

DIRECTORATE-GENERAL FOR INTERNAL POLICIES

POLICY DEPARTMENT **C**
CITIZENS' RIGHTS AND CONSTITUTIONAL AFFAIRS



Constitutional Affairs

Justice, Freedom and Security

Gender Equality

Legal and Parliamentary Affairs

Petitions

Waste management in Europe: main problems and best practices

NOTE



DIRECTORATE GENERAL FOR INTERNAL POLICIES

**POLICY DEPARTMENT C: CITIZENS' RIGHTS AND
CONSTITUTIONAL AFFAIRS**

PETITIONS

Waste management in Europe: main problems and best practices

**External expertise on emerging regulatory and policy
issues within the responsibility of the ENVI Committee
in the area of Environmental policy**

NOTE

Abstract

The European Parliament frequently receives petitions from EU citizens. A number of these petitions relate to the improper implementation of EU waste legislation, which causes negative environmental and health impacts. The relevant petitions were grouped according to defined criteria. Based on these criteria, twelve petitions were selected and analysed in detail. The selected petitions relate to deficiencies in the waste management system, the operation of existing installations (mainly incinerators and landfills) and the permitting procedure for new facilities. Based on the identified problems, recommendations have been derived to improve the situation.

This document was requested by the European Parliament's Committee on Petitions.

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LIST OF ABBREVIATIONS

- EIA** Environmental Impact Assessment
- IPPC** Integrated Pollution Prevention and Control
- RDF** Refuse-derived fuel
- SEA** Strategic Environmental Assessment
- WFD** Waste Framework Directive
- WID** Waste Incineration Directive

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PREFACE

The right to petition is a fundamental right under Article 227 of the Treaty on the Functioning of the European Union. Any citizen of the European Union, or resident in a Member State, may, individually or in association with others, submit a petition to the European Parliament on a subject which comes within the European Union's fields of activity and which affects them directly. The petition may present an individual request, a complaint or observation concerning the application of EU law or an appeal to the European Parliament to adopt a position on a specific matter.

The Petitions Committee may then decide to draw up a report or otherwise express its opinion on petitions it has declared admissible. When considering petitions or establishing facts, the committee may organise hearings of petitioners or general hearings or dispatch members to establish the facts of the situation in situ. In addition, with a view to preparing its opinions, the committee may request the European Commission to submit documents, to supply information and to grant it access to its facilities.

Some petitions give the European Parliament the opportunity of calling attention to any infringement of a European citizen's rights by a Member State or local authorities or other institutions (European Parliament 2011a).

The Petitions Committee of the European Parliament has received numerous petitions referring to problems with waste management.

1. EXECUTIVE SUMMARY

The Petitions Committee of the European Parliament has received numerous petitions relating to the issue of waste management in recent years. These petitions were reviewed and analysed. All in all, 101 petitions (submitted between 2004 and 2010) were provided by the European Parliament for assessment within this study. These petitions were grouped and evaluated according to the following criteria: focus of the complaint, type of waste management facility, relevant legislation, the waste types concerned and the geographical perspective.

In terms of complaints, the following three main cases were identified:

- **Case 1:** Permitting procedure for landfills – insufficient environmental impact assessment and public consultation.
- **Case 2:** Possible negative environmental impacts through improper operation of waste management facilities.
- **Case 3:** Deficiencies in waste management systems.

Based on a general evaluation, a legal assessment was carried out to identify the most relevant provisions of applicable EU legislation. The most relevant Directives and related Articles are listed below, including the number of petitions referring to that Article [see bracket]:

Waste Framework Directive (2006/12/EC) Revised by Directive 2008/98/EC on waste (Waste Framework Directive

- Article 4 [25]: Waste management without *endangering human health and without using processes or methods which could harm the environment* is one of the main objectives of proper waste management. Abandonment, dumping or uncontrolled disposal of waste have to be prohibited.
- Article 9 & Article 10 [13]: Any establishment or undertaking which carries out waste management operations shall obtain a *permit* from the competent authority covering the types and quantities of waste, the technical requirements, the safety precautions to be taken, the disposal site and the treatment method.
- Article 8 [8]: Provisions defined at national level and relating to the *responsibility for waste management* have to be complied with during the whole chain of waste management from the original waste producer or other holder to the final treatment of waste.

Landfill Directive (1999/31/EC)¹

- Article 8, Article 7, Article 9 & Annex I [23]: A *permit shall not be issued unless the landfill project complies with the relevant requirements* of the Landfill Directive, including its Annexes. Annex I stipulates general requirements for landfills regarding the location of landfills, water control and leachate management, the protection of soil and water, gas control, nuisance and hazards, stability and barriers.

¹ Amended by Regulation (EC) No 1882/2003 and Regulation (EC) No 1137/2008.

- Article 6, Article 11 & Annex II & Council Decision 2003/33/EC² [9]: A standard *waste acceptance procedure* is laid down in the Landfill Directive (99/31/EC) so as to avoid any risks. Decision 2003/33/EC establishes the criteria and procedures for the acceptance of waste at landfills in accordance with the principles set out in Directive 1999/31/EC and in particular Annex II thereto.
- Article 14 [8]: Member States shall take measures in order that landfills which have been *granted a permit*, or which are already in operation at the time of transposition of the Directive, may not continue to operate unless they *comply with the provisions of the Directive as soon as possible* and within eight years after the deadline for implementation of the legislation in the Member States at the latest.

Waste Incineration Directive (2000/76/EC)³

- Article 7 [5]: Incineration plants and co-incineration plants shall be designed, equipped, built and operated in such a way that the *emission limit values* determined according to or set out in different Annexes of the WID are not exceeded in the exhaust gas.
- Article 4 [4]: No incineration or co-incineration plant shall *operate without a permit* to carry out its activities. The competent authority shall periodically reconsider and, where necessary, update the permit conditions.
- Article 6 [4]: A high level of *environmental protection and human health protection* requires the setting and maintaining of stringent operational conditions, technical requirements and emission limit values for plants incinerating or co-incinerating waste within the Community.

Integrated Pollution Prevention and Control Directive (2008/1/EC)

- Article 9 [9]: Member States shall ensure that *the permit includes all measures necessary* for compliance with the requirements of Articles 3 and 10 of the Directive for the granting of permits in order to achieve a high level of protection for the environment as a whole by means of protection of the air, water and land.
- Article 2 [9]: Inconsistencies are often related to certain *definitions*, in particular to “installation” and “existing installation”.
- Article 15 [7]: Access to *information and public participation* in the permit procedure has to be provided to enable acceptance of the public.

Environmental Impact Assessment (EIA) Directive (85/337/EEC)⁴

- Article 4 & Annex I, II and III [27]: According to the project type, projects shall be made subject to an assessment (screening). Therefore project selection criteria to *determine the need and detail of the assessment* are defined.
- Article 5 & Annex IV [27]: The developer has to supply (in an appropriate form) *information concerning inter alia the overall project characteristics*,

² Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste and landfills pursuant to Article 16 and Annex II to Directive 1999/31/EC.

³ Replaced by Directive 2010/75/EC on industrial emissions (integrated pollution prevention and control).

⁴ Amended by Directive 97/11/EC, Directive 2003/35/EC and 2009/31/EC.

main alternatives, affected parts of the environment and measures to prevent impacts on the environment.

- Article 2 [19]: Measures have to be taken by the MS that before consent is given, projects likely to have significant effects on the environment by virtue, *inter alia*, of their nature, size or location are made subject to a requirement for development consent and an assessment with regard to their effects.

Strategic Environmental Assessment (SEA) Directive (2001/42/EC)

- Article 3 & Annex II [8]: Plans and programmes shall be made subject to an assessment. Therefore selection criteria to *determine the need and detail of the assessment* are defined.
- Article 6 & Article 8 & Article 9 [3]: *Consultation and decision making processes* have to be carried out involving the responsible authorities and the public and considering their opinion. Appropriate information has to be made available to them.
- Article 2 [3]: Inconsistencies are often related to certain *definitions*, in particular of the term "the public".

For each of the identified cases, a number of petitions have been selected for an in-depth analysis. At the end of this study, recommendations are made to tackle the problems revealed through this analysis.

Permitting procedure for landfills

The in-depth analysis of those petitions that were concerned with the permitting procedure of landfills revealed the following problems:

- In some Member States the setting up of a comprehensive and efficient waste management system including waste prevention, recycling, mechanical, thermal, biological and physico-chemical waste treatment has been delayed; as a consequence, new landfilling capacity and, in selected cases, even the re-opening of non-compliant landfills has been necessary to cope with different types of waste.
- In order to speed up the permitting procedure, public participation has not been done properly in some cases, giving the impression that the authorities in question were biased.
- Uncertainties in the environmental impact assessment were not handled in a satisfactory way.
- Even if the permitting process was in line with EU and national legislation, public acceptance was low in some cases, leading to concerns over possible health or environmental impacts.

In order to reduce and solve these problems, a number of recommendations have been worked out:

- Speed up the introduction of advanced waste management systems including waste prevention, recycling and energy recovery, e.g. by providing public funds.
- Improve the communication between authorities, operators and interested and affected parties; this can be done through the development of guidelines based on best-practice examples and their application. This will also increase the trust in - and thereby the acceptability of - new installations.

