of this group still need to achieve full compliance of their non-hazardous waste landfills, including fulfilment of the targets related to biodegradable waste going to landfills. The deficits in waste management are reflected by ongoing infringement procedures and court cases for almost all MS of this group.
3. The third group includes the twelve **MS with the largest implementation gaps** achieving an overall score between 3 and 18, including BG, CY, CZ, EE, GR, IT, LT, LV, MT, PL, RO and SK. This group of MS shows severe deficits within all criteria including waste prevention policies (only PL has included a WPP chapter in the current WMP); the below average performance is also reflected in the lack of applying economic and regulatory instruments to divert waste from landfill and insufficient adaptation of existing infrastructure to EU requirements. These MS are highly depending on landfilling, other treatment options are rarely in place. Landfilling is generally not restricted or banned for municipal waste and therefore still a large amount of biodegradable waste is disposed of in landfills. In half of these MS not all households are served by municipal waste collection. Four MS have not increased the recycling of municipal waste at all, and another four could achieve only a moderate increase in recycling from 2007 to 2010. Furthermore, undercapacity of treatment is most likely in half of these MS. None of these MS has included a forecast on waste treatment and capacity in their WMP. If a forecast is included, it is limited to estimations of waste generation.

Results for MS with the largest implementation gaps

- **GR** (overall score of 3) showed the largest implementation gaps. Deficits are found in all areas of the management of municipal waste. Points could be achieved only for the decoupling of waste generation (which however might be based on economic crisis) and for a reported full collection coverage of municipal waste. For all other criteria the lowest score of 0 had to be applied.

- **BG** (overall score of 8) in the majority of criteria reached 0 points. Better scores were reached for decoupling, achieving the targets related to biodegradable waste sent to landfills and related ratio as well as for a low number of infringements and no cases going to court.
- **MT** (overall score of 9) also shows deficits in all kind of waste management issues. Points were achieved for five criteria (increase of recycling of municipal waste, full collection coverage, compliance of non-hazardous waste landfills as well as low number of infringement procedures and no court cases.
- **LT** (overall score of 9) has major constraints in fairly all issues of waste management. Exceptions are the existence of restrictions for landfilling municipal waste and the application of pay-as-you-throw systems as well as a moderate increase in recycling of municipal waste from 2007 to 2010. Also for LT no infringement procedures or court cases are reported. Further, the waste generation of LT is not growing as fast as the consumption, leading to further points in scoring.
- **CY** (overall score of 11) in the majority of criteria reached zero points. However, average or good scoring could be achieved for an average recycling rate, a considerable increase of recycling of municipal waste, the quality of forecast on waste generation included in the WMP and for full collection coverage. Further neither infringements nor court cases have been issued.
- **RO** (overall score of 11) for the majority of criteria shows major deficits in waste treatment according to the hierarchy and compliance with the Landfill Directive, the application of economic and legal instruments and waste management planning as well as prevention policy. However, better scores are achieved for decoupling waste generation from consumption, a moderate increase of recycling of municipal waste from 2007 to 2010, good information on waste generation and referring treatment capacity and for the quality of forecast of future waste generation and for an average rate of biodegradable waste disposed of at landfills, compared to other MS. Neither infringements nor court cases have been reported.
- **LV** (overall score of 14) achieved a good or average score for nine criteria. Major deficits comprise landfilling being the major treatment option including a high share of biodegradable waste going to landfills, insufficient collection coverage and the absence of pay-as-you-throw-systems for municipal waste. Further, the quality of forecast on waste generation and referring capacity is not sufficient. Waste prevention is not yet an issue on the political agenda. Nevertheless, LV got high scores for a relatively low waste generation compared to consumption, for good information on waste generation and referring treatment capacity and for neither having infringement procedures nor court cases. All non-hazardous waste landfills are reported to be compliant.
- **IT** (overall score of15) reached average or good scores for half of the criteria (nine criteria). Deficits in waste management performance were identified and related to all criteria on waste management planning, non-compliant landfills for non-hazardous waste and decrease of municipal waste recycling in the last years. No national statement was submitted on request by the competent authority. Nevertheless, information extracted from the Implementation Reports and Awareness Raising Report confirmed that in certain regions of Italy undercapacity exists and can be expected for future as well. Further, zero points applied as no decoupling of waste generation is reached and no WPP or equivalent is in place. The situation is mirrored by the highest number of infringement procedures regarding the WFD and Landfill Directives which were all brought to court. However, IT is performing

average in several aspects (e.g. energy recovery and recycling, adoption of restriction for landfilling of municipal waste, introduction of PAYT, and average ratio of biodegradable waste going to landfills). The full score was applied for the total typical charge for landfilling municipal waste which is above the EU average, for the fulfilment of the reduction target on biodegradable waste going to landfills and for a reported full coverage of collection of waste from households. It has to be noted that there are large divergences between the northern and the southern part of Italy. As the northern part is well performing in several issues, the south has large problems, including problems of waste collection and high dependency on landfilling.

- **EE** (overall score of 17) reached average or good scores for twelve of 18 criteria. Below average performance was identified as regards recovery and disposal rates, development of recycling from 2007 to 2010, collection coverage, forecasting in the WMP as well as the absence of waste prevention policy. Average scores were achieved for the amount of municipal waste recycled, existence of restrictions for landfilling municipal waste, total typical charges for landfilling and the introduction of regional PAYT systems, low number of infringements and court cases as well as quality of projections for future waste generation and treatment. In addition, the rates of biodegradable waste sent to landfill are average. The full score was applied for decoupling, available treatment infrastructure, compliance of non-hazardous landfills and fulfilment of the reduction targets of the Landfill Directive.
- **SK** (overall score of 17) got average or good score for the majority of criteria. Major deficits include the below average performance in municipal waste treatment (low recycling and high disposal rates), a low typical charge for the disposal of municipal waste into landfills and deficits in future planning. A WPP or equivalent is not yet in place. For several aspects Slovakia reached a medium score including rate of recovery, moderate increase of recycling from 2007 to 2010, existence of restrictions for landfilling municipal waste, the introduction of regional PAYT, compliance of existing landfills for non-hazardous waste, rate of biodegradable waste going to landfills and low number of infringements and court cases. The full score was allocated for decoupling, collection coverage and available treatment capacity and fulfilment of reduction targets for biodegradable waste going to landfills.
- **CZ** (overall score of 18) could achieve average or good score for eleven criteria. Deficits are found with regard to missing waste prevention policies, low recycling rates of municipal waste and for not having in place restrictions for landfilling municipal waste. Also the WMP does not include any information on future waste generation and treatment capacity. Further, the reduction targets on biodegradable waste going to landfills are not met; in comparison with the other MS larger amounts of this waste are landfilled. For several aspects a medium score was reached (average recovery and disposal rate, medium total charge for landfills, regional PAYT systems, compliance of landfills and infringements procedures). The full score was allocated for decoupling of waste generation from consumption, a considerable increase of recycling of municipal waste, complete collection coverage for household waste and available treatment capacity. No infringement procedures were brought to court.
- **PL** (overall score of 18) reached average or good scores for the majority of criteria (twelve criteria). Performance below average was identified with regard to the recovery rate, collection coverage as well as missing future planning on treatment capacity and forecasting. Further, the targets of the Landfill Directive are not met and in comparison with other MS larger amounts of biodegradable waste are sent to landfill. Recycling, however, is a growing treatment option, and an average score is achieved. Landfilling rate is also scored average. Further, restrictions for the landfilling of municipal

waste were introduced, medium costs for landfilling are charged and PAYT systems are implemented on a regional level. The vast majority of non-hazardous landfills comply with the requirements of the Landfill Directive. Only one infringement procedure was issued. In addition, waste generation is not growing as fast as the consumption indicator. Full score was given for a chapter on waste prevention included in the WMP, a considerable increase in recycling of municipal waste, available treatment capacity and the absence of court cases.

Within the group of these twelve MS with the largest implementation gaps, it can be clearly distinguished between six MS showing major deficits for all important elements of waste management and six MS with a better performance.

GR, MT, BG, CY, LT and **RO:** The MS of this group show the highest landfill rates within EU 27. In most of these MS a very high amount of biodegradable waste is still landfilled, for some MS even with growing rates. Some of these MS could only achieve better scores for the absence of infringement procedures and related cases, for the decoupling indicator, for moderate to significant increase of recycling municipal waste and for reported full coverage of households to collection systems.

IT, LV, CZ, SK, EE and **PL:** This group is formed by MS which show deficits in waste management especially regarding the waste management planning of future waste generation and treatment capacity as well as waste prevention. Further, still a high amount of biodegradable waste is landfilled. Also half of these MS do not have a collection system for municipal waste covering all households. Nevertheless, better performance is given for treatment of waste in accordance with the waste hierarchy – the MS are not fully depending on landfilling anymore and start with the establishment of an alternative infrastructure (except of LV which has one of the highest disposal rates within EU 27 and high shares of biodegradable waste). Four MS of this group could achieve moderate to considerable increase in recycling of municipal waste. The existing non-hazardous landfills are mostly compliant with the EU requirements. Those MS apply legal and economic instruments to divert municipal waste from landfills. In general, they have introduced first restrictions for landfilling municipal waste, they apply a medium level of typical charges for landfilling MSW and they have implemented PAYT at regional level. Further, this group provides proper information on actual waste generation and existing treatment capacity in their WMPs.

Further it shall be noted that HU and **IE** are already counting for the average performing MS but both achieve a score of 19, which means they only reached one more point in comparison to CZ /PL.

- **HU** especially shows deficits with regard to the application of restrictions for landfilling municipal waste, low total typical charges for landfilling municipal waste, insufficient collection coverage, available treatment capacity and all aspects with regard to waste management planning (currently, no national or regional WMP is in place) as well as waste prevention policy.
- **IE** has in particular problems with the fulfilment of the reduction targets for biodegradable waste going to landfills, insufficient collection coverage and decoupling. This is reflected by a high number of infringement procedures that were issued and brought to court.

  However, both HU and IE show in particular average performance as regards the usage of treatment options in accordance with the waste hierarchy. The MS are not solely depending on landfilling, and recycling is a growing option.