- Introduction of a quality control and verification system for environmental impact assessments.
- Introduce specific EU-wide standards for the frequency, length and content of the reconsideration process for permits.
- Provide sufficient administrative capacities for the national, regional and local authorities responsible for the permitting procedure to enable the timely adaptation of permits.
- Further development of standards for environmental protection - e.g. standards for minimum distances between landfills and residential areas or for simulation methods applied in environmental impact assessment.

Improper operation of waste management facilities

The in-depth analysis of those petitions that were concerned with the operation of waste treatment facilities revealed the following problems:

- In some cases permits are not valid or are not in accordance with EU and national legislation. Proper operation (e.g. for IPPC installations the application of Best Available Techniques) is thus not guaranteed.
- Deadlines set out in specific Directives for the reconsideration of permits, e.g. the competent authority having to issue an integrated permit for existing installations covered by the IPPC Directive before the end of October 2007, have not been complied with.
- Direct emissions from waste treatment processes are not always controlled and sufficiently monitored.
- Environmental impacts from treatment processes are sometimes caused by inappropriate waste inputs, namely that the treatment process is not suitable for environmentally safe treatment of the accepted waste. Standards for the sampling and testing of waste input material are not fully applied.
- Uncertainties over the operation of plants even if the permitting procedure has been done properly.

In order to solve these problems it is recommended to:

- provide administrative capacities for the national, regional and local authorities responsible for the permitting procedure to enable the timely adaptation of permits.
- carry out on-line (continuous) measurement of key emissions and process parameters to prevent incorrect operation of a facility and limit environmental impact.
- make on-line measurement results publicly available in order to build confidence.
- define waste acceptance criteria (as defined in Council Decision 2003/33/EC for landfilling, as well as according to input criteria for incineration and co-incineration) to keep unwanted substances away from certain treatment processes. Apply relevant sampling and testing standards accordingly.
- carry out on-site inspections of waste treatment facilities to monitor compliance with the provisions defined in the permit and relevant legislation. Build corresponding administrative capacities on the national, regional and local level.

Deficiencies in waste management systems

The following problems are inherent to those petitions which are concerned with malfunctions in the waste management system:

- Due to a lack of financial resources or due to long lasting administrative procedures, no sufficient recovery and disposal capacities have been installed.
- Due to earlier mismanagement by regional or local authorities, citizens in the vicinity of planned waste treatment installations are strongly opposed to new waste facilities (the Not-In-My-Back-Yard problem).
- Due to illegal activities household waste is contaminated with industrial and hazardous waste, leading to problems with its subsequent treatment.
- Private companies in charge of waste management have not been able to fulfil the terms of the contract in time, or sometimes not at all. Legal proceedings are still ongoing to clarify the legal responsibilities.

In order to solve these problems, it is recommended to:

- speed up the introduction of advanced waste management systems including waste prevention, recycling and energy recovery, e.g. by providing public funds.
- streamline administrative procedures for the permission and construction of waste treatment installations, without narrowing down environmental assessments or the participation of stakeholders.
- provide sufficient financial means for building waste treatment capacity, e.g. by setting aside funds, introducing fees, etc.
- take measures to reduce opposition from neighbours to planned waste treatment installations. The general public and especially the citizens living in the vicinity of installations need to have confidence in the permitting authorities, especially that the rules governing environmental assessments of installations are applied correctly and that the doubts and objections raised by the citizens are taken into consideration (see also above: 'permitting procedures for landfills').
- in order to ensure that waste is not illegally disposed of, set up an effective monitoring system. In this way, the competent authorities can monitor waste until it reaches its destination. The first priority of the monitoring system should be put on hazardous waste.
- The proper operation of the monitoring system should be supervised through inspections of waste transports and waste treatment installations.
- Implement appropriate sanctions that will act as a deterrent to non-compliance. Illegal waste disposal should be subject to heavy fines. Those responsible for illegal disposal should be sued for environmental damages.

2. GENERAL INFORMATION AND METHODOLOGY

The Petitions Committee of the European Parliament has received numerous petitions pertaining to the issue of waste management. In order to analyse the relevance of selected petitions in more detail, some fact-finding missions were made to regions with alleged breaches of the regulatory framework and working documents were adopted on the findings of these missions.

The aim of this study was to gain deeper insights into the problems which Member States face when trying to implement European waste legislation successfully, and to point out ways to improve the situation. The main focus within the broad topic of waste management was on treatment of mixed municipal solid waste.

The main elements of the study include:

- an overview of EU waste legislation and its implementation across EU Member States
- the identification of possible problems, based on a list of petitions provided by the Petitions Committee
- an assessment if the allegations raised in the petitions are supported by evidence that constitutes good cause for questioning compliance
- suggestions for improving the situation, based on what experts consider to be best practice

The following steps were made:

- general evaluation of the petitions provided according to the main focus of complaint, the waste management facility and the waste types concerned and the geographical perspective
- legal assessment of the petitions provided to identify the most relevant sections of applicable EU legislation
- identification of the three most relevant cases which represent the most important problem areas of waste management as revealed by the petitions
- in-depth analysis of the selected cases and four representative petitions using independent sources of information (such as reports from the European Commission and information provided by Member States)
- elaboration of recommendations for improving the situation

It was not the objective of this study to single out individual Member States or regions that are mentioned in different petitions, but to pinpoint common problems and possible solutions which will be of general validity for the further development of the European waste management sector.

3. PETITIONS CONSIDERED

For this study, 101 petitions (submitted between 2004 and 2010) were reviewed in detail. As a first step, the petitions were evaluated according to defined criteria, followed by a legal assessment in which the most relevant sections of the applicable Directives were identified.

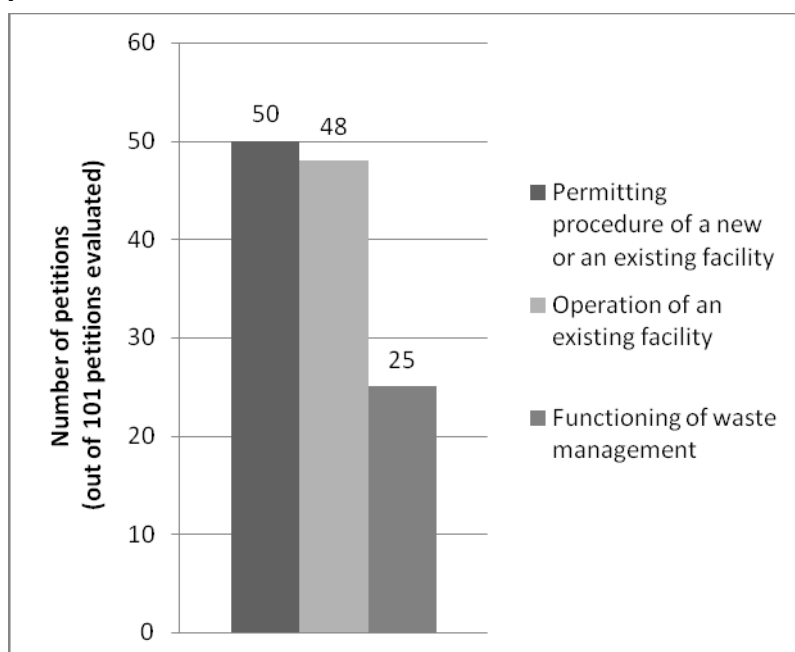
3.1. Evaluation according to defined criteria

As a first step, the available petitions were reviewed and grouped according to the following criteria:

3.1.1. Focus of complaint

The general evaluation of the petitions included an identification of the main focus of the complaint raised by the petitioner. Of the 101 petitions in total, 76 referred to problems related to waste management facilities, with a focus on the permitting procedure for a planned or an existing facility, or on the operation of an existing facility. Another main area of complaint was the issue of deficiencies of the waste management systems.

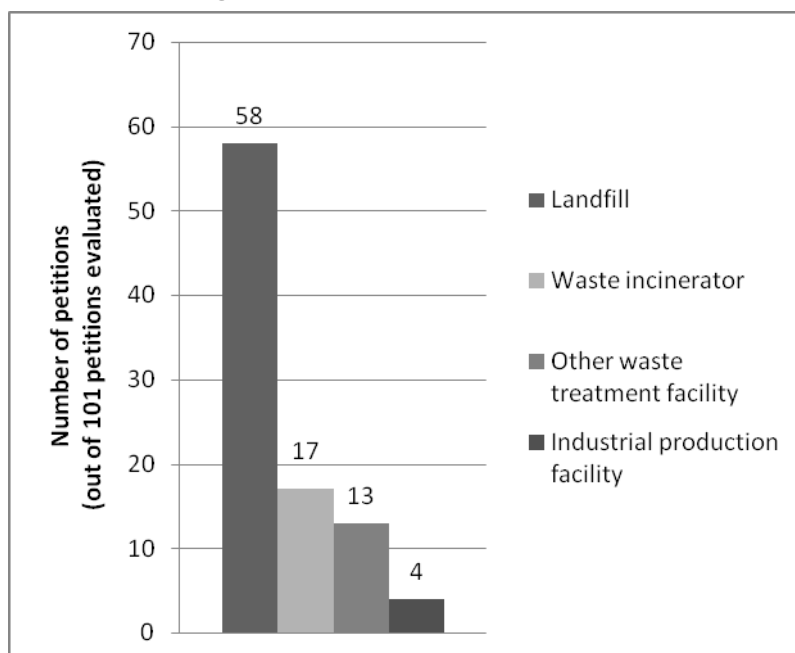
Figure 1: Complaints raised by petitioner – main focus (multiple assignments possible)



3.1.2. Type of waste management facility

Of the 76 petitions dealing with waste treatment facilities, 58 refer to landfills, another 17 to incineration plants. A few petitions refer to other types of waste treatment facilities and industrial production facilities.

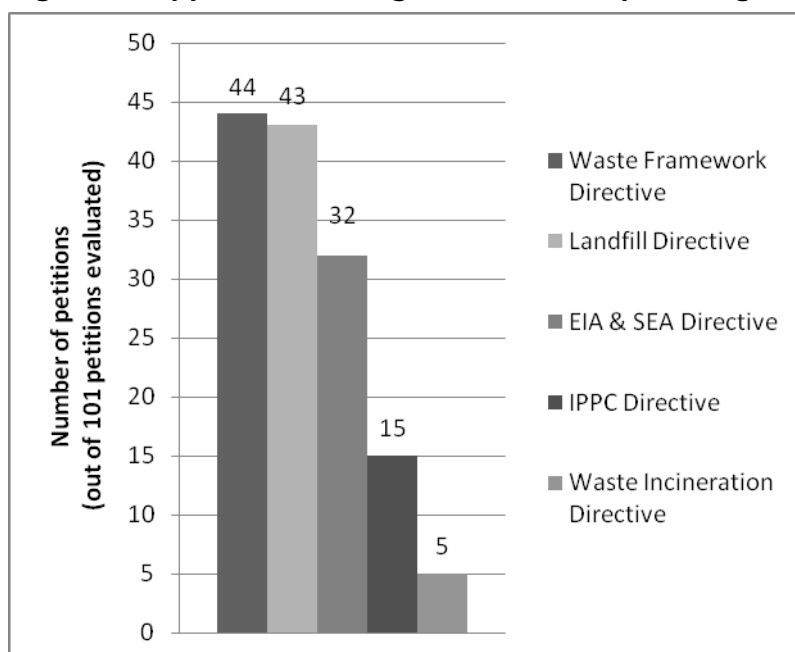
Figure 2: Type of waste management facility type to which the petitions refer (multiple assignments possible)



3.1.3. Applicable EU legislation

The Waste Framework Directive (2006/12/EC) and the Landfill Directive (1999/31/EC) are the most important elements of EU legislation referred to by the petitioner and/or the European Commission when replying to the petitions. The IPPC Directive (2008/1/EC), the EIA Directive (1985/337/EEC), the Waste Incineration Directive (2000/76/EC) and the SEA Directive (2001/42/EC) are referred to as well. Most of the petitions refer to more than one piece of legislation.

Figure 3: Applicable EU legislation (multiple assignments possible)

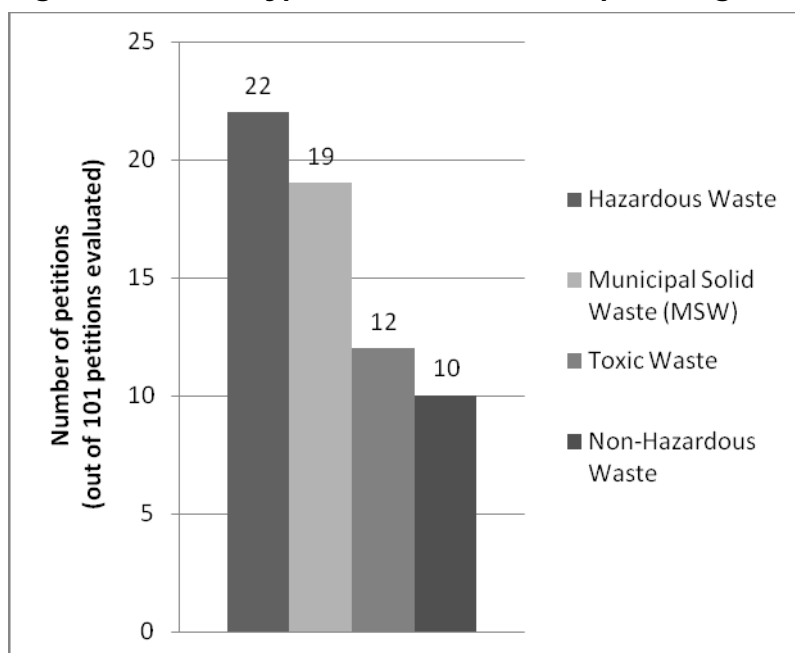


Only a few petitions refer to the Aarhus Convention⁵, Sewage Sludge Directive (86/278/EEC), Habitats Directive (Natura 2000) (92/43/EEC), Wild Birds Directive (2009/147/EC), Water Framework Directive (2000/60/EC), Groundwater Directive (2006/118/EC), Drinking Water Directive (98/83/EC), Air Quality Directive (2008/50/EC), Dangerous Substances Directive (67/548/EEC) and the Environmental Quality Standard Directive (2008/105/EC).

3.1.4. Waste types concerned

More than half of the petitions gave no information about the waste type(s) concerned. Where information was provided, the petitioners referred to hazardous waste and municipal solid waste and, in fewer cases, toxic waste and non-hazardous waste.

Figure 4: Waste types concerned (multiple assignments possible)



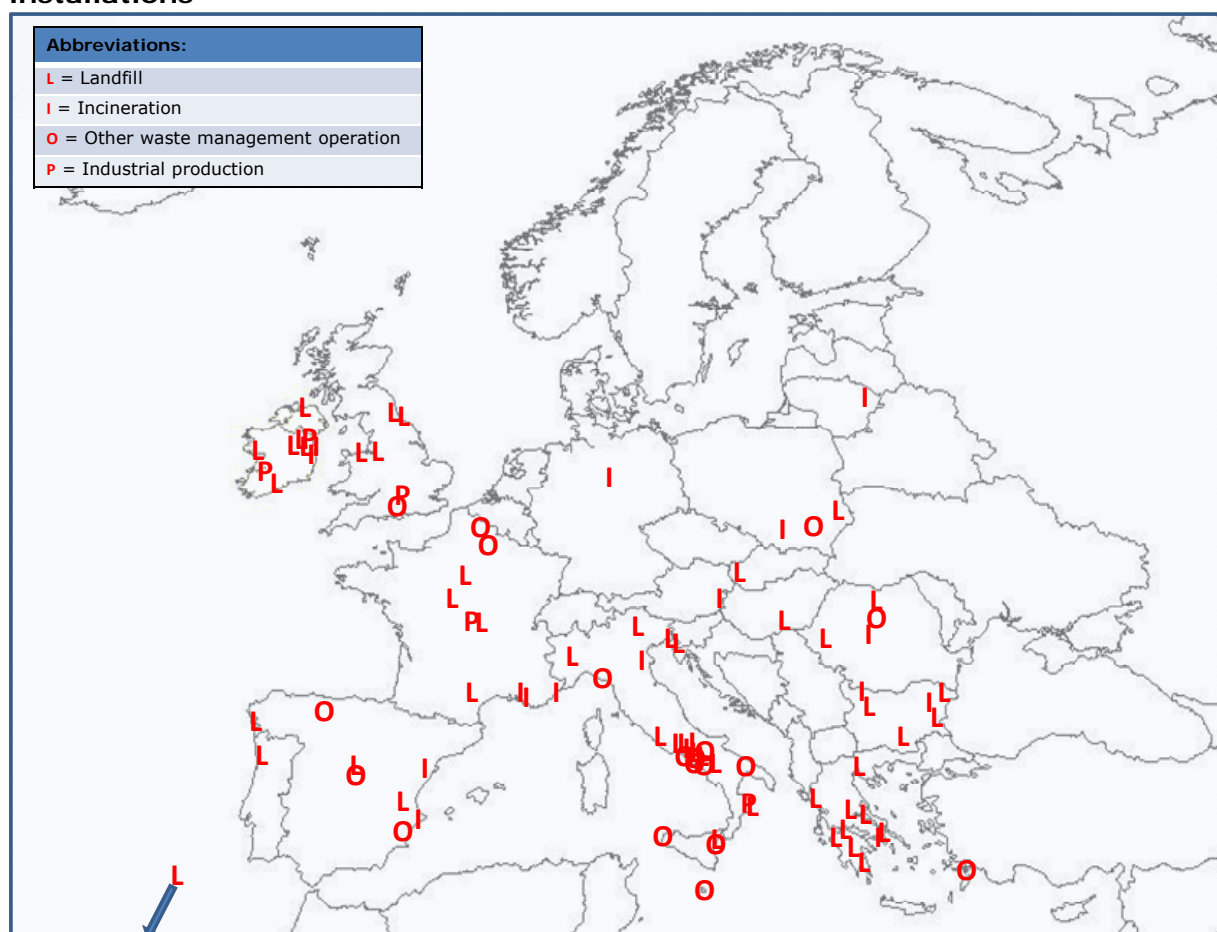
3.1.5. Geographical perspective

More than 90% of the evaluated petitions refer to problems at the local or regional level. Four petitions refer to the national level, in three petitions more than one Member State was involved. One petition refers to problems encountered throughout the EU.

Most petitions refer to waste management installations in Western, Southern and Southeastern Europe whereas no petitions have been received from Northern Europe.

⁵ UNECE 1998: Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters.