Table 3: Overview of scoring of each criterion and overall score for each Member State

Criterion / EU MS	1.1 Decoupling	1.2 WPP	1.3 Amount of municipal waste recycled	1.4 Amount of municipal waste recovered (energy recovery)	1.5 Amount of municipal waste disposed	1.6 Development of municipal waste recycling	2.1Existence of ban/restrictions for the disposal of municipal waste into landfills	2.2 Total typical charge for the disposal of municipal waste in a landfill	2.3 Existence of pay-as-you-throw (PAYT) systems for municipal waste	3.1 Collection coverage for municipal waste	3.2 Available treatment capacity for municipal waste	3.3 Forecast of municipal waste generation and treatment capacity in the WMP	3.4 Existence and quality of projection of municipal waste generation and treatment	3.5 Compliance of existing landfills for non-hazardous waste	4.1 Fulfilment of the targets related to biodegradable municipal waste going to landfills	4.2 Rate of biodegradable municipal waste going to landfills	5.1 Number of infringement procedures – WFD and Landfill Directives	5.2 Number of court cases – WFD and Landfill Directives	Overall score
AT	0	2	2 D	2 D	2 D	2	2	1	2	2	2	2	2	2	2	2	2	2	39
NL	0	2	2 D	2 D	2 D	2	2	2	1	2	2	2	2	2	2	2	2	2	39
DK	0	0	2 D	2 D	2 D	2	2	2	1	2	2	2	2	2	2	2	2	2	37
DE	1	0	2 D	1 D	2 D	2	2	2	2	2	2	2	1	2	2	2	2	2	36
SE	1	2	2 D	2 D	2 D	2	2	2	1	2	2	0	0	1	2	2	2	2	35
BE	1	2	2 D	2 D	2 D	2	2	2	1	2	2	0	0	2	2	2	1	1	34
LU	0	0	2 D	2 D	2 D	2	2	2	1	2	2	0	0	2	2	2	2	2	33
UK	1	2	2 D	1 D	2 D	2	0	1	1	2	2	2	1	1	2	1	2	2	32
FI	1	2	1 D	2 D	1 D	0	1	1	2	2	2	2	1	1	2	2	2	2	31
FR	1	2	1 D	2 D	2 D	1	1	1	1	2	2	2	1	1	2	2	1	1	31
SI	2	0	2 D	1 D	1 D	2	1	2	2	0	2	0	0	0	2	1	1	2	25
ES	2	0	1 D	1 D	1 D	1	0	1	1	2	2	0	0	1	2	1	1	1	21
PT	0	2	0	2 D	1 D	1	0	0	0	2	2	2	2	2	0	0	1	1	21
HU	1	0	1 D	1 D	1 D	2	0	0	1	0	0	0	0	2	2	1	2	2	19
IE	0	2	1 D	1 D	1 D	1	1	2	1	0	2	2	0	2	0	0	0	0	19
CZ	2	0	0 D	1 D	1 D	2	0	1	1	2	2	0	0	1	0	0	1	2	18
PL	1	2	1 D	0 D	1 D	2	1	1	1	0	2	0	0	1	0	0	1	2	18
EE	2	0	1 D	0 D	0 D	0	1	1	1	0	2	0	1	2	2	1	1	1	17
SK	2	0	0 D	1 D	0 D	1	1	0	1	2	2	0	0	1	2	1	1	1	17
IT	0	0	1 D	1 D	1 D	0	1	2	1	2	0	0	0	0	2	1	0	0	15
LV	2	0	0 D	0 D	0 D	1	1	1	0	0	2	0	1	2	0	0	2	2	14
CY	0	0	1 D	0 D	0 D	2	0	0	0	2	0	0	1	0	0	0	2	2	11
RO	2	0	0 D	0 D	0 D	1	0	0	0	0	2	0	1	0	0	1	2	2	11
LT	2	0	0 D	0 D	0 D	1	1	0	1	0	0	0	0	0	0	0	2	2	9
MT	0	0	0 D	0 D	0 D	2	0	0	0	2	0	0	0	2	0	0	1	2	9
BG	2	0	0 D	0 D	0 D	0	0	0	0	0	0	0	0	0	2	1	1	2	8
GR	1	0	0 D	0 D	0 D	0	0	0	0	2	0	0	0	0	0	0	0	0	3

Note: Scores for the criteria 1.3, 1.4 and 1.5 (marked with '**D**') are doubled for overall scoring.

The complete screening report is available in **Annex 4**.

4 Selection of Member States

Based on the results obtained from the screening of waste management performance, the following MS were selected to be considered for the preparation of factsheets and roadmaps (see Figure 2): **Bulgaria, Czech Republic, Greece, Estonia, South Italy, Lithuania, Latvia, Poland, Romania, and the Slovak Republic.**

Cyprus and Malta were among the ten MS with the largest implementation gaps. Due to their island state status and specific circumstances in relation to waste management and priorities of the Commission, they will be addressed by measures outside of this project. The consultants further suggest addressing other MS with similar initiatives, most relevant for additional actions are Hungary and Ireland based on the screening results.

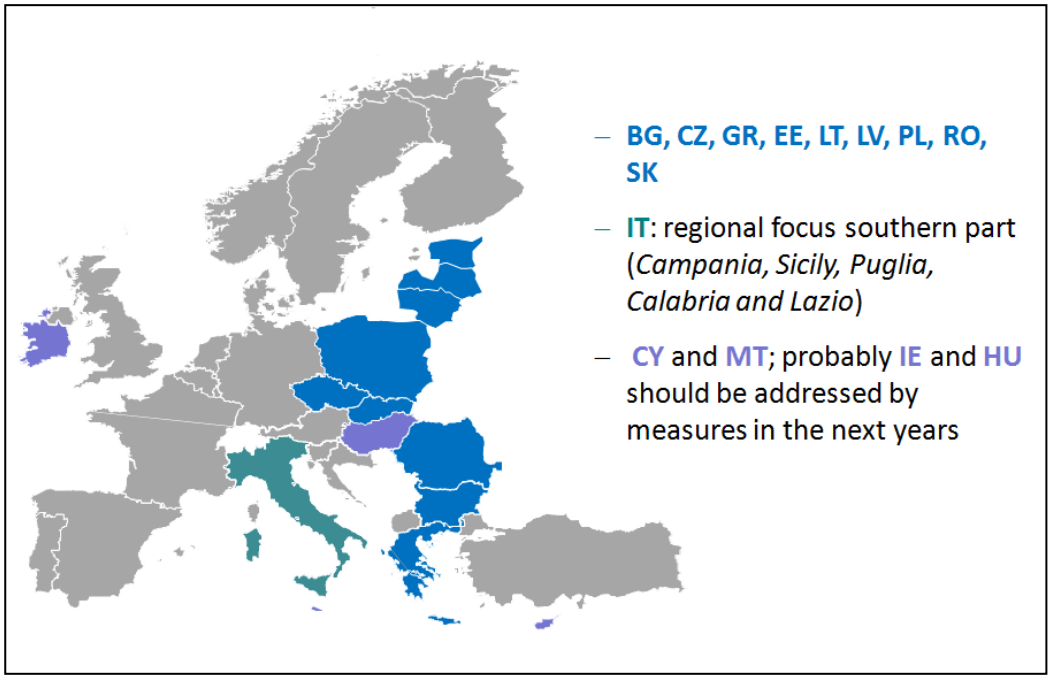

Figure 2: Selection of the ten Member States

5 Country factsheets

5.1 Content

Detailed background information on municipal waste management (including bio-waste and packaging waste) is compiled in country factsheets. The factsheets serve, together with the in depth analysis of the problems and their reasons, as a basis for the elaboration of the roadmaps (i.e. recommendations on how to address identified problems).

A great variety of information sources (EUROSTAT, EC reports, EC implementation reports, EEA reports, EIONET information, other available data bases and MS specific information (e.g. WMPs and information available on national websites) were used to develop a comprehensive overview of the actual waste management situation in each MS.

The factsheets include information on:

- Recent achievements;
- Population and geographical particularities;
- Features of the national waste management system (competent authorities, state of awareness, the informal sector, the occurrence of fly-tipping);
- National and if applicable regional legislation;
- National and if applicable regional WMPs in place;
- Instruments applied in the field of municipal waste and packaging waste (including legal, economic/fiscal, administrative and informative instruments);
- Statistical data on waste generation and treatment and the fulfilment of specific targets;
- Information on collection and treatment facilities and infrastructure;
- Information on infringement procedures;
- Next plans steps planned by the Competent Authority; and
- Complete information source used for the elaboration of the factsheet.

All final country factsheets are included in **Annex 5**.

5.2 National waste management situation in the ten Member States

5.2.1 Bulgaria

Administrative structure: The Ministry of Environment and Water (MoEW) is responsible for the development and implementation of the national waste management policy. The MoEW performs some of the activities by the Executive Environmental Agency (EEA) and a network of 16 Regional Inspectorates of Environment and Water (RIEW) controlling the implementation in the 55 waste management regions, set by the National Waste Management Program (2009- 2013). However, limited enforcement capacity of the Inspectorates will make closing all of the 200 non-compliant dumps challenging. Under the new

mechanism for development of infrastructure with the support of the OP Environment 2007- 2013, the funds for regional investments are now being allocated by central level decision making. The 264 municipalities also play an important role and the Regional Municipal Associations (RMA) are responsible to implement the national waste management policy.

Waste generation and collection: The total amount of municipal waste generated was 3,091 kt/y in 2010, (410 kg/year and capita). The Waste Management Act obliges the municipalities to deliver service for collection of MSW. The collection coverage was about 98.2% in 2010. In most cases, the activities for waste collection are performed by private operators which are selected under the Public Procurement Act. Each municipality established its own collection scheme. There are no systems for separate collection of bio-waste. Typically, there are three collection bins for metal and plastic, paper and glass. Settlements with a population higher than 5,000 inhabitants are obliged to contract with an authorised RO. Since December 2011, 215 municipalities have been covered (~84 %), whereas an increasing number of municipalities (also smaller ones) have signed contracts.

Policy instruments applied to move up the waste hierarchy: BG has introduced intermediate targets up to 2013 for waste recycling and recovery (i.e. 33 %). A landfill tax has been introduced to municipal waste starting from 1.5€/t in 2011 and increasing to 17.5 €/t in 2014. The waste management fees for citizens set by the Municipalities are currently based on the value of the real estate and included in municipal taxes and are therefore not taking into account the generated waste quantities. However, legal bodies (companies, institutions, hospitals, etc.) are able to optimize the waste management fee by declaring the number of containers in use and the proposed collection frequency. There is an on-going project for the development of regulations on bio-waste management and establishment of a system for ensuring quality. The EC is referring BG to the EU Court of Justice for failing to meet the December 2010 deadline to transpose the WFD. The Waste Management Act has been voted in the Parliament in July 2012.

Waste treatment: Nearly 100 % of municipal waste was landfilled in 2010 (the highest rate in the EU-27). At present, 32 regional landfills are in operation and 5 under construction (one for Sofia). Some areas are served by 124 active, non compliant landfills (official deadline 16th July 2009 not met). However, recycling of especially packaging waste increases and 29 separation facilities exist; another 12 are planned with funds from OP. The recycling market is very active and there is sufficient capacity for recycling of cardboard/paper, plastic, glass and metal. Two MBT plants have been constructed in Varna (140,000 t/y) and Plovdiv (125,000 t/y) under PPP; an MBT and a compost plant for Sofia is under tender procedure. There is no waste incineration, whereas some co-incineration takes place. The biodegradable waste going to landfills in 2008 was 70.3% (compared to the 1995 figure).

5.2.2 Czech Republic

Administrative structure: The competent authority for national waste management issues is the Ministry of Environment (MoE) developing the national WMP. The current WMP (2003-2013) is under revision; however it included ambitions targets reflecting the EC targets and going beyond. Regional WMPs are elaborated by 13regions plus the city of Prague also responsible for the permitting/registration of installations [CZ WFD 2007-2009]. Monitoring, controls and inspections are in the responsibility of the Czech Environmental Inspectorates and 10 local inspection offices which can impose fines. Since 2006, practical implementation lies in the responsibility of the 6,251 municipalities and communal environmental offices/inspectorates[MoE 2012d].As regards municipal waste collection, private industry

is increasing (private market share >60 %), there exists some joint ventures/public private partnership (PPP), involvement of foreign companies (by associated companies). Treatment facilities were established in particular by private companies and investments [RETech 2009].

Waste generation and collection: According to [EUROSTAT 2012b], the total amount of municipal waste generated is 3,334 kt/y, which corresponds to 317 kg/y per capita. Taking into account data from the MoE which is the main data source for reporting to DG Environment including company waste similar to municipal waste, a realistic figure would be 5,362 kt/y and 510 kg/y per capita. All inhabitants are covered by door-to-door waste collection services for mixed unsorted municipal waste [EUROSTAT 2010]. So far, no door to door collection systems are in place for waste sorted at source. The system of source separation is growing and is regionally well established for packaging waste. According to [CZ WMP 2003-2013] and [CZ FoE 2012] 90 % of the population is involved in separate collection systems, civic amenity sites for the collection of all kinds of municipal waste streams provided by bring systems (containers), according to [CZ EKOKOM 2012] rate is 99 %. As the walking distance to containers has been reduced (average distance from households to nearest collection point is about 100m [CZ EKOKOM 2012]) and the number of containers has increased the total amount of recycled packaging waste has grown significantly and is at very high performance. Also the infrastructure of civic amenity sites is implemented and the annual waste fee includes this services, thus citizens can deliver special wastes (furniture, bulky waste, hazardous waste, WEEE etc. free of additional charge)[CZ CEI 2012]. Cost of separate collection is with 6 €/capita per year below EU average. Cost of collection including sorting and recycling is less than 100 €/t, even achieving more than 50 % plastic recycling rate.

EPR systems are well implemented. Especially paper/cardboard and glass collection seems to be successful. Limited collection is still provided for bio-waste, which consequently leads to low composting rates. However, it is under consideration that from 2014 on municipalities are obliged to provide separate collection systems for compostable municipal waste [CZ MoE 2012b]. However, details and enforcement schedule are not communicated yet [CZ FoE 2012]. Besides, it should be discussed whether limitations for metal and according to [CZ EKOKOM 2012] paper waste separation and recycling exists. Deposit-refund systems for glass bottles have been introduced already in 1950 [OECD/EEA 2012. Further, the deposit on returnable packaging is set at a uniform amount for certain types of returnable packaging. Producer responsibility schemes (Green Dot systems) have been introduced for packaging waste which is based on a producer fee scheme. The fee contributes financially to the collection, sorting and reprocessing of packaging waste, however, no information is available whether all costs are covered.

Policy instruments applied to move up the waste hierarchy: Biodegradable and/or compostable waste can be landfilled only as a part of the mixed municipal waste. However, further restrictions or a ban for biodegradable waste or other waste fractions are not in place. A strategy on bio-waste reduction and quality standards for composted materials are in place [CZ MoE 2012b]. A landfill tax has been introduced in 1992 and is about 20 €/t. According to [CZ MoE 1012b], the gate fees currently range from 32 to 48€/t. PAYT systems are implemented on a municipal level, with the legal possibility for municipalities to establish PAYT as a part of the municipal waste management. According to the MoE, the exact number of municipalities providing PAYT systems is not known [CZ MoE 2012b], [EC 2012]. However, according to the information provided by [CZ FoE 2012], around 10-15 % of the municipalities are covered by PAYT.

Waste treatment: The Czech Republic is self-sufficient in waste disposal [CZ WMP 2003-2013]; [BiPRO 2012b]. The main treatment option for municipal waste is still landfilling (67.9 % [EUROSTAT 2012b] 60 %

[CZ MoE 2012b]). The disposal rate is considerably higher than the EU-27 average (38.2 %). With 14.2 % [EUROSTAT 2012b] 24.3 % [CZ MoE 2012b] the recycling rate is notable. The target of the Landfill Directive related to biodegradable municipal waste going to landfills was achieved in 2010 [CZ MoE 2012].All non-compliant landfills were closed by 2009. There are 148 compliant landfills for non-hazardous waste [CZ MoE 2012b]. Further, three incinerators for mixed municipal waste with energy recovery with a total capacity of 654 kt/y (20 % of municipal waste could be treated in these facilities) and several installations for recycling are available. Taking into account the municipal waste amount of 3,334 kt [EUROSTAT 2012b] (5,362 kt [CZ MoE 2012a]); treatment capacity other than landfilling needs to be expanded significantly. Regarding the treatment of bio-waste, there are 239 composting plants (mostly with low capacities), 52 community composting facilities and 10 biogas plants accepting waste [RETech 2009],[CZ MoE 2012b].

5.2.3 Estonia

Administrative structure: The competent authority for national waste management issues is the Ministry of Environment (MoE). The national WMP is developed by the MoE. The local WMPs are elaborated by each of the 226 responsible municipalities, which are organised in 15 counties; however the regional governmental level is missing [Ragn Sells 2012]. The municipalities are very small (most of them have in average less than 2,000 inhabitants) and few co-operations exist so far [EE MoE 2012].

Waste generation and collection: The total amount of municipal waste generated is only 417 kt and 311 kg per capita which is far below the EU-27 average (502 kg), [EUROSTAT 2012b]. By now nearly all inhabitants should be covered by municipal waste collection services[9]. It is estimated that only about 1% ends up in dump sites and/or is illegally burned [EE MoE 2012]. The system of source separation is growing slowly and is well established for packaging waste, especially glass and plastic bottles (EPR deposit-systems) and paper [ETC_RWM 2008]. Producer responsibility (EPR) systems are in place, but still lack transparency for some major waste streams (i.e. the substantial control from behalf of the producers, who actually pay the EPR systems recovery fees, is nearly missing), and public supervision over the EPR schemes activities and reported achievements on recovery targets. Separate collection of biodegradable kitchen waste is voluntary for municipalities and introduced via pilot projects.

Policy instruments applied to move up the waste hierarchy: A landfill ban for untreated waste was introduced in 2004. Since 2008 it is prohibited to accept or deposit unsorted municipal waste in landfills [EIONET 2009]. A landfill charge was introduced in the beginning of 1990s, but was on low level until 2005. The typical charge for landfilling non-hazardous waste (including municipal waste) is 50 to 55 €/t [EC 2012], [EE MoE 2012a]. A national system similar to a PAYT scheme was established (municipally organised collection model) favouring separate collection of some waste streams [EC 2012f].

Waste treatment: Estonia is self-sufficient in waste disposal [EC 2012b]. The main treatment option for municipal waste is still landfilling (76.5 % in 2010). The situation improved considerably due to implementation of new technologies for waste treatment in 2011. The new statistical data show that landfilling has dropped to 57.3 % [EE MoE 2012], however, still remaining significantly above the EU average rate. The target of the Landfill Directive related to biodegradable municipal waste going to

[9] In 2010, according to data from Eurostat approximately 79 % of the population was connected to waste collection services, predominantly in urban areas. However, this data was collected originally in 2001 and repeatedly reported for all subsequent years without updating. The estimated current coverage rate is ca. 95% [EE MoE 2012].

landfills was achieved in 2009 already for the 2013 target. In recent years considerable financial investments were made into infrastructure in the waste sector. All non-compliant landfills were closed by 2009 and replaced by five compliant landfills for non-hazardous waste [EC 2012b]. At present, there is strong lobbying for the introduction of technologies for energy recovery from waste. In 2010/2011, two MBTs were built (aiming to produce RDF from municipal waste) with the total capacity of 250 kt/y. One incinerator is currently under construction and shall start operation in 2013. The total capacity of these facilities would cover more than the treatment capacity needed for municipal waste. A shift from landfilling to incineration with energy recovery is expected in the next years [EE MoE 2012]. For some waste types, the recycling capacity already exists but cannot be used completely due to poor quality of separate collection [EE MoE 2012a]. Paper and metal are mainly exported for recycling, as well as some plastic materials due to higher prices outside the EU. Overcapacity for composting facilities was reported [EE MoE 2012].

5.2.4 Greece

Administrative structure: The Ministry of Environment, Energy and Climate Change (MEECC) is responsible for the development and implementation of environmental policy at the national level. It is responsible for policy making, national planning, technical matters, as well as licensing of waste treatment facilities. In addition, 13 Administrative Regions represent the second level of local self government, responsible for licensing and elaborating waste master plans. The implementation of the objectives of the Regional WMP lies within the territorial jurisdiction of the respective 13 Regional Waste Management Associations (RWMA). Municipalities are responsible for some aspects of planning [EEA 2010b]; [RETech 2009].

Waste generation and collection: In 2010, the total amount of municipal waste generated was 5,891 kt, representing about 2 % of the total municipal waste generated within the EU-27. The total amount of annual municipal waste generated per capita corresponds to 460 kg/y which is lower than the EU27 average [EUROSTAT 2012b]. The collection coverage for municipal waste is 100 %, even in islands and remote rural/mountainous areas [EC 2012b]. The collection of packaging waste is done by bring systems [GR HERRCo 2012]. Kerbside collection of packaging waste is not common in Greece and generally only practiced for municipal waste other than packaging waste. Producer responsibility or equivalent systems in place are not able to cover the full costs of separate collection and recycling of main waste streams [EC 2012f]. No separate collection of biodegradable waste is applied. The recent economic situation in Greece has affected the waste management sector. The reduced consumption of products resulted in reduced budget for the Recovery Organisations to subsidise the negative balance of the recycling network (collection, transport and operation of recycling facilities). At the same time, municipalities experienced reductions in the required budget and personnel for the collection services, etc.

Instruments applied to move up the waste hierarchy: Currently, there is no specific tax on municipal waste going to landfills [EC 2012]. However, requirements for the introduction of a landfill tax have been recently adopted by Law 4042/2012, transposing the WFD. Starting from 2014, organizations/enterprises disposing untreated municipal waste into landfills will have to pay a landfill tax which is planned to start with the high rate of 35 €/t. It is envisaged to raise the tax annually by 5 €/t until 60 €/t is reached. The current landfill gate fees are on a low level (i.e. 10-48,5 €/t). No incentive systems to favour prevention and participation to separate collection (PAYT schemes) are in place [EC 2012] and no deposit refund

systems are applied. There are no restrictions for landfilling municipal waste.

Waste treatment: Greece is not considered to be self sufficient for disposal of municipal waste even if this was reported. It is estimated that sufficiency reaches 90 %. Landfilling is the most common method for waste management in Greece. Currently, 79 landfills for municipal waste are in operation, whereas 63 illegal dumpsites were recorded as still active. Landfilling is still the main treatment option (82.7 % in 2010). 28 large scale material recovery facilities are in operation [GR HERRCo 2012], whereas two recycling facilities are currently under construction [RWMP of Crete]; [RWMP of Ionian Islands]. Four MBT plants are in operation (Attica, Chania, Heraklion, Kefallonia) and additional installations are planned. New integrated waste management systems are planned to be constructed under PPP and operated from the private sector at: (a) Prefecture of Aitoloakarnania – Municipality of Agrinio, (b) Prefecture of Helia - Municipality of Ilida, (c) Region of Peloponnese, (d) Region of Western Macedonia and (e) Prefecture of Serres. Furthermore, IWMS are expected to enter into tendering phase in the next period through PPP for Region of Attica and Prefecture of Thessaloniki.