Figure 5 : Geographical perspective of petitions referring to waste management installations



3.2. Legal assessment

As revealed by the general evaluation, the following six Directives were referred to most frequently by the petitioners or the European Commission when replying to the petitions. The following tables show how often a single legal provision was referred to in the 101 petitions.

3.2.1. Waste Framework Directive (2006/12/EC)

A considerable share of the analysed waste management petitions refers to provisions of the Waste Framework Directive 2006 (WFD 2006/12/EC). Table 1 shows to which articles of the WFD 2006 the petitions refer, the main content of the articles in question and how many of the petitions refer to the respective article. In the meantime a new Waste Framework Directive (WFD 2008/98/EC) has been issued. As this new WFD provides - to some extent - a different framework, Table 1 shows the corresponding articles of the new WFD (2008/98/EC) and relevant changes. In general, it can be concluded that - with respect to the concerns raised in the petitions - the intentions behind the new WFD are the same as those of the old WFD. However, it provides much more detail, such as who is responsible for what. The new WFD also puts more emphasis on aftercare, allows to distinguish better between waste management options and in the waste hierarchy further strengthens prevention, re-use and recycling. According to the new WFD the future waste management plans should include much more specific provisions on the expansion of the

waste management system. These provisions may provide better reference points for future petitions.

In the most recent **implementation report**⁶ on waste legislation (which still refers to the older version of the Waste Framework Directive) (European Commission 2009a), a detailed evaluation is given for the period 2004-2006, and it has been found that even in 2009 there were still problems concerning the national implementation of the Directive as well as the application of transposed national legislation, although Member States confirmed that they had incorporated the Directive into their national law: *'In 2009, eleven cases for structural and wide-spread failure to address illegal waste dumping, ten for bad application, four related to waste planning, and three on non-conformity of national laws with the directive were still pending in relation to the WFD.'*

The implementation report states that *all Member States confirmed having incorporated the Directive into their national law. The basic requirements to ensure the environmentally sound management of waste were implemented in all Member States, although there are still problems in some countries especially as regards the creation of complete waste management infrastructures. At the same time, there are huge differences in the implementation of the waste hierarchy and the use of waste as a resource* (European Commission, 2009a).

⁶ Implementation Report for the Community waste legislation for the period 2004-2006 (European Commission, 2009a).

Table 1: Number of petitions referring to selected articles of the Waste Framework Directive (WFD 2006/12/EC) and corresponding articles of the new Waste Framework Directive (WFD 2008/98/EC)

Article of the WFD 2006/12/EC	Main content (WFD 2006/12/EC)	Number of petitions referring to the article of the WFD (2006/12/EC)	Corresponding article of the WFD 2008/98/EC	Changes/new requirements under the new WFD (2008/98/EC) as compared to the WFD 2006/12/EC
Article 4 – objectives of waste management	The recovery and disposal of waste without endangering human health and without using processes or methods which could harm the environment is one of the main issues of proper waste management. It has to be ensured that there is no risk to water, air or soil, or to plants or animals, no nuisance through noise or odours and that the countryside or places of special interest are not adversely affected. Abandonment, dumping or uncontrolled disposal of waste have to be prohibited.	25	Article 13 Protection of human health and the environment Article 36 Enforcement and penalties	Essentially the same. Main difference: prohibit the abandonment, dumping or uncontrolled management of waste
Article 9 & Article 10 – Permitting procedure	Any establishment or undertaking which carries out the waste management operations shall obtain a permit from the competent authority covering the types and quantities of waste, the technical requirements, the safety precautions to be taken, the disposal site and the treatment method. Permits may be granted for a specified period, they may be renewable, they may be subject to conditions and obligations, or, notably, if the intended method of disposal is unacceptable from the point of view of environmental protection, they may be refused.	13	Article 23 Issue of permits	Permits are to be issued for waste treatment operations Additional specifications are required <ul style="list-style-type: none"> - for each type of operation permitted : the technical and any other requirements relevant to the site concerned; - the method to be used for each type of operation; - such monitoring and control operations as may be necessary; - such closure and after-care provisions as may be necessary.
Article 8 – responsibilities	Provisions defined at national level on the responsibility for waste management have to be fulfilled including the whole chain of waste management from the original waste producer or other holder to the final treatment of waste.	8	Article 15 Responsibility for waste management	Responsibilities and the transfer of responsibilities are specified in more detail.
Article 5 – principles	Principles of self-sufficiency and proximity for waste	7	Article 16	The principles of self-sufficiency and proximity also

Article of the WFD 2006/12/EC	Main content (WFD 2006/12/EC)	Number of petitions referring to the article of the WFD (2006/12/EC)	Corresponding article of the WFD 2008/98/EC	Changes/new requirements under the new WFD (2008/98/EC) as compared to the WFD 2006/12/EC
	disposal		Principles of self-sufficiency and proximity	apply for the recovery of mixed municipal waste collected from private households, including where such collection also covers such waste from other producers.
Article 3 - Waste hierarchy	3 tier waste hierarchy: Prevention before material/energy recovery before disposal	5	Article 4 - Waste hierarchy	5 tier waste hierarchy: Prevention before preparing for re-use before recycling before other recovery before disposal
Article 7 - Waste management plans	Member States are to draw up waste management plans relating to (a) the type, quantity and origin of waste to be recovered or disposed of; (b) general technical requirements; (c) any special arrangements for particular wastes; (d) suitable disposal sites or installations	2	Article 28 Waste management plans	Waste management plans should, in addition, include: an analysis of the current situation, measures to improve waste management, an evaluation of how the plan supports the implementation of the objectives and provisions of the WFD waste shipment and hazardous waste development of waste streams in the future existing and future development of waste management installations location criteria for site identification management of contaminated sites organisation of the waste management sector.
Article 1 - Definitions	'waste' shall mean any substance or object in the categories set out in Annex I which the holder discards or intends or is required to discard 'management' shall mean the collection, transport, recovery and disposal of waste, including the supervision of such operations and after-care of disposal sites;	1	Article 3 - Definitions	'waste' means any substance or object which the holder discards or intends or is required to discard 'waste management' means the collection, transport, recovery and disposal of waste, including the supervision of such operations and the after-care of disposal sites, and including actions taken as a dealer or broker;
Article 13 -	Establishments or undertakings which carry out	1	Article 34	It is further specified which undertakings are to be

Article of the WFD 2006/12/EC	Main content (WFD 2006/12/EC)	Number of petitions referring to the article of the WFD (2006/12/EC)	Corresponding article of the WFD 2008/98/EC	Changes/new requirements under the new WFD (2008/98/EC) as compared to the WFD 2006/12/EC
Inspections	waste management operations shall be subject to appropriate periodic inspections by the competent authorities.		Inspections	inspected, and how.

3.2.2. Landfill Directive (1999/31/EC)

Table 2: Number of petitions referring to selected articles of the Landfill Directive (1999/31/EC)

Article/Legal provision	Content	Number of petitions referring to the article
Article 8, Article 7, Article 9 and Annex I	The Landfill Directive (99/31/EC) sets up a system of operating permits for landfill sites. A permit shall not be issued unless the landfill project complies with the relevant requirements of the Landfill Directive, including the Annexes. Annex I stipulating general requirements for landfills provides requirements as regards the location of landfills, water control and leachate management, the protection of soil and water, gas control, nuisance and hazards, stability and barriers.	23
Article 6, Article 11 & Annex II & Council Decision 2003/33/EC ⁷	A standard waste acceptance procedure is laid down in the Landfill Directive (99/31/EC) so as to avoid any risks. Decision 2003/33/EC establishes the criteria and procedures for the acceptance of waste at landfills in accordance with the principles set out in Directive 1999/31/EC and in particular Annex II thereto.	9
Article 14	Member States shall take measures in order that landfills which have been granted a permit, or which are already in operation at the time of the transposition of the Directive, may not continue to operate unless they comply with the provisions of the Directive as soon as possible and within eight years after the deadline for implementation of the legislation in the Member States at the latest.	8
Article 13	Closure and after-care procedures	1

In the most recent **implementation report**⁶ on waste legislation (European Commission 2009a), a detailed evaluation is given for the period 2004-2006, and it is pointed out that even in 2009 there were still problems concerning the national implementation of the Directive as well as the application of transposed national legislation: *'In 2009, 13 non-conformity cases and eleven bad application cases were pending against Member States related to the Landfill Directive (cases still open in December 2009: Belgium, Czech Republic, Estonia, France, Italy, Poland, Slovakia and the United Kingdom). In response to these systemic failures of Member States to properly implement the EU waste legislation, the Commission has taken a strategic approach. So-called "horizontal" infringements and court cases have been launched addressing the lack of national infrastructures and effective enforcement measures. Vast numbers of individual cases have been used as illustrations.*

⁷ Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste and landfills pursuant to Article 16 and Annex II to Directive 1999/31/EC.

This approach allows problems to be solved in more cases than by focusing only on individual landfill sites.'