5.2.5 Italy (South)

Administrative structure: The State (Central Government, Ministry of Environment) defines general strategies and sectoral policies, adopting Waste Acts and Environment Acts. The National EPA (ISPRA) provides technical support to policy-making. Together with the National Observatory on Waste (ONR) it publishes the National Annual Waste Report. Regions are mandated to define WMPs and WPPs, although this is often "devolved" down to Provinces, in which case Regions only define the strategic provisions. Municipalities or aggregations of Municipalities (be they established by law as ATO, i.e. Optimal Territorial Unit in Regional or Provincial planning, be they voluntary agreements among different Municipalities), detain ownership ("*privativa*") of MSW (household + household-like waste), they are responsible for organization of waste collection systems, which they may run through dedicated services or Companies established on purpose ("in house" management); alternatively, they may tender out the waste collection service through public tenders.

Waste generation and collection: According to [MSW ISPRA Report 2012][10]**,** the total amount of municipal waste generated in SOUTH IT (data 2010) is 10,348 kt; in LAZIO it totals 3,431 kt. The foregoing gives a per capita generation of 495 kg (SOUTH IT) and 599 kg (LAZIO) respectively, similar and higher than the EU average. Waste collection basically covers 100 % of the population. Cleansing of areas affected by littering and fly tipping is covered by Municipal services, and waste thereby collected is fully defined as MSW. Waste management is established by law as a service of public interest; hence its collection is subject to strategic planning and to decisions taken by Municipalities (whom the primary responsibility for collection resides on). Collection of packaging waste is covered by same schemes and contracts related to Municipal Waste. Separate collection of packaging waste is common in North Italy, and fairly diffused in South Italy. Separate collection of biowaste is undergoing a fast growth (Italy is currently totalling more than 3.5 Mt separately collected organics from MSW), and is showing to be the main driver to increase separate collection rates.

[10] The latest MSW Report 2012 by ISPRA refers to data sets of 2010. The aggregated data sets herewith presented for SOUTH Italy include the following Regions: Campania, Puglia, Basilicata, Calabria, Sicilia, Sardegna, Abruzzo, Molise, the last three not specifically targeted by our survey. Lazio, which is covered in national statistics and in the ISPRA MSW Report in CENTRAL Italy, is therefore mentioned separately with dedicated data sets

Waste treatment: In Italy the extent of self-sufficiency at Regional level was 99.8 % (2007) and 99.4 % (2008). No figures have been made available for 2009 yet [EC 2012b]. Some waste is currently being shipped abroad from Campania in order to help tackle the local waste crisis. In SOUTH IT and LAZIO, treatment infrastructure of municipal waste is based on:

- pre-treatment facilities (mostly MBT sites), respectively 53 and 8 operating plants,
- composting facilities, respectively 49 and 12 operating plants,
- incinerators, respectively 9 and 4 plants and
- landfills, respectively 80 and 10 sites.

Processing and recycling of packaging waste is typically subject to dynamics of globalization. Therefore, a comparison of flows of collected materials vis-à-vis the consistency of industrial capacity is highly influenced (and distorted) by imported/exported tonnages. In any case, collected packaging waste is (mostly) given back to CONAI, which then refers to the network of industrial facilities (paper mills, glass factories, steel factories, etc.) processing separately collected materials together with primary raw materials.

Instruments applied to move up the waste hierarchy:

Legal instruments: In Regional and Provincial Plans, National provisions concerning targets, bans and restrictions apply, which includes the following key provisions:

- A (minimum) separate collection target of 65 %
- A target for preparation for recycling and reuse of 50 %
- An obligation on pre-treatment of waste going to landfills
- A ban on landfilling waste with high calorific value (LHI > 13 MJ/kg; although entry into force of this provision is still pending, since it has been postponed various times by the National Government)
- A packaging waste recovery target of at least 60 % (including “incineration with energy recovery”)
- A recycling target for various packaging materials of at least 60 % for glass, paper and board, 50 % for metals, 26 % for plastics, 35 % for wood

Besides, at national level, Decree 203/03 establishes an obligation on at least 30 % of “green procurement” (purchase of goods made of recycled materials) by Public Bodies.

Economic instruments: The reference Landfill tax is defined at Regional level. The tax varies according to other parameters established at Regional level, e.g. whether the waste has been pre-treated; the landfill tax is also subject to rebates for those areas (Municipalities, ATOs) achieving the separate collection targets. Pay-as-you-throw (PAYT) is currently implemented in some hundreds Municipalities, mostly in North Italy. In other Municipalities, a Waste tax applies, which is calculated on the surface area of the property. Separately collected packaging waste benefits from the crediting scheme managed by CONAI (National Consortium for Packaging); unit values vary according to the type of packaging and the purity of collected materials. Energy from anaerobic digestion, landfill gas and incineration is subsidized through the “Green Certificates” (renewable obligations). In the case of incineration, this applies only to 51 % of

the produced energy (which is the share considered as “renewable”).

5.2.6 Lithuania

Administrative structure: The Lithuanian Ministry of Environment (MoE) is the main institution responsible for legislation and administration in the field of waste management, coordinating the activities of the national, regional and local institutions and preparing the national WMP. The Environment Protection Agency organizes, coordinates and performs the state environmental monitoring, provides methodological help for Regional Environment Protection Departments (REPDs) in the environmental protection state control field, takes control, analyses and evaluates the implementation of environment protection state control, etc. [LT MoE 2012]. Regional waste management centres coordinate waste management in municipalities under their jurisdiction. There is an Association of Regional Waste Management Centres. Regional waste management centres are the legal entities established by several municipalities (private companies, no state institutions). Municipalities can cooperate in order to make their waste management system more efficient.

Waste generation and collection: The total amount of municipal waste generated in Lithuania is 1,253 kt/y. The generation per capita is 381 kg, which is considerably lower than the EU-27 average (i.e. 502 kg), [EUROSTAT 2012b]. Centralised waste collection services are provided for approximately 94 % of the population. The remaining population is provided with other forms of collection services (e.g. civic amenity sites). Currently, around 20,000 containers for recyclable materials and 77 bulky waste collection sites are available (70 are constructed using 2004-2006 EU funds; 45 bulky waste collection sites are planned to be constructed using 2007-2013 EU funds and 7 are already constructed). At the beginning of 2009, municipal waste collection services were provided by 104 companies [LT ECAT 2012b]. The majority of the costs for the collection and treatment of the main waste streams are covered by producers/importers [LT MoE 2012].

Instruments applied to move up the waste hierarchy: A ban on landfilling biodegradable waste from gardens, parks and greeneries is in place. A ban on landfilling of untreated waste is expected to be introduced in 2013 [LT MoE 2012]. Currently, no landfill tax is in place [EC 2011f], however, it is planned to introduce a landfilling tax when alternative waste treatment facilities are in operation [LT MoE 2012]. The draft document for the introduction of a landfill tax has been prepared. Presently, the average gate fee for landfilling is 16.26 €/t [Moora 2011]. Further, the Lithuanian MoE indicated that PAYT schemes are partly in place at the municipal level.

Waste treatment: Lithuania was not completely self-sufficient to dispose of municipal waste in 2009 (i.e. 67.8 %), [LT MoE 2012]. The main treatment option for municipal waste is disposal in landfills (94.5 %), [EUROSTAT 2012b], (86 % excluding export). 612 old landfills/dumpsites have been closed and replaced by 11 modern, regional landfills. Using EU structural support funds, further 189 old landfills/dumpsites are scheduled to be closed (remediated) [LT MoE 2012]. In general, alternative waste treatment infrastructure is limited. Municipal waste (EWC 200101, 200128, 200138 and similar) is incinerated with energy recovery (0.1 %), [LT MoE 2012]. Only a very small amount of municipal waste is recycled (3.8 %) and a negligible percentage is composted (1.7 %). Special bins for home composting are provided for owners of private houses almost in the entire country [LT ECAT 2012b]. 21 green waste composting sites have been constructed (13 using 2004-2006 EU funds; 8 using 2007-2013 EU funds) and it is planned to establish also 9 MBTs and 2 waste incineration facilities [LT MoE 2012].

5.2.7 Latvia

Administrative structure: Latvia is divided into 10 waste management regions. The competent authorities for waste management on national level comprise the Ministry of Environmental Protection and Regional Development (MEPRD) and its aligned institutions. Latvia is characterised by a centralised administration structure. However, local authorities have strong waste control and general influence on the waste management sector in their territory. The national WMP is developed by the MEPRD and its competent institutions. The regional WMPs are elaborated by the MEPRD in cooperation with municipalities [BiPRO 2007-2011]; [LV MEPRD 2012].

Waste generation and collection: The total amount of municipal waste generated in Latvia is 680 kt/y. The per capita generation is 304 kg which is considerably lower than the EU-27 average (502 kg), [EUROSTAT 2012b]. Approximately 85 % of the population is connected to municipal waste collection services [EUROSTAT 2010]. Latvian authorities are continuing to implement measures necessary to make separate waste collection services more accessible to households. Means from EU funds are obtained to further develop the required infrastructure [EC 2012b].

Instruments applied to move up the waste hierarchy: A landfill tax was introduced in 1995. Currently, the total typical charge for landfilling is 40 €/t of non-hazardous municipal waste (10 €/t landfill tax rate plus 30 €/t landfill gate fee). The tax rate for municipal waste increased over time [EC 2012], however, the typical charge still remains comparably low (average in EU-27 is about 80 €), [EC 2012f]. A natural resource tax on several types of resources was introduced in 1995 to promote well-considered use of resources. A number of awareness campaigns on waste collection and management for households, schools and industry were initiated [BiPRO 2007-2011]; [LV MEPRD 2012].

Waste treatment: Latvia has sufficient capacity to dispose of non-hazardous municipal waste [EC 2012b]. The main treatment option for municipal waste is still disposal in landfills (90.7 %), [EUROSTAT 2012b]. During the last years, more than 500 dumpsites have been closed, gradually recultivated and replaced by regional landfills. There are still dumpsites which are not yet properly closed [BiPRO 2007-2011], however, the MEPRD states that in 2012 all dumpsites are closed but not all of them recultivated. WMPs foresee that this is done within the next years. Latvia reported that all landfills comply with the Landfill Directive. The remaining landfill capacity was 19,270 kt [LV Landfill 2007-2009]. It is not planned to build new landfill, but to extend existing landfill capacities to their projected size [LV MEPRD 2012]. Alternative waste treatment infrastructure is rather limited. At present, there is no infrastructure for municipal waste incineration. Latvia has a well developed infrastructure for recycling of paper and cardboard packaging waste and has several polymer recycling facilities for PET, LDPE and HDPE [LV WMP 2006-2012]. There are several companies dealing with preparation of glass for re-use and recycling, but there are no recycling facilities for glass. The level of metal packaging waste collection and recycling is low, while collection and recycling of metal-containing waste is well developed [LV MEPRD 2012]. A high share of biodegradable waste is still landfilled [BiPRO 2012b], but some alternative treatment is already available (5 large scale composing facilities and 1 anaerobic digestion facility), [Moora 2011].

5.2.8 Poland

Administrative structure: The competent authority for national waste management issues is the Ministry of the Environment (MoE). The national WMP is developed by the MoE. The regional WMPs are

elaborated by each of the 16 Voivodships. Voivodships are further divided into counties and municipalities. General responsibility for enforcement of municipal waste management is within the responsibility of municipalities.

Waste generation and collection: The total amount of municipal waste generated is 12,038 kt making Poland one of the largest municipal waste producers among the EU-12. However, only 315 kg per capita is generated which is far below the EU-27 average (502 kg), [EUROSTAT 2012b]. By now about 80 % of the population is covered by municipal waste collection services [EUROSTAT 2010]. Illegal burning at households and illegal dumping is still occurring especially where collection of municipal waste is not available or not provided on the required frequency [ReTECH 2009]. The infrastructure for separate collection is still in the developing phase and needs further improvement, in particular in rural areas. Bio-waste is only collected separately in some municipalities (e.g. Elbląg, warmińsko-mazurskie voivodship). EPR or equivalent systems are in place, but limited for few waste streams. They are not able to cover the full cost of separate collection and recycling of the main waste streams [EC 2012].

Policy instruments applied to move up the waste hierarchy: A landfill fee for municipal waste was introduced in 2002, with a current level for residual municipal waste of 25 €/t in 2011 [EC 2012], [ETC/SCP 2012]. From 2007 to 2008 the fee was raised significantly to reduce the amounts landfilled. Since 2010 the fee level was not raised higher than the inflation rate and is not sufficiently high to promote alternative treatment options. Typical charges (tax + gate fee) for landfilling municipal waste range from 115 (28.13€) to 380 zł (92.94€), but mostly being about 200 zł (48.92€) [PL MoE 2012]. Restrictions on landfilling are not going beyond EU requirements; there is a ban on landfilling separately collected combustible waste [PL MoE 2012] which has little effect on the overall situation. PAYT schemes are implemented regionally [PL MoE 2012].

Waste treatment: Poland is self-sufficient in municipal waste disposal [EC 2012b]. The main treatment option for municipal waste is still landfilling (73 %). 610 landfills for non-hazardous waste were operating in 2010. The first reduction target for biodegradable waste going to landfill (75%) was set up for Poland to be achieved in 2010 (Poland was granted a transitional period on the basis of the Landfill Directive provisions).The Commission estimates on the basis of EUROSTAT data that the reduction target status was ca. 94 % in 2009 in comparison to 1995 [EC 2012a] and therefore the target is most likely not achieved in 2010 (fulfilment currently under revision). The MoE informed that the status was already 79 % in 2010 [PL MoE 2012]. In recent years investments were made into infrastructure and non-compliant landfills were closed and re-cultivated [EC 2012b]. However, illegal dumpsites still exist [ReTECH 2009], [PL MoE 2012]. In 2010 about 92 % of municipal waste was landfilled into landfills compliant with EU requirements [PL MoE 2012]. The development of infrastructure seems to be dynamic, but facing obstacles related to funding, administration and public omissions. New technologies for energy recovery from waste are foreseen to be comprehensively introduced. However, prognoses suggest that only some of the planned incinerators will be built. Investments are strongly focusing on MBT and RDF technologies. Recycling capacities for paper, steel and glass are sufficient; in this field the technologies are modern and compliant. Separate collection and sorting are challenges.

5.2.9 Romania

Administrative structure: In respect to waste management, Romania relies on agencies at three levels: the Ministry of Environment and Forests (MoEF); the National Environmental Protection Agency with its

regional and county branches (regional EPAs); the County Councils and municipalities. Beside the national WMP prepared by the MoE, eight regional EPAs prepare regional WMPs. County associations that comprise of municipalities and the County Council are responsible for managing waste infrastructure built under the Sectoral Operational Programme (SOP 1) and also for elaborating WMPs on county level. This function is delegated to the County Council, including contracting for investments and operation [WORLD BANK 2011].

Waste generation and collection: The total amount of municipal waste generated is 7,830 kt and 365 kg per capita which is below the EU-27 average (502 kg) [EUROSTAT 2012b]. Approximately 70 % of the population had access to municipal waste collection service in 2010 [EUROSTAT 2010] (increased now to 80-85 %). Most rural areas are lacking collection services. The separate collection for household packaging waste (PW) from the private sector is still poorly developed (23 % of total population). The "dual" system has been adopted for separate collection, namely a dry and a wet bin. The system will be enhanced with additional bins for three fractions (paper/ cardboard, metal/ plastic and glass), required by law. There is very limited bio-waste collection.

Policy instruments applied to move up the waste hierarchy: No landfill tax currently exists, but according to MoE it is expected to be introduced in 2013. Recovery Organisations are required to pay a penalty of 2 RON/kg to the Environment Fund (about 0.22 €), in case the annual recovery target for packaging waste are not met. Economic operators, who produce and/or market products in reusable packaging, have to apply a deposit system. Bags made of non-biodegradable material are charged with a tax of 0.2 RON (about 0.02 €) each. By amending the Environmental Fund Law in 2010 a target was introduced to reduce with 15% the amount of municipal waste that is delivered to landfill; In case of failure the public local authorities have to pay 100 lei/t on the difference.

Waste treatment: Self-sufficiency for disposal of municipal waste has been reported to be 100 %. This figure probably takes into account temporary storage of waste in view of disposal, since a number of landfills still have to be constructed under SOP. There are 80 non-compliant landfills officially operating, to be closed gradually until July 2017 (transition period). Practically all municipal waste is landfilling (98.7 %), one of the highest in EU. Recycling quota is only 1.3 %. There are 34 sorting plants (capacity ~500,000 t/y mainly hand-sorting); 47 are planned to be constructed (capacity ~1.3 Mio t/y). However, the effectiveness of selective collection is limited [Ernst & Young 2011]. Romania was granted derogation until 2013 for packaging waste target achievement. According to NEPA, the target for reduction of biodegradable waste in 2010 (four year derogation) disposed in landfills has been achieved (quality of data unknown). Waste treatment facilities in operation are still limited as Romania is currently implementing its integrated solid waste management system (ISWM) via EU funding and the SOP Environment 2007-2013. Out of the 39 waste management projects identified to be financed in the 2007-2013 programming period, 18 have an approved. The remaining are expected to be approved in 2012, but it is unknown whether they will be operational in the end of the eligible period (end of 2015). With the implementation of the SOP, there will be additionally 20 composting facilities (planned capacity ~200,000 t/y) and 17 MBT (planned capacity ~1.3 Mio t/y). The MBTs have been typically designed for a low cost "waste stabilisation". Currently, there is no waste incineration. Bucharest and Brasov municipalities plan two Waste to Energy (WtE) plants under PPP (expected to be operational in 2020).

5.2.10 Slovak Republic

Administrative structure: The competent authorities responsible for waste management comprise on national level the Ministry of Environment (MoE) with its regional and district branches. The country has a centralized organisation structure. Organisation of the waste collection services is the responsibility of the municipalities.

Waste generation and collection: The total amount of municipal waste generated is 1,809 kt and accounts for about 0.7 % of municipal waste generated within the EU. Total amount of municipal waste generated per capita accounts for 333 kg and is lower than the EU average. The Slovak Environment Agency presumes that the total waste amount is underestimated due to statistical problems. Slovakia reported 100 % collection coverage of municipal waste. But [Ernst & Young 2011] estimates that the collection system is 'leaky' and there is a gap between the quantity of waste collected and the estimated quantity of waste generated, although statistical errors probably also play a role. Since 2010, all municipalities are obliged to organise separate collection for paper, glass, plastics and metals [MoE 2011-2015]. But the effectiveness differs highly between municipalities, ranging from 10 % to 70 % separate collection [SK Priatelia Zeme - SPZ 2012]. The informal sector plays a significant role with regard to the collection of certain waste streams including bulky waste, WEEE and batteries, of which parts or substances hold a certain market and provide a significant source of income for the large share of the poor and marginalized social groups[11].

Waste treatment: According to [EC 2011g], [MoE 2012] and organisations APOH and SEWA, Slovakia has sufficient capacity to dispose of all types of waste generated within its territory, although ZMOS esteems a lack of incineration capacity. Available treatment of municipal waste is mainly landfilling, and there is still a substantial number of illegal dumpsites. Slovakia has two waste incinerators for municipal waste with energy recovery. Sufficient infrastructure is in place for the recycling of packaging waste and some other relevant waste streams [MoE 2011-2015], [SK APPOH 2012]. Nevertheless, recycling rates are low and economic instruments need to be applied to increase recycling. Main problems are the high level of illegal waste dumping and burning [Ernst & Young 2011], and the fact that landfilling is much cheaper than selective collection and recycling [SK CEPTA 2012].

Policy instruments applied to move up the waste hierarchy: In some municipalities a PAYT scheme has been implemented, although the fee is fairly low. Also a landfill charge is implemented, but this charge is also fairly low, and not high enough to divert more waste from landfills to alternative treatment [EC 2012]. The state of the general environmental awareness of the public is on a low level, both with regard to sound waste management as well as waste prevention [BiPRO 2008-2011]. Even within local authorities, people are not always aware of the environmental impact caused by waste dumping or burning. Few national awareness campaigns are organized by the MoE. Mostly the industry associations, authorized organisations and NGOs are active in this field and organize awareness raising campaigns [SK Priatelia Zeme - SPZ 2012].

[11] http://www.transwaste.eu/file/001347.pdf accessed on 27 February 2012

6 Roadmaps

The overall objective of the roadmap is to provide the MS an individual plan for improving their waste management situation by moving up the waste hierarchy. The roadmaps contain the main recommendations and an introduction text on the waste management situation in a MS based on the available background information (country factsheets). Further a ranking and deeper analysis of problems is displayed in an overview table.

Finally, the roadmap contains a comprehensive table (action plan) listing the identified problems and related measures/recommendations which can be applied in order to tackle the specific problems.

6.1 Overview and detailed description of implementation problems

The roadmaps (**Annex 7**) contain a specific section for the problem analysis and a detailed description for each problem as well as related reasons.

The deeper analysis of the MS implementation problems specifically concentrates on the assessment of the following core elements of the revised WFD:

- Waste hierarchy;
- Provisions for environmental sound waste management;
- Targets for reuse, recycling and recovery;
- Collection and separate collection;
- Sufficiency and adequacy of waste management infrastructure;
- Enforcement of waste legislation including implementation measures such as sufficient permitting and inspection measures.

The main problems encountered in MS through the screening are listed in the table below (in order of the elements assessed in the screening). In the country specific problem analysis the most severe problems in waste management are ranked and further specified. The list is non-exhaustive but contains all main problems which are addressed by the roadmaps.