3.2.3. Waste Incineration Directive (2000/76/EC)

Table 3: Number of petitions referring to selected articles of the Waste Incineration Directive (2000/76/EC)

Article/Legal provision	Content	Number of petitions referring to the article
Article 7	Incineration plants and co-incineration plants shall be designed, equipped, built and operated in such a way that the emission limit values determined according to or set out in different Annexes of the WID are not exceeded in the exhaust gas.	5
Article 4	No incineration or co-incineration plant shall operate without a permit to carry out its activities. The competent authority shall periodically reconsider and, where necessary, update the permit conditions. If an incineration or co-incineration plant does not comply with the conditions of the permit, in particular with the emission limit values for air and water, the competent authority shall take action to enforce compliance.	4
Article 6	A high level of environmental protection and human health protection requires the setting and maintaining of stringent operational conditions, technical requirements and emission limit values for plants incinerating or co-incinerating waste within the Community.	4
Article 10	Requirements for control and monitoring	2
Article 12	Access to information and public participation	2
Article 2	Scope of Directive	1
Article 5	Requirements for delivery and reception of waste	1
Article 8	Water discharges from the cleaning of exhaust gases	1
Article 9	Residues resulting from the operation of the incineration or co-incineration plant	1
Article 11	Measurement requirements	1
Article 19 & Article 20	Penalties and transitional provisions	1

In the most recent **implementation report**⁸ (for the period 2006-2008) on the WID (AEA 2011) there is no indication that new infringement cases in relation to the WID have been opened the last few years.

3.2.4. Integrated Pollution Prevention and Control Directive (2008/1/EC)

Table 4: Number of petitions referring to selected articles of the Integrated Pollution Prevention and Control Directive (2008/1/EC)

Article/legal provision	Content/Focus	Number of petitions referring to the article
Article 9	Member States shall ensure that the permit includes all measures necessary for compliance with the requirements of Articles 3 and 10 of the Directive for the granting of permits in order to achieve a high level of protection for the environment as a whole by means of protection of the air, water and land.	9
Article 2	Inconsistencies are often related to certain definitions, in particular to "installation" and "existing installation".	9
Article 15	Access to information and public participation in the permitting procedure have to be provided to enable public acceptance.	7
Article 3	General principles governing the basic obligations of the operator	6
Article 5	Requirements for the granting of permits for existing installations	6
Article 6	Requirements for permit applications	5
Article 8	Decisions by the competent authority	5
Article 7	Integrated approach to issuing permits	4
Article 18	Transboundary effects	3
Article 2	Compliance with permit conditions	2
Article 4	Permits for new installations	1
Article 10	Best available techniques and environmental quality standards	1
Article 13	Reconsideration and updating of permit conditions by the competent authority	1

⁸ Analysis of Member States implementation of IPPC and WI Directives Part II: Member States reports on their implementation of the Waste Incineration (WI) Directive 2000/76/EC for the period 2006 - 2008 - Final Report (AEA 2011).

The most recent **implementation report** on the IPPC Directive (for the period 2006-2008)⁹ states that *“The Commission supervised and supported Member States in the task of issuing permits in order to meet the Directive’s deadline of 30 October 2007. However, many Member States did not comply with this obligation. As a result of the lack of progress in the granting and reconsidering of permits, the Commission opened infringement cases against Belgium, Denmark, Greece, Spain, Italy, Malta, Portugal, Slovenia, Austria, France, Ireland and Sweden. The Commission has also focused efforts on ensuring the quality of the permits issued. A total of 61 IPPC installations across 16 Member States and 12 sectors covered have been examined in detail as case studies. The main problem identified by the Commission is the low proportion of permits reflecting the implementation of BAT.”*

3.2.5. Environmental Impact Assessment (EIA) Directive (85/337/EEC)

Table 5: Number of petitions referring to selected articles of the Environmental Impact Assessment (EIA) Directive (85/337/EEC)

Article/legal provision	Content/Focus	Number of petitions referring to the article
Article 4 & Annex I, II and III	According to the project type (see Annex I and II), projects shall be made subject to an assessment (screening). Project selection criteria are therefore defined to determine the need and detail of the assessment (see Annex III).	27
Article 5 & Annex IV	The developer has to supply, in an appropriate form, information concerning inter alia the overall project characteristics, the main alternatives, affected parts of the environment and measures to prevent an impact on the environment (see Annex IV).	27
Article 2	Measures have to be taken by the MS that before consent is given, projects likely to have significant effects on the environment by virtue, inter alia, of their nature, size or location are made subject to a requirement for development consent and an assessment with regard to their effects.	19
Article 8	Taking into consideration the results of consultations and the information gathered in the development consent procedure.	17
Article 6	The public shall be informed of the EIA procedure and arrangements for public participation. Early and effective opportunities shall be given to the public concerned to participate in the environmental decision-	16

⁹ Report from the Commission to the Council and the European Parliament on the implementation of Directive 2008/1/EC for the period 2006-2008 (European Commission 2010).

	making procedures. Reasonable time-frames for the different stages of participation shall be fixed.	
Article 9	Make information available to the public	13
Article 3	Direct and indirect effects of a project	6
Article 1	Definitions	5
Article 10	Access to a review procedure	5
Article 7	Arrangements for implementation	1

In 2009 a **study on the application and effectiveness** of the Environmental Impact Assessment (EIA) Directive (85/337/EEC)¹⁰ (European Commission, DG ENV, 2009) was published. It was the fourth review of the EIA Directive, building on reviews carried out in 2003, 1997 and 1993. The study examined the organisational and legal structures in place and their effectiveness, as well as the level of experience gained by carrying out EIAs in the old and new EU Member States.

According to this study, the screening mechanisms of the Directive (Article 4 & Annex I, II and III) give rise to some concern among the Member States, such as the lack of available capacity to ensure reliable screening and inconsistencies in applying thresholds and case-by-case screening. Both new and old Member States have reported some difficulties in identifying an appropriate level of application through the adopted screening mechanisms.

The study also points out that the strengthening of public participation introduced by Directive 2003/35/EC has led to more transparency in decision-making procedures and a more successful EIA procedure on the whole. The general impression is, however, that the experience gained with the application of the new provisions introduced by Directive 2003/35/EC is still limited. This is also reported by some Member States (Germany and the United Kingdom.)

In the context of an ongoing review of the EIA Directive, a wide public consultation was undertaken by the Commission (Jun-Sep 2010). The consultation process covered a broad variety of issues (e.g. quality of the EIA process, harmonization of assessment requirements between Member States, assessment of transboundary projects or projects with transboundary effects, role of environmental authorities, and development of synergies with other EU policies). The results of this public consultation process will be considered for the adaptation of the EIA Directive which is still ongoing.¹¹

¹⁰ Amended by Directive 97/11/EC, Directive 2003/35/EC and 2009/31/EC.

¹¹ See also : <http://ec.europa.eu/environment/consultations/eia.htm>.

3.2.6. Strategic Environmental Assessment (SEA) Directive (2001/42/EC)

Table 6: Number of petitions referring to selected articles of the Strategic Environmental Assessment (SEA) Directive (2001/42/EC)

Article/legal provision	Content/Focus	Number of petitions referring to the article
Article 3 & Annex II	Plans and programmes shall be made subject to an assessment. Selection criteria are therefore defined to determine the requirements and details of the assessment (see Annex II).	8
Article 6 & Article 8 & Article 9	Consultation and decision making processes have to be carried out involving the responsible authorities and the public and considering their opinion. Appropriate information has to be made available to them.	3
Article 2	Inconsistencies are often related to certain definitions, in particular the term "the public".	3

The Member States had to transpose the Strategic Environmental Assessment Directive into their national legislations by 21 July 2004. By then, only nine of the 25 MS had actually transposed the Directive. In December 2004, 15 non-communication infringement procedures were opened for failure to adopt legislation transposing the SEA Directive. Subsequently, five MS were condemned by the European Court of Justice (ECJ) for failing to transpose it. For the time being, there are no other ECJ cases pending.

By 2009, all MS had transposed the SEA Directive. The Commission carried out two studies to check the conformity of the Directive's transposition in the MS: a study concerning the report on the application and effectiveness of the SEA Directive (European Commission 2009b) and a Report on the application and effectiveness of the Directive on Strategic Environmental Assessment (European Commission, 2009c).

While these studies were elaborated, it was not possible to obtain information about which of the SEA Plans and Programmes were mandatory in the Member States. It seems that most Member States simply transposed the general categories of the Plans and Programmes as listed in Article 3(2) (a) of the SEA Directive.

The overall picture is that all Member States (with the exception of Malta) meet the Directive's requirements of making the draft plan/programme as well as the environmental report available to the public by the means prescribed in the SEA Directive. Since the SEA Directive does not provide detailed specifications about the procedures for public consultation, a wide range of methods are used. General experience shows that public consultation, when organised at an early stage of planning and when understood as a process, contributes to a higher level of acceptance of the Plans and Programmes, and therefore to the early identification and resolution of conflicts.

4. CASES FOR IN-DEPTH ANALYSIS

Based on the general evaluation of the petitions and the legal assessment, three main cases were identified which represent typical problems of waste management common to all European Member States.

- **Case 1:**

Incorrect permitting procedure for landfills – insufficient environmental impact assessment and public consultation

- **Case 2:**

Negative environmental impacts through improper operation of waste management facilities

- **Case 3:**

Deficiencies in the waste management system

As more than two thirds of the petitions concerning non-compliant permitting procedures relate to landfills, problems with these installations seem to be widespread. For case 1, only petitions dealing with landfills were therefore selected for in-depth analysis.

Since landfills and incinerators are the most relevant waste management facilities for case 2 (improper operation of installations), two petitions dealing with landfills and two petitions referring to incinerators were selected for in-depth analysis.