No	Problem
1	Missing waste prevention measures and policy
2	Waste treatment largely diverting from the waste hierarchy
3	Incomplete coverage of households with regard to municipal waste collection
4	Undercapacity for treatment of municipal waste
5	Deficits in design and content of the WMP with respect to capacity planning
6	Incompliant landfills for non-hazardous waste
7	High shares of biodegradable waste going to landfills (possibly missing the reduction targets of the Landfill Directive)

6.2 Identification and analysis of reasons for problems

Analysis of specific aspects which are inhibiting appropriate and environmentally sound waste management comprise, in addition to the review of existing literature, WMPs, WPPs, statistical data, the review of national legislation, expert interviews with governmental and non-governmental stakeholders and targeted stakeholder consultations (see documentation of stakeholder involvement in each factsheet/roadmap). The stakeholder consultations and literature/sources used are documented in the reference list of each Roadmap.

Relevant information obtained during these reviews, interviews and consultations is documented and incorporated into national factsheets and/or roadmaps in order to create a complete overview of the waste management situation in a MS.

6.3 Main findings of the problem analysis at national level

- **Waste treatment largely diverting from the waste hierarchy:** Most of the MS are still highly relying on landfilling municipal waste and partly overcapacities exist. Huge efforts and progress were made by MS in closure and recultivation of illegal landfills over the past years and most incompliant landfills could be reequipped. However, in some MS illegal landfills still exist. There is a lack of modern collection and treatment infrastructure. Available funding should be better allocated and used to improve separate collection and prevention, reuse and recycling infrastructure.
- **Insufficient separate collection:** Most systems are in the (early) developing phase and only limited infrastructure is available to the public and households mainly for packaging waste and paper (lack of civic amenity sites, rarely door-to-door collection, often only voluntary bring systems available in urban areas). Generally, separate collection for bio-waste and other fractions is not yet available and need to be up-scaled. Further, the convenience of collection schemes in place need to be improved considerably.
- **High share of biodegradable waste going to landfills:** Most of the ten MS did not reach the reduction targets of the Landfill Directive. National strategies with specific measures on diverting biodegradable waste from landfill need to be enforced; source separate collection of bio-waste is the highest priority to improve its management and to make it available as a valuable resource.
- **Lack or poor use of economic instruments:** Generally low or no taxes are applied on disposal, MBT or incineration of (municipal) waste to make recycling an economic option. Further, the application of extended producer responsibility (EPR) schemes is limited to the legally required waste streams. Their control is a challenge for several MS as well as intransparent or monopolistic EPR schemes hampering optimal development. Most MS do not yet apply pay-as-you-throw (PAYT) schemes.
- **Problems with planning and practical implementation of WMPs:** Some MS have outdated WMPs in place and there is the need to update the documents according to new requirements of the revised WFD. In order to improve the planning, also more reliable data is needed and a better

overview of collection systems in place, available and planned treatment capacities available etc. In addition, measures and concepts on how to achieve the objectives and targets of the EU legislation should be included.

- **Deficits in enforcement, cooperation and communication.** In several MS there is a need for improving practical enforcement, inspections and control in order to ensure the practical application of legal provisions. In addition, there is need for harmonisation of systems and extended cooperation as well as for bundling capacities to have a coordinated approach and support for local authorities on waste management. There is often scope to improve guidance and awareness raising.

6.4 Policy instruments

In order to define priority policy instruments which are specifically suitable to tackle prevailing problems in MS an internal guidance document was elaborated. This document contains a set of measures and instruments to be included in the roadmaps. It describes the measures of different categories and gives general recommendations ('lessons learnt') under what conditions measures might be effective and how to promote/apply the measure. Further, the addresses of measures are indicated.

The selected MS face a number of challenges in waste management due to different and complex reasons. Problems are usually encountered as concerns the concept and successful implementation of waste policy instruments, which often involve institutional challenges (financial and human resources). Further, environmental and in particular waste policy may be only regarded as a minor issue of concern in comparison with other problems such as in the area of national economy, health system etc. Additionally, unsupportive legal environment and lack of clarity regarding the role of government and policy is prevailing which may result in ineffective policy, insufficient cooperation between national and regional authorities as well as lack of proper planning and reliable data.

The implementation of waste policy instruments included in the roadmaps are stage based (short, mid and long-term) and MS tailored, which takes cognisance of identified problems in their design and implementation, thereby considering the country specific circumstances. Each instrument has different aims as they may address different levels of the waste management hierarchy and different target groups (i.e. municipal waste as a whole or only single waste streams). Further, within the roadmap or as such, the instruments are not recommended or applied in isolation. In general, one policy intervention includes the application of several instruments and may be only successful with the integration of different instruments. In addition, the success of an instrument will be dependent on the appropriate definition of the instrument (theory) and its implementation in practice which is influenced by the behaviour of addressees and MS specific circumstances.

The policy instruments and measures proposed in the roadmaps comprise economic and fiscal, legal, administrative, informative instruments as well as infrastructural measures. In the document, only the instruments and measures that are estimated suitable, enforceable in the time stages given and most likely to improve waste management in the selected MS are described. Thus, the description below provides a short summary of instruments likely to be contained in the roadmaps rather than a full picture of possible instruments employed in waste policy and related application experiences throughout the EU.

Infrastructural measures included in the document comprise:

- Facilities for waste prevention (e.g. re-use centres);
- Facilities for preparing for re-use;
- Collection infrastructure and schemes;
- Pre-treatment facilities;
- Treatment facilities.

Further, two additional topics covered by the guidance are:

- Time scale and costs for implementation of instruments and measures;
- Funding opportunities from the EU.

The document was sent to ACR+ and the EEB for comments. The EEB provided comments which were considered for the final version of the document.

The respective document on "Guidance on measures for the preparation of roadmaps to improve waste management situation" is available in **Annex 6**.

6.5 Development of recommendations (action plan)

The roadmaps (**Annex 7**) contain a specific section with a set of measures to tackle the problems identified. The action plan includes the following sections:

- In the first section the problems identified are **numbered** and listed in ranked priority, starting with the most crucial problem of the MS and following then in a **ranked order**;
- The set of recommendations and possible measures to address the specific problem are listed in the column **proposals to address the problem**;
- In another section the **type of the instrument** is indicated;
- The **responsibility** to implement the measure is included for each measure;
- An indicative **timescale** for the implementation of the measure is given. As indication for an implementation schedule, four categories are applied being ad hoc (implementation within 3 months), short-term (1 year), mid-term (2.5 year), and long-term (2.5 - 10 years).
- **Cost estimations for implementation of instruments** are indicated if possible;
- **The estimated suitable available EU Funding** is indicated;
- **Achievable results/outcomes** are roughly estimated;
- A **priority scoring** of the measures is included to indicate which of the measures are expected to have the highest efficiency to address the problem; more specifically the scoring takes into account the priority ranking of the waste management options laid down in the five-step waste hierarchy. The priority scoring includes the ranking high priority (+++), middle priority (++) and low priority (+).

6.6 Main recommendations to improve national waste management systems

Based on the experiences made in other MS and the problems encountered, the recommendations generally comprise to:

- Introduce taxes on landfill/MBT/incineration to make recycling an economic viable option or if taxes are already in place to significantly increase these. Revenues from the taxes should be used to support separate collection, awareness raising and modern infrastructure, focusing on prevention, re-use and recycling.
- Establish/improve and control separate collection systems.
- Expand systems to door-to-door separate collection schemes as soon as possible and undertake pilot projects on separate collection to develop solutions for local circumstances.
- Initiate/intensify awareness raising and information designed for different target groups.
- Reform administrative structures and procedures to simplify administration of waste management, e.g. bundle capacities via inter-municipal associations and harmonise systems in place by providing guidelines on administrative and practical approaches.
- Support local authorities in setting up separate collection schemes (by incentives and/or penalties) and other central tasks (e.g. tendering procedures).
- Extend and improve the monitoring and transparency of existing EPR schemes via intensified inspection and enforcement activities, accompanied by guidance.
- Update national and regional WMPs including measures on how to achieve legally binding targets and objectives.
- Enforce national strategies on bio-waste management.
- Revise statistics by aligning reporting to EUROSTAT guidelines.
- Use EU funding to finance infrastructure and initiatives related to the first steps of the waste hierarchy.

The final roadmaps, including the problem analysis and proposed measures, are included in **Annex 7**.

6.7 Main challenges and recommendations per Member State

6.7.1 Bulgaria

For Bulgaria, the following key challenges and deficits have been identified:

- Waste management largely diverting from waste hierarchy - significant dependence on landfilling
- High share of biodegradable waste going to landfills and missing separate collection of bio-waste
- Administrative and Institutional drawbacks

The respective recommendations are listed in the table below.

Table 4: Main recommendations for Bulgaria

1.	Increase progressively the existing landfill tax to divert waste from landfill. Use revenues to support separate collection and alternative infrastructure
2.	Extend and improve the cost-effectiveness, monitoring and transparency of existing EPR schemes and

	eliminate free-riding
3.	Implement the bio-waste strategy including specific measures to divert biodegradable waste from landfill
4.	Intensify inspection and enforcement activities in order to ensure compliance with legal provisions for municipal waste management
5.	Update the national and regional WMPs including specific policy measures how to achieve the targets set by the WFD and analysis of the current waste management situation on the basis of robust data, analysis of impacts of implementation of the policy measures, required infrastructures and projections of future waste generation and treatment
6.	Establish and control separate collection infrastructure and schemes. Implement door-to-door separate collection as soon as possible
7.	Initiate comprehensive awareness raising campaigns on separate collection and proper waste management.
8.	Improve the utilisation and allocation of available EU funding in order to support waste prevention, preparing for reuse and recycling

6.7.2 Czech Republic

For the Czech Republic, the following key challenges and deficits have been identified:

- High share of bio-degradable waste going to landfills
- Waste treatment largely diverting from the waste hierarchy
- Non-harmonized waste data base and insufficient reporting system/routines in frequent data collection
- Deficits in cooperation and supervision systems especially on municipal level

The respective recommendations are listed in the table below.

Table 5: Main recommendations for the Czech Republic

1.	Increase progressively the existing landfill tax to divert waste from landfill. Use revenues to support separate collection and alternative infrastructure
2.	Introduce an incineration in order to make recycling economically viable. Keep the landfill tax higher than taxes for incineration. Use revenues to support separate collection and alternative infrastructure
3.	Extend and enforce PAYT scheme. Provide incentives and support for households to participate in separate collection
4.	Implement the bio-waste strategy including specific measures to divert biodegradable waste from landfill
5.	Establish and control separate collection infrastructure and schemes. Implement door-to-door separate collection as soon as possible
6.	Extend and improve the cost-effectiveness, monitoring and transparency of existing EPR schemes and eliminate free-riding
7.	Enhance cooperation between all different administrative levels by in-depth consultation and establishment of inter-municipal organisations

6.7.3 Estonia

For Estonia, the following key challenges and deficits have been identified:

- Waste treatment largely diverting from the waste hierarchy
- Insufficient source separated collection of municipal waste
- Administrative structure in the waste management sector
- Insufficient supervision system for waste management

The respective recommendations are listed in the table below.

Table 6: Main recommendations for Estonia

1.	Change the administrative structure in the waste sector by establishing inter-municipal organisations
2.	Introduce an incineration and MBT tax[12] in order to make recycling economically viable. Keep the landfill tax higher than taxes for incineration and MBT. Use revenues to support separate collection and alternative infrastructure
3.	Earmark revenues from landfill and other waste related charges for waste management investments
4.	Improve the cost-effectiveness, monitoring and transparency of existing EPR schemes and enforce the requirements of the system in place
5.	Establish and control separate collection infrastructure and schemes. Implement door-to-door separate collection as soon as possible
6.	Undertake a study on the connection of households to professional waste collection services in order to obtain more reliable data on the current collection coverage

6.7.4 Greece

For Greece, the following key challenges and deficits have been identified:

- Lack of infrastructure and waste treatment largely diverting from the waste hierarchy
- Insufficient source separated collection of municipal waste
- High share of bio-degradable waste going to landfills
- Administrative and Institutional drawbacks

The respective recommendations are listed in the table below.

Table 7: Main recommendations for Greece

1.	Introduce a landfill tax and progressively increase the landfill tax to divert waste from landfill. Use revenues to support separate collection and alternative infrastructure
2.	Update the national and regional WMPs including specific policy measures how to achieve the targets set by the WFD and analysis of the current waste management situation on the basis of robust data, analysis of impacts of implementation of the policy measures, required infrastructures and projections of future waste generation and treatment
3.	Implement the bio-waste strategy including specific measures to divert biodegradable waste from landfill.
4.	Extend and improve the cost-effectiveness, monitoring and transparency of existing EPR schemes and eliminate free-riding
5.	Establish and control separate collection infrastructure and schemes. Implement door-to-door separate collection as soon as possible
6.	Extend and enforce PAYT scheme. Provide incentives and support for households to participate in separate collection
7.	Include all packaging waste from households and similar sources into the data on generation and treatment of municipal waste

6.7.5 Italy (South)

For Italy (South), the following key challenges and deficits have been identified:

- Obligation on treatment of waste to landfills not fully complied

[12] Note: In Estonia, the wording *charge* is used for environmental taxes. *"Environmental charges have been considered to be a form of environmental taxation in Estonia, as they are used to tax the use of natural resources and release of waste or pollutants into soil, water or ambient air"* [Estonian Institute for Sustainable Development, 2009].

- The potential of separate collection/recycling /composting not fully deployed
- Difficult siting of disposal sites (landfills, incinerators)
- Incomplete coverage of costs with regard to MSW management
- Lack of cross-consistency across different Regional WMPs
- Illegal delivery of special/hazardous waste into MSW

The respective recommendations are listed in the table below.

Table 8: Main recommendations for Italy (South)

1.	Provide waste management planning based on options in line with the waste hierarchy and by making use of the appropriate economic instrument in order to qualify for EU funding (2014-2020). Such EU funds should primarily support waste separate collection and recycling of waste with a view of meeting the recycling targets
2.	Progressively increase the existing landfill tax to levels necessary to effectively divert waste from landfills. Use revenues to support separate collection and alternative infrastructure
3.	Use (part of) the landfill tax to boost local programmes and schemes for separate collection necessary to achieve the national target of 65% by 2012 and recycling. Introduce PAYT scheme as necessary in order to help prevent waste generation
4.	Ensure full compliance with the legal obligation on pre-treatment of waste before disposal in order to make disposal less cost-competitive
5.	Facilitate the (re-)establishment of the ATO (Optimal Territorial Units) or similar entities for a coordinated planning of treatment and disposal sites so that municipalities can join/plan efforts and reduce waste management costs while providing legal certainty for private operators. Define capacity building programmes for local decision-makers in order to facilitate the exchange of good practices
6.	Update the establishment of SISTRI as a tool to prevent illegal practices related to waste management

6.7.6 Lithuania

For Lithuania, the following key challenges and deficits have been identified:

- High share of biodegradable waste going to landfills
- Waste treatment largely diverting from the waste hierarchy
- Lack of separate collection of municipal waste
- Incomplete coverage of households with regard to municipal waste collection

The respective recommendations are listed in the table below.

Table 9: Main recommendations for Lithuania

1.	Introduce a landfill tax and progressively increase the landfill tax to divert waste from landfill. Use revenues to support separate collection and alternative infrastructure
2.	Introduce an incineration and MBT tax in order to make recycling economically viable as soon as the landfill tax is implemented. Keep the landfill tax higher than taxes for incineration and MBT. Use revenues to support separate collection and alternative infrastructure
3.	Improve the data collection system of municipal waste and include household packaging waste into the data on generation and treatment of municipal waste
4.	Update the WMP including specific policy measures how to achieve the targets set by the WFD and analysis of the current waste management situation on the basis of robust data, analysis of impacts of implementation of the policy measures, required infrastructures and projections of future waste generation and treatment
5.	Extend and enforce PAYT scheme. Provide incentives and support for households to participate in separate collection
6.	Establish and control separate collection infrastructure and schemes. Implement door-to-door separate collection as soon as possible

7.	Extend and improve the cost-effectiveness, supervision and transparency of existing EPR schemes and eliminate free-riding
8.	Implement the bio-waste strategy including specific measures to divert biodegradable waste from landfill

6.7.7 Latvia

For Latvia, the following key challenges and deficits have been identified:

- Not all dumpsites are recultivated yet
- High share of biodegradable waste going to landfills
- Waste treatment largely diverting from the waste hierarchy
- Lack of separate collection of municipal waste
- Incomplete coverage of households with regard to municipal waste collection

The respective recommendations are listed in the table below.

Table 10: Main recommendations for Latvia

1.	Increase progressively the existing landfill tax to divert waste from landfill. Use revenues to support separate collection and alternative infrastructure
2.	Introduce an incineration and MBT tax in order to make recycling economically viable. Keep the landfill tax higher than taxes for incineration and MBT. Use revenues to support separate collection and alternative infrastructure
3.	Improve the data collection system of municipal waste and include all household packaging waste into the data on generation and treatment of municipal waste. Report co-incineration as R1 operation if the operation meets the requirements of the WFD
4.	Extend and enforce PAYT scheme. Provide incentives and support for households to participate in separate collection
5.	Implement the bio-waste strategy including specific measures to divert biodegradable waste from landfill
6.	Establish and control separate collection infrastructure and schemes. Implement door-to-door separate collection as soon as possible
7.	Extend and improve the cost-effectiveness, monitoring and transparency of existing EPR schemes and eliminate free-riding

6.7.8 Poland

For Poland, the following key challenges and deficits have been identified:

- Waste treatment largely diverting from the waste hierarchy
- High share of biodegradable waste going to landfills
- Insufficient source separated collection of municipal waste
- Incomplete coverage of households with regard to municipal waste collection and existence of illegal dumpsites

The respective recommendations are listed in the table below.

Table 11: Main recommendations for Poland

1.	Increase progressively the existing landfill tax to divert waste from landfill. Use revenues to support separate collection and alternative infrastructure
2.	Introduce an incineration and MBT tax to make recycling economically. Keep the landfill tax higher than taxes for incineration and MBT. Use revenues to support separate collection and alternative infrastructure

3.	Improve the data collection system of municipal waste and include all household packaging waste into the data on generation and treatment of municipal waste
4.	Establish and control separate collection infrastructure and schemes. Implement door-to-door separate collection as soon as possible. Support municipalities in organising separate collection by regional and national guidance documents and institutionalised exchange of know-how and best practice
5.	Extend and improve the cost-effectiveness, monitoring and transparency of existing EPR schemes and eliminate free-riding
6.	Create incentives for municipalities to establish separate collection and to move towards the first steps of the waste hierarchy – by systems of subsidies/penalties, environmental awards, pilot projects, appropriate fiscal and control measures

6.7.9 Romania

For Romania, the following key challenges and deficits have been identified:

- Waste management largely diverting from waste hierarchy - significant dependence on landfilling
- High share of biodegradable waste disposed of in landfills and missing separate collection of bio-waste fraction
- Incomplete coverage of households with separate waste collection, especially in rural areas
- Weak capacity to implement projects and other administrative drawbacks

The respective recommendations are listed in the table below.

Table 12: Main recommendations for Romania

1.	Introduce a landfill tax and progressively increase the landfill tax to divert waste from landfill. Use revenues to support separate collection and alternative infrastructure
2.	Extend and improve the cost-effectiveness, monitoring and transparency of existing EPR schemes and eliminate free-riding
3.	Implement the bio-waste strategy including specific measures to divert biodegradable waste from landfill.
4.	Intensify inspection and enforcement activities in order to ensure compliance with legal provisions for municipal waste management
5.	Update the national and regional WMPs including specific policy measures how to achieve the targets set by the WFD and analysis of the current waste management situation on the basis of robust data, analysis of impacts of implementation of the policy measures, required infrastructures and projections of future waste generation and treatment
6.	Establish and control separate collection infrastructure and schemes. Implement door-to-door separate collection as soon as possible
7.	Initiate comprehensive awareness raising campaigns on separate collection and proper waste management.
8.	Improve the utilisation and allocation of available EU funding in order to support waste prevention, preparing for reuse and recycling

6.7.10 Slovak Republic

For the Slovak Republic, the following key challenges and deficits have been identified:

- Waste treatment largely diverting from the waste hierarchy
- High share of bio-degradable waste going to landfills
- Existence of illegal dumpsites (non-compliant landfills)
- Insufficient source separated collection of municipal waste
- Unreliable waste data

The respective recommendations are listed in the table below.

Table 13: Main recommendations for the Slovak Republic

1.	Increase progressively the existing landfill tax to divert waste from landfill. Use revenues to support separate collection and alternative infrastructure
2.	Extend and enforce PAYT scheme. Provide incentives and support for households to participate in separate collection
3.	Implement the bio-waste strategy including specific measures to divert biodegradable waste from landfill.
4.	Establish and control separate collection infrastructure and schemes. Implement door-to-door separate collection as soon as possible
5.	Extend and improve the cost-effectiveness, monitoring and transparency of existing EPR schemes and eliminate free-riding
6.	Improve the data collection system of municipal waste and include household packaging waste into the data on generation and treatment of municipal waste

7 Stakeholder consultation on country factsheets, problem analysis and recommendations

In the context of the problem analysis and discussion of possible measures to address country specific problems, interviews with governmental and non-governmental stakeholders and targeted stakeholder consultations have been undertaken.

Relevant information obtained during these interviews and consultations is documented and incorporated into the MS factsheets and/or roadmaps as applicable (see **Annex 5** and **Annex 7**).

8 Organisation of seminars

After successful completion of the tasks specified above, the preparation, organisation and post-processing of seminars in the ten selected MS and revision of the roadmaps took place (WP 4).

8.1 Organisation

This work package covered all single tasks entailing the range of technical organisation and post-processing as well as the actual realisation of the seminar, the drafting of short minutes report on the outcome of the workshop and respective review of the roadmaps. The objective of the seminars was to exchange opinions and to provide the possibility to achieve in depth understanding of the problems and to discuss the proposed action plan (including proposed measures and schedule contained in the Roadmaps).