Case 3 is concerned with general deficiencies in waste management systems. Two specific regions with significant problems were selected for in-depth-analysis.

For each of these three cases, Table 7 lists four petitions which were selected for in-depth analysis.

Table 7: Petitions selected for in-depth analysis in the three identified cases

Case	Petition No.	Project	Country
Case 1: Non-compliant permitting procedure for landfills – Insufficient environmental impact assessment and public consultation	Petition 1405/2007	Suhodol Landfill	Bulgaria
	Petition 1709/2008	Pezinok Landfill	Slovakia
	Petition 0078/2007	Grammatiko and Keratea Landfills	Greece
	Petition 0727/2005	Landfill Path Head Quarry	United Kingdom
Case 2: Environmental impacts through improper operation of waste management facilities	Petition 1923/2009	Topoly/Kazashko Waste Incineration	Bulgaria
	Petition 1634/2008	San Bartolomé de Tirajana Landfill	Spain
	Petition 1525/2008	Stary Zamosc Landfill	Poland
	Petition 1266/2009	El Campello Waste Incineration	Spain
Case 3: Deficiencies in waste management system	Petition 0031/2006	Campania	Italy
	Petition 0991/2007	Campania	Italy
	Petition 1082/2008	Campania	Italy
	Petition 1144/2009	Gythio	Greece

4.1. Case 1: Incorrect permitting procedure

4.1.1. Petition 1: Suhodol landfill (BG)

Summary of petition

The petitioner claims:

- that an environmental impact assessment has not been carried out despite the fact that the Aarhus Convention imposes an obligation on contracting states to carry out obligatory environmental impact assessments for waste disposal sites of over 25,000 t capacity;
- that the Metropolitan Municipality, publicly supported by the Council of Ministers of the Republic of Bulgaria, carried out activities under a permit which had not come into force.
- that the disposal permit was issued on 3 December 2007 and was not enforceable until after the expiry of a 14-day period for appeals.

Facts

The petition refers to the Suhodol landfill for waste. Suhodol is a suburb of Bulgaria's capital Sofia and the Suhodol landfill had been the major landfill site for the municipal waste from Sofia. In the summer of 2005 the population of the suburb of Suhodol started its first protests against pollution caused by the waste disposal site there. In autumn 2005 the landfill Suhodol was closed. The city of Sofia started storing its waste at several other sites. In 2007 agreements with these other sites expired. As no other compliant landfill site and no alternative waste treatment option was found at the time, the Suhodol landfill was re-opened in late 2007 without an environmental impact assessment, in spite of protests from local residents (Grancharova 2008).

The Suhodol landfill consists of two cells (Suhodol I and II). While Suhodol I was operated without an environmental impact assessment during the period from 2007 to 2009, the second cell Suhodol II was opened after an IPPC permit (No. 255-HO/2008) had been issued. In 2009, the competent authority issued a positive EIA decision pertaining to the operation of Suhodol I. Subsequently, an IPPC permit (376 – H0-H0-A0/2009) was issued (Sofia Municipality 2010).

Latest status available

On 8th January 2010 the Bulgarian Supreme Administrative Court confirmed that the permit pertaining to the second stage of the Suhodol landfill operation was legal, meaning the dumpsite can and will be used until the construction of Sofia's waste treatment plant is completed (Sofia News Agency 2010). It is expected that the Suhodol landfill will have been filled up by mid 2012 (Sofia Municipality 2010).

Sofia Municipality has installed a waste separation plant on the Suhodol site, which aims at reducing the amount of waste to be landfilled. This is one of the first steps of an Integrated System of Municipal Waste Treatment Facilities for Sofia which will include, in the first phase, a composting plant and in the second phase - possibly - a plant for the mechanical and biological treatment of waste. In 2010 Sofia Municipality applied for the co-financing of phase 1 (Sofia Municipality 2010). This was approved by the European Commission on 01.07.2011 under Decision C(2011)4875.

According to information from the Bulgarian Delegation in Brussels, and based on the approved application for the Sofia Integrated System of Municipal Waste Treatment Facilities project, the Commission has currently put on hold the infringement procedure regarding waste management in Sofia, which had been triggered by the Petition against the Suhodol landfill in 2007¹².

Evaluation

The Suhodol landfill was re-opened since it was considered to be one of very few (or the only) option(S) available in late 2007 which promised to cause the lowest environmental or health impact when storing waste from Sofia. Obviously, this must be regarded as a transitional solution until proper waste treatment plants become operational.

4.1.2. Petition 2: Pezinok landfill (SK)

Summary of Petition

The petitioners are questioning the siting of a new regional municipal waste landfill in the town of Pezinok. The new dumpsite is just 280 metres away from housing. Residents and other potentially affected parties were not involved to the extent necessary in the first phase of decision-making about the proposed dumpsite (issuing of siting permission). The authorities also refused to divulge information referring to the decision on where the dump was going to be built, claiming that this was commercially sensitive information.

During the second phase of the decision-making process (granting of an integrated operating licence), public consultation and participation was seen as a merely symbolic procedure. Members of the public who raised their objections were told that they should have raised them at the time when it was decided where to site the dump. The parties concerned took the case to court. They feared irreparable damage to the environment and public health and they referred to an increased incidence of certain types of cancer in the town.

In a supplementary letter to the petition one of the petitioners reported that the head of the Regional Building Department in Bratislava (where the siting permission was issued) also had a private interest in issuing a permit for the landfill project (Čaputová 2009).

Facts

In Pezinok, a town some 20 km northeast of the Slovak capital Bratislava, a landfill site was constructed at the site of an old clay quarry. Two permits were required for this landfill, a so-called "siting permit" allowing the construction of a landfill at a certain location and an "integrated operation permit" allowing the operation of the landfill. The developer of the landfill applied for the "siting permit" on 7 August 2002. The Environmental Impact Assessment Directive (85/337/EEC) had to be transposed into Slovak legislation by 1 May 2004. As the application for the siting permit had been submitted earlier, it was legal to issue the permit, on the basis of pre-EU Slovak legislation, without informing and involving the population. The "siting permit" was issued on 7 May 2007.

The "integrated operation permit" was issued. The landfill was built and subsequently commissioned on 2 March 2009. For the issuing of this permit the provisions of the IPPC

¹² Personal communication : Svetlana Zhekova, Head of the Environment Sector of the Bulgarian Delegation to the European Commission, 04.07.2011.

directive were to be applied. Accordingly, the public concerned should have been given early and effective opportunities to participate in the procedure for issuing, changing or updating the permit. The Highest Court of the Slovak Republic repealed the "integrated operation permit" on 6 April 2009 on the grounds that the public must be given effective opportunities to participate in the permit procedure and that the issuing of the final environmental impact assessment was not in accordance with the law. The Highest Court ruled that a new procedure had to be started for issuing the licence on 28 May 2009.

The Constitutional Court, upon an appeal from the developer, suspended - in turn - the decision of the Highest Court.

Latest status available

After the case of permitting the Pezinok landfill was returned to the Slovak Highest Court, this Highest Court issued a resolution, dated August 17th 2010. This resolution suspended proceedings and posed five prejudicial questions to the Court of Justice of the European Union. The Slovak Highest Court also issued an injunction which prohibited the dumping of waste at the Pezinok landfill while the the proceedings were running at the Court of Justice of the European Union about the prejudicial questions. Currently the Court of Justice of the European Union is reviewing these questions. After the Court of Justice of the European Union issues its decision, the case will be returned to the Highest Court, which will decide about the legality of the reviewed permit.

Currently no waste is dumped at the new landfill. However, a permit has been issued which allows the dumping of 20 000 tonnes annually, including communal waste, at an old landfill in the Pezinok area, though originally this old non-compliant landfill had been closed in 2007 (Čaputová 2011).

Evaluation

The European Commission found in its statement the following:

- It was not required to make an environmental impact assessment according to Directive 2003/35/EC and to provide the relevant environmental information according to Directive 2003/4/EC during the permitting procedure for the landfill, as the application for the permit was submitted before the entry into force of the corresponding transposition regulations in Slovakia on 1 May 2004.
- Participation, as allowed under the transposition regulations of Directive 2003/35/EC (that is, Act No 24/2006 Coll. on environmental impact assessments, amended by Act 454/2007 Coll.), is significantly restricted. The European Commission therefore opened an infringement procedure against Slovakia in 2008 (case 2008/2385).
- EU legislation does not specify a minimum distance between a landfill site and residential areas (or inhabited houses). Distance alone does not provide sufficient proof that the landfill concerned poses a serious environmental risk.

A final conclusion on this case seems difficult, since there were different court rulings.

- One court ruling led to the operation of the landfill although another one required that an environmental impact assessment needed to be repeated

before commissioning the landfill. No solution seems to have been found yet to take property and environmental protection rights into consideration.

- During all phases of the project, the developer and different parts of the authorities have been reluctant to involve or even inform the interested and affected parties and the public.
- Existing information does not allow an exact assessment of the level of hazard to human health and environment imposed by the filling of the landfill.

The main conclusions from this case with respect to the involvement of the public and environmental information are:

- Especially with regard to legal transition phases, loopholes need to be filled.
- As examples from other Member States suggest, an active involvement of the public concerned seems beneficial also for operators.
- It also should be discussed if a minimum distance between a landfill site and residential area should be prescribed.

4.1.3. Petition 3: Grammatiko and Keratea landfills (GR)

Summary of Petition

The petitioner claims that the responsible Greek Authorities have authorised the construction of two landfills in the vicinity of Mavro Vouno at Grammatiko and Vragoni at Keratea in Eastern Attica (north and south respectively), which will cause considerable environmental damage in areas of great natural and historical value. An internet source states that the area for the Grammatiko landfill site was burned down in the 1980s and had been classified as green reforest zone. It also states that polluted water would endanger the Gulf of Euböa and the Marathon Lake, Athens's water reservoir. With respect to the historical value it is stated that the village of Grammatiko is located at equal distance to two archaeological sites of some significance, Rhamnous and Amphiarion, and less than 10 kilometres from the famous site of Marathon (Anonymous 2009).

According to the petitioner, several clauses of the Commission's decision on co-financing under the Cohesion Fund are not being adhered to, such as point 8 of Annex I of the Commission's decision, which refers to the beginning and end of the works, as well as items 1, 2 and 5b of point 12 "Special terms" of the same annex, which sets out certain specific conditions and deadlines which have to be respected.

Facts

In order to replace illegal landfills in the Attica region and to allow for an effective management of the growing waste arising from the Athens metropolitan area, Greek authorities in co-operation with EU authorities have planned to build several new waste treatment centres including landfills. Compliant landfills should be built as soon as possible and subsequently complemented by mechanical and biological treatment facilities (sorting, recycling and composting). These installations were to be co-financed by the European Union, bound to a strict implementation schedule. In Eastern Attica the sites Grammatika and Keratea were selected based on an environmental impact assessment. Some parties sued against the issuance of the permit.

The Greek Supreme Court delivered a positive judgement for the Grammatika landfill and treatment site, confirming that all rules regarding environmental impact assessment had been respected. The ruling for the Keratea site (at least as of April 2010) was still open. In his petition to the European Parliament the petitioner claims that the relevant EU legislation has been breached as the time-schedule for implementing the projects was not kept and therefore the co-financing was illegal.

The European Commission found in its statement that the delay was only caused by the pending court procedures while the concept of the waste management centres had not been changed.

Latest status available

On 10 January 2011 the Greek State Council allowed the continuation of the construction of the integrated waste management facility in Keratea on grounds of overriding public interests.

Currently there seems to be some disagreement among the responsible institutions over the tendering procedure for the construction of the mechanical and biological waste treatment installations:

- Keratea - Complex mechanical / biological waste treatment with a capacity of 127,500 tonnes per year (envisaged investment costs 50 million €).
- Grammatiko - Complex mechanical / biological waste treatment with a capacity of 127,500 tonnes per year (envisaged investment costs 50 million €) (Lyalya 2011).

Evaluation

Available information suggests that the Grammatiko landfill site and the waste management centre are a serious attempt to reduce the environmental and health impact caused by un-managed or badly managed waste as soon as possible.

Not all concerns of the potentially affected population seem to be justified - according to satellite maps the distance of the Grammatiko landfill site to the archaeological site of Rhamnous is around 5 kilometres; the landfill site is in a different watershed from the Lake Marathon. However, these rather small communities seem to be overwhelmed by the waste from a nearby metropolitan area of 4 million people.

Inferring from the researched information, it seems that the authorities try to find and implement the best solution for a difficult problem, in a way that is in full accordance with EU regulations. The available information is not sufficient enough to allow conclusions on what could have been done for a better involvement and reassurance of the local population.

4.1.4. [Petition 4: Landfill Path Head Quarry, Blaydon, Tyne and Wear \(UK\)](#)

Summary of Petition

The petitioner objects to a projected landfill of domestic, industrial and commercial waste at Path Head Quarry, Blaydon, Tyne and Wear. The petitioner questions the need for a new landfill in the area in a radius of two miles of Path Head, since 33 such sites already exist or

are planned. A map is presented which shows (Grey 2006) that roughly 10 % of the Blaydon-Ryton-Crawcrook area is covered by some 30 closed and operating landfill sites of different sizes.

The petitioner is concerned about the impact of this landfill project on the health of those living in the proximity of the proposed site. On the basis of further photos provided by the petitioner, the petitioner asked for explanation of the reason for water pumping activities on the landfill site and for the proof that the existence of groundwater was sufficiently taken into account. Furthermore, the fact was raised that the landfill cell was filled with waste while it was still partially flooded and an explanation of the function of the pond beneath the landfill was requested.

Facts

The future landfill operator received a permit for constructing and operating the Path Head Quarry landfill in Northern England as a landfill for non-hazardous waste on 31 August 2005. The permit was issued by the Environment Agency of England. In this permit detailed parameters for groundwater monitoring and monitoring frequency have been established, including groundwater assessment criteria and compliance criteria with groundwater quality (Environment Agency 2005).

The Environment Agency of England confirmed by letter of 28 June 2006 that the landfill was needed and that the procedure for selecting and developing the site were in full compliance with the EU regulations. It was also confirmed on 14 December 2007 that the groundwater within the local solid geology was at levels below the landfill site (Environment Agency 2007). Already on 4 October 2006 the petitioner, however, reported that part of the site was filled with water though there had been no rainfall during the preceding 2 months (Grey 2006). The petitioner also submitted photos on water pumping activities on the landfill site. Longstanding groundwater problems were identified (however, difficult to link to the landfill alone). A letter dated 13 January 2008 also stated that the hydrogeological risk assessment from November 2004 indicated that the groundwater is 19 m above the lowest waste deposits (Grey 2008). In 2008 (the landfill had been put into operation by then) excess concentrations of ammoniacal nitrogen, nickel and cadmium were found in site perimeter groundwater boreholes.

The UK authorities re-examined the hydro-geological investigations/modelling which were part of the environmental impact assessment and found that these were in line with the regulations. On 20.11.2009 the UK authorities confirmed that they are "confident" that the site is engineered to a high standard that mitigates the risks associated with stability and groundwater.

A hydrogeological risk assessment review of the Path Head landfill site from February 2009 by the landfill operator comes to the following conclusions:

- The development continues to pose a potential hazard to ground and surface water quality. Consequently, arrangements must continue to be made to collect the contaminated water and leachate that is generated by the site.
- The site continues to comply with the relevant requirements of the Landfill Regulations, 2002 (SITA 2009a).

Latest status available

The landfill operates under close monitoring of the adjacent ground water quality, which is performed under the surveillance of the Environment Agency.

Evaluation

The existing information suggests that this landfill is operated according to EU and national rules and that the authorities are checking its conformity with existing legislation. However, there might also have been weaknesses within the permitting procedure, since the operator confirmed that the installation “continues to pose a potential hazard to ground and surface water quality” (SITA 2009a).

So there remain some doubts on the quality of the original hydrogeological risk assessment from November 2004 or its analysis by the competent authority.

4.1.5. Main problems identified

The main deficiencies identified in the petitions are:

- A non-compliant landfill received a permit for re-opening on the grounds that no compliant waste treatment and disposal capacity was as yet available
- Stakeholder involvement is denied on the grounds that a fast permitting process is necessary to establish a compliant waste management system as fast as possible.
- The environmental impact assessment required for the plant permit was based on predictions which proved to be inaccurate.
- In several instances the information provided by authorities to interested and affected parties and their involvement seem to be imperfect.
- In supplementary material to one of the petitions there are indications for conflicts of interests within the competent authority.
- The neighbouring population still felt that, in spite of the environmental impact assessment, they and the environment were at risk.

The main underlying problems identified for case 1 include:

- There has been high pressure to issue permits and construct landfills as fast as possible, since no mature waste management system in full compliance with the new Waste Framework Directive has been in operation.
- New compliant landfills are needed as primary treatment options, since alternative pathways (incineration, recycling, biological treatment composting) have longer lead times and waste prevention has not been introduced fast enough. Partly linked to the need to speed up procedures, landfill operators and to some extent also competent authorities seem to be reluctant to fully inform and involve relevant stakeholders.
- The environmental impact assessment and the permitting procedure failed to convince the stakeholders that they and the environment are well protected.

The different relevant directives specify, as objectives of the permitting procedure, that only those waste management installations are put into operation which:

- do **not have a negative** environmental impact (Waste Framework Directive 2008/98/EC)
- **have no unacceptable** environmental impact (Waste Framework Directive 2008/98/EC)
- **prevent as far as possible** negative environmental impacts (Landfill Directive 1999/31/EC)
- **have no significant** environmental impact (IPPC Directive 2008/1/EC, Strategic Environmental Assessment Directive 2001/42/EC).

These different definitions make it unclear for the affected parties which level of protection they can expect and which level of impact they have to accept from the installation which is going to be built.

4.1.6. Best practices

Here best practice examples are given:

- for waste management systems which minimise the need for landfilling capacity
- for environmental impact assessments and permitting procedures

Best practices related to waste management systems: minimising the need for landfilling capacity

In terms of waste prevention, hundreds of different best practice examples can be identified throughout Europe (Bio Intelligence Service 2011b, Strange 2009, Dehoust et al. 2010). Two examples:

- The waste prevention programme of Ireland which mainly supports cleaner and leaner production and efficient, sustainable services as an example for national programmes (EPA 2010).
- And the Vienna waste prevention programme which during the last 13 years implemented several hundred waste prevention initiatives targeting mainly the private consumption side, but which also includes measures for production, services and public consumption (Stadt Wien 2011).