The seminars also aimed at analysing how EU funds could be used to improve the waste management situation in the selected MS for further analysis and to bring this to the attention of present key decision makers.

The seminars were organised in each of the selected MS with duration of one day (about 10:00 to 17:00). In general, an informal dinner at the evening before the seminar was organised with participants on behalf of the Commission and key decision makers for waste management of the national competent authorities to have a first exchange on the topics covered by the seminar.

8.2 Participants

In total, between 17 and 41 participants attended the meeting, generally including

- Representatives of the national and where applicable regional competent authorities of the MS;
- Further representatives from other national institutions such as EPA, Ministry of Finance, Ministry of Infrastructure, Ministry of Regional Development as far as applicable and according to preferences of the Commission and the specific MS;
- Representatives of DG Env. including head or deputy head of C.2 Unit of Waste Management;
- A representative of DG Regional and Urban Policy (excluding CZ, LT and IT);
- Representatives of BiPRO or subcontractors.

Additionally, in Greece, a representative of the Task Force attended the seminar. Representatives of the European Investment Bank (JASPERS) attended seminars in Poland and Romania.

An overview on the seminars and related key data is available in the table below.

A list of participants is attached to the minutes prepared for each single seminar (see **Annex 8**).

Table 14: Time schedule of the Member State seminars in 2012

No	Member State and location	Date	DG Environment (DG ENV-C), European Commission	DG Regional and Urban Development, European Commission	National competent authority (contact person)	Contact details	Seminar language
1	Czech Republic, Prague MoE	19 Sept	Julio García Burgués Michel Sponar	-	Jaromir Manhart Stepan Jakl	stepan.jakl@mzp.cz	English
2	Estonia, Tallinn, MoE	02 Oct	Julius Langendorff Gunther Wolff	Piret AUNAPUU	Peeter Eek	Peeter.Eek@envir.ee	English
3	Bulgaria, Sofia, MoE	4 Oct	Julio García Burgués Bartosz Zambrzycki	Georges Spyrou	Grigor Stoyanov Stefan Stefanov Radoslav Smilyanov	gstoyanov@moew.government.bg ststefanov@moew.government.bg	English
4	Lithuania, Vilnius, MoE	10 Oct	Julius Langendorff Gunther Wolff	-	Daiva Kazlauskiene	d.kazlauskiene@am.lt	English
5	Latvia, Riga, MoE	11 Oct	Julius Langendorff Gunther Wolff	Jolanta MIKELSONE	Ilze Donina	Ilze.Donina@varam.gov.lv	English
6	Romania, Bucharest, MoE	16 Oct	Julius Langendorff Helmut Maurer	Mioara AVASILICHIOAEI	Simona Ghita	simona.ghita@mmediu.ro	English
7	Poland, Warsaw, MoE	23 Oct	Julius Langendorff Bartosz Zambrzycki Katarzyna Kot (Regio Policy, CF)	Jan Mikołaj DZIĘCIOŁOWSKI Katarzyna Kot	Dr Beata B. Klopotek	beata.klopotek@mos.gov.pl	Polish/ English
8	South Italy, Rome, MoE	25 Oct	Julio García Burgués José Jorge Diaz del Castillo Jonathan Parker (DG ENV-A)	-	Sebastiano Serra Giuliana Gasparrini Maurizio Pernice	Serra.Sebastiano@minambiente.it gasparrini.giuliana@minambiente.it Maurizio.pernice@minambiente.it	Italian
9	Slovakia, Bratislava, MoE	6 Nov	Julio García Burgués Bartosz Zambrzycki Katarina Hobzova (DG ENV-A)	Andrea Hlavata	Eleonóra Šuplatová	i.laureysens@arcadisbelgium.be	Slovak/ English
10	Greece, Athens, MoE	13 Nov	Julio García Burgués Michel Sponar	DG REGIO: Dimitra KANELLOPOULOU Task Force Members: Ben Van Houtte	Mr. Machairas (Head of SW Department) Mrs Vasilaki (State Expert)	i.mahairas@prv.ypeka.gr i.vasilaki@prv.ypeka.gr	Greek/ English

8.3 Agenda

The seminars were realised in form of round-table discussions to allow and encourage constructive discussions. Chatham House rules were observed and applied for the discussions where necessary in order to maximise the practical outcome of the event.

The agenda comprised the following features:

- Bilateral briefing with the Commission (DG ENV/ REGIO) before meeting;
- Introduction to the project (BiPRO or subcontractors) and welcoming from Commission (DG Environment) and the national competent authority;
- Presentation of current waste management situation (factsheets), problem analysis and recommendations (roadmaps);
- Discussion of each measure included in the roadmap (action plan) including funding possibilities (DG REGIO);
- Exchange of opinions on measures to be implemented and consequent adjustment of roadmap (action plan).

8.4 Follow-up to the seminars

In the view of post-processing of the seminar comprehensive minutes were prepared to summarise the content of all presentations and providing an overview of the main discussion points and related adjustments of the Roadmaps.

The minutes contain the agenda and participant list and provide an overview of the main changes discussed for the roadmaps.

The minutes of each seminar are available in **Annex 8**.

9 Conclusions

Within the screening of waste management performance, the assumptions of great disparities in terms of municipal waste management in the MS were confirmed. Within the detailed analysis of ten MS it was shown that implementation gaps and problems are linked to diverse reasons and country specific circumstances, including but not limited to immature institutional and infrastructural frameworks, insufficient use of economic instruments and shortcomings in stakeholder involvement. New MS generally face larger challenges to cope with waste management requirements and often other topics gain higher political priority. Nevertheless, also 'old' MS sometimes struggle to fulfil the EU requirements on waste management as shown by the analysis, and significant regional differences in recycling and waste management infrastructure exist. Even though problems differ and are always to be assessed in their specific context, it can be concluded that there are several common problems and shortcomings, and therefore similar recommendations and proven solutions for the application of policy instruments as experienced in countries with long tradition of waste management can be made.

The study served to select MS for a compliance promotion initiative of the Commission. The imitative aims at specific support to MS in designing their waste policy to move up the waste hierarchy and in order to meet the targets set by EU legislation, especially the WFD targets of 50% recycling. The project provided a problem analysis and country tailored recommendations how to improve national waste management performance for ten MS. During the next years, the Commission plans to extent this support and also cover other MS.

In course of the study, the national competent authorities and stakeholders from industry, associations and NGO supported intensively the work by providing detailed information and comments on the national and regional waste management situation in their respective countries.

It can be concluded also from the written comments received from MS that the seminars organised in the countries with the participation of representatives of the Commission and key decision makers at national and regional level, have been a valuable forum to establish a dialogue and exchange of view on the situation in the country and how to address specific issues. The seminars also provided the possibility for MS to clarify interpretations and actual status of the practical implementation and enforcement of EU waste legislation. The attendance of at least two representatives of DG Environment and generally one representative of DG for Regional and Urban Policy has been highly appreciated by MS authorities.

9.1 Progress achieved by Member States and expected implementation of recommendations

During the project running time, it is only possible to observe first implementation initiatives and to evaluate the official statements of the MS sent to the Commission, rather than a completed practical implementation of the recommendations. However, several MS have already started to consider the recommendations and for a number of measures MS work for longer on their practical implementation.

Three of the ten MS have officially responded to the factsheets and roadmaps, and their respective priorities and possibilities to consider the policy measures. During the project running time, several MS have stated that they plan to consider specific measures to be included during the current revision of WMPs, and also respected for future waste policy.

9.2 Recommendations for Member States

It is recommended to implement the respective measures by including them in planning documents such as WMP, WPP, strategies as well as national waste and tax policy. The MS specific recommendations are included in the individual roadmaps. For all MS facing difficulties in improving recycling and resource efficiency, and this is not limited to the countries covered by the specific contract, it is recommended to make use of the proven economic instruments and to ensure the establishment of convenient separate collection schemes for households.

More specifically, it is proposed to

- **Introduce treatment taxes** (especially for landfill/disposal). Revenues from taxes should be earmarked for financing separate collection, recycling infrastructure and awareness raising,
- **Establish and improve separate collection systems** and their control,
- **Initiate and intensify awareness raising** and information designed for different target groups,
- **Simplify administration** of waste management by administrative reforms,
- **Support local authorities** in their tasks on municipal waste management,
- **Extend and improve EPR schemes** by better monitoring and more transparency,
- **Update WMPs**, including development of measures to achieve legally binding targets and objectives,
- **Enforce national strategies on bio-waste management**,
- **Revise waste statistics** by aligning reporting to EUROSTAT guidelines,
- **Make use of EU funding** for waste infrastructure and initiatives related to the first steps of the waste hierarchy.

In addition, it is generally recommended to MS to increase the exchange of their experiences and good practice approaches. The specific practical solutions for implementing collection and treatment infrastructure, setting up a high quality WMP or organising effective awareness campaigns are available in a number of MS. Further, recommendations how to use economic instruments can be derived from their waste policy over the past decades and are useful information for the national policy design and priorities.

The recommendations are contained in the individual roadmap for each MS (**Annex 7**).

Additional information on policy instruments and recommendations for their application is contained in **Annex 6**.

9.3 Recommendations for EU Commission

The following recommendations can be given for the EU Commission. The activities have been identified during discussion rounds at the seminars, communicated by MS and could be considered by the Commission in order to support the improvement of the waste management practices in MS:

- Stimulate the secondary materials market and demand for recycled materials through promotion/imposition of economic instruments and development of end-of-waste criteria;
- Review existing prevention, re-use, recycling, recovery and landfill diversion targets to lay the ground for more effective design of waste legislation that promotes further the principles of the waste hierarchy to remove ambiguity and improve legal certainty, thus making legislation clearer, more effective and more easily enforceable;
- Assess areas where legislation on the various waste streams could be aligned to improve coherence
- Continue to provide expertise and individual support for instance via expert seminars and accompanying measures to improve waste management practices in MS with most relevant deficits in implementation and enforcement of EU waste legislation;
- Continue to facilitate the exchange of best practice on collection and treatment of waste among MS;
- Continue to inform MS on possibilities of co-financing and funding of projects in the field of waste management by EU funds to improve the absorption and use according to the first steps of the waste hierarchy, and couple infrastructural funding for MS with requirements for implementation of practical waste management actions;
- Extent cooperation between the different Directorates-General that are involved in waste management issues, including but not limited to DG Environment (sustainable consumption and waste policy), DG for Regional and Urban Policy (co-financing and funding of projects in the waste sector), DG Maritime Affairs and Fisheries (marine litter) and DG Climate Action (climate impacts of waste management);
- Support research and development of innovative technologies in the field of waste management;
- Continue to provide guidance on harmonisation of reporting/waste data which is the basis of the European waste statistics in order to make the statistics more comparable and to counter distortion of results, in particular uniform system for calculation of municipal waste to assure comparability amongst MS;
- Provide additional guidance documents on specific waste streams (e.g. bio-waste management).

Contact details:

BiPRO GmbH
Grauertstr. 12
81545 Munich, Germany
Phone: +49-89-18979050
Fax: +49-89-18979052
URL: http://www.bipro.de