However, waste prevention alone will not make landfilling obsolete. In addition, recycling, incineration, biological and other treatment can help to reduce the amount of waste to be landfilled.

Figure 5 shows that the petitions are not evenly spread over the European Union. They are more frequent in some regions and less frequent in others. The same is true for petitions referring to the permitting of landfills.

The main reason for this is that some countries, especially in the new member states and in southern Europe, are introducing a waste management system based on compliant landfills while little alternative waste treatment capacity is available as yet (see Figure 6). Therefore these countries need new compliant landfill sites. In other countries like Belgium, Denmark, Germany, Netherlands, Austria and Sweden the landfilling of waste has already been replaced to a big extent by the incineration, recycling and composting of waste (see Figure 7). In these countries the need for new landfilling capacity is much lower. But also the impact on the environment of the landfills is usually lower as the waste which is still landfilled has been treated beforehand and is mostly inert.

Figure 6 : Share of treatment alternatives for municipal waste in the year 2009 in % for EU-Member States with a high share of landfilling (Eurostat 2011b)

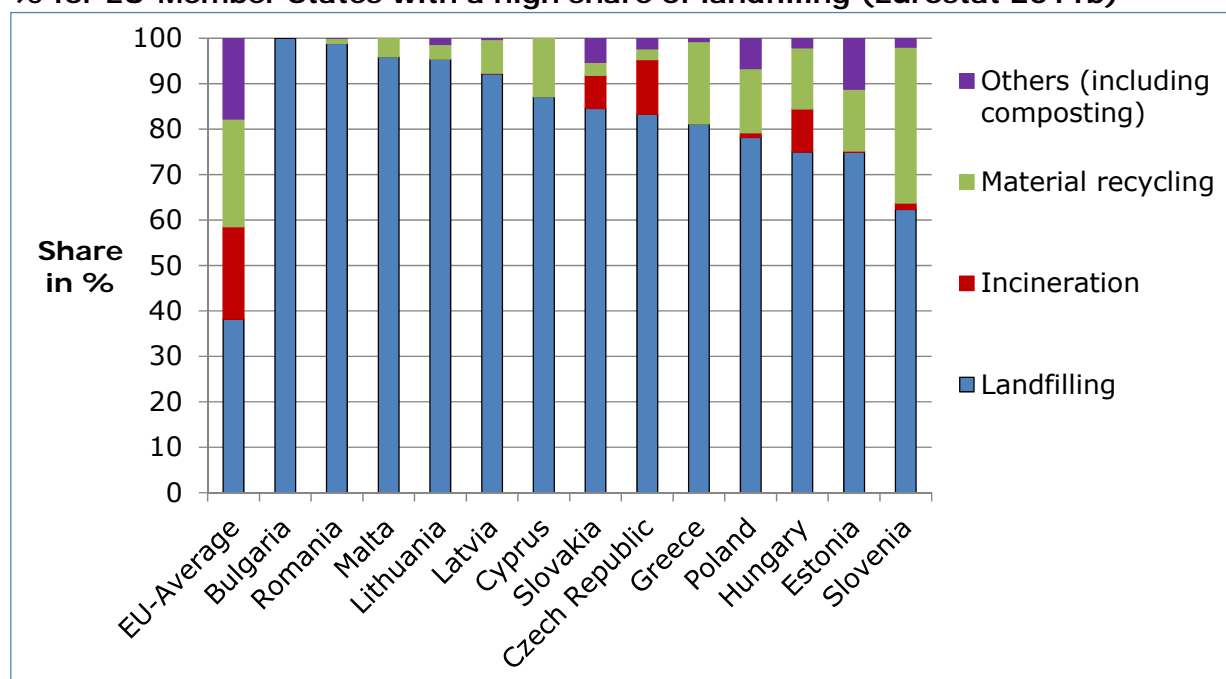
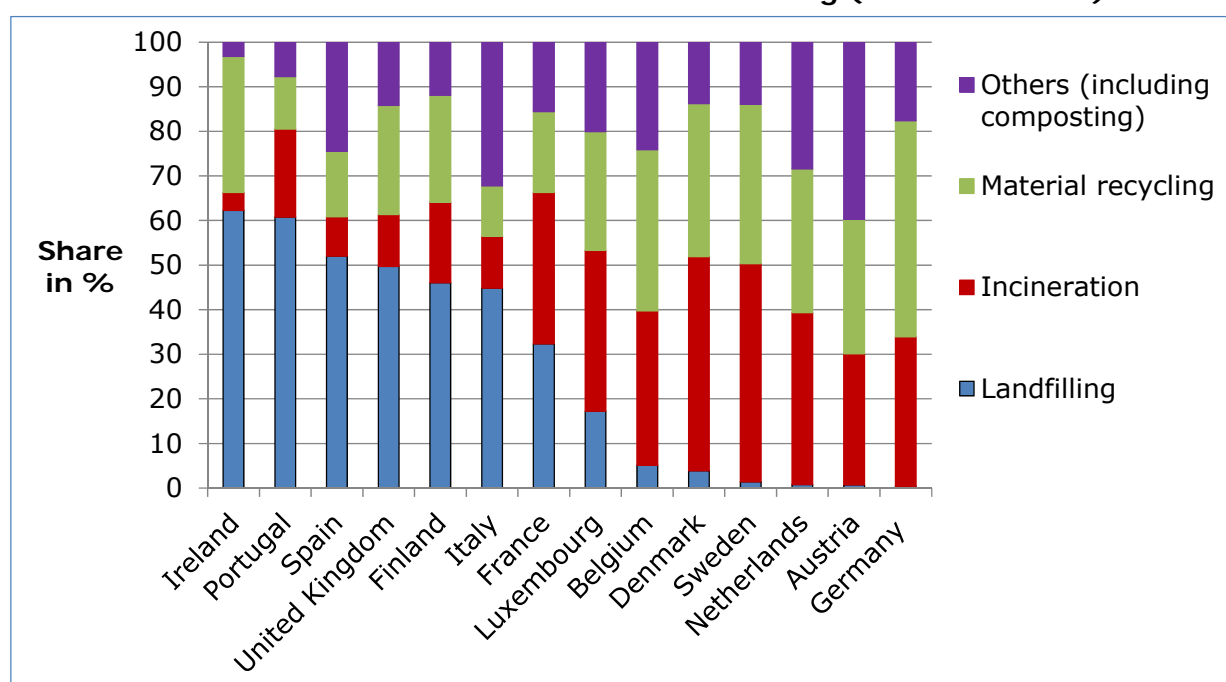


Figure 7 : Share of treatment alternatives for municipal waste in the year 2009 in % for EU-Member States with a low share of landfilling (Eurostat 2011b)



Another best practice example which reduces the environmental impact of landfills and thus increases their acceptability to the neighbouring population is the requirement that waste has to be treated before being landfilled, so that only inert waste is deposited on the landfills.

Best practices related to environmental impact assessments and permitting processes

The benefits of environmental impact assessments are widely recognised across all Member States. These benefits largely relate to:

- better integration of environmental concerns in the early stages of the project;
- saving public and private resources in terms of both money and time by providing a standardised procedure for investigating all environmental concerns;
- reduced environmental impacts by an optimisation of the project from the entire system's perspective (not only the direct impacts of the project are taken into account but also the role of the project within the development of the whole waste management system as well as impacts of the whole project's infrastructure) and by seeking recommendations for optimisation from a bigger "brains trust".
- increase in public acceptance of development projects;
- increased transparency in the environmental decision-making process (GHK 2010, COWI 2009, Umweltbundesamt 2006).

There are some indications that the Member States which are most successful with stakeholder involvement are those which have a long tradition of formal consent procedures (COWI 2009) - such as the Nordic countries - and which apply the following measures:

- Provision of sufficient personnel (legal and technical experts) for assuring a timely and efficient review of the EIA report;
- Publication of understandable and instructive information material as early as possible in the EIA process;
- Early involvement and active invitation of interested and affected parties e.g. by information and public discussion events, installation of an advisory board for citizens or launching a mediation process (Umweltbundesamt 2006)

Other projects can be identified as best practices when they achieve much more rather than just meet the minimum requirements and thus provide the affected parties with additional assurance that they and the environment are well protected: for instance, the waste incineration plant Spittelau, which was constructed in the middle of the metropolis Vienna, Austria. This construction was made possible by:

- An extensive stakeholder process (including a series of public meetings);
- The implementation of emission reduction technologies which went well beyond what was qualified as "best available technologies" at that time;
- The use of the released energy in the district heating system, so that the neighbours can benefit from the plant;
- The idea that the impact of the waste treatment installation, if any, should be borne by the waste producers;
- The design of the plant as a work of art by a world-known architect;
- To complement the project, a well-funded waste prevention programme, which is still running - more than a decade after commissioning the plant¹³.

¹³ Personal communication: Reinhard Siebenhandl, MA-48, Wien, 27. June 2011.

4.1.7. Recommendations

The problems described above and the best practices related to the permitting procedure for landfills have prompted the following recommendations:

- In order to minimise the need for landfills:
 - Waste prevention measures, a recycling system and a system for the (biological, thermal, chemical or physical) treatment of waste which cannot be prevented or recycled should be introduced as soon as it is affordable.
 - For the remaining waste, compliant landfills should be constructed as soon as possible. If this is limited by a lack of financial means, the European Union may investigate options to provide financial support.
- In order to improve communication between public authorities and the interested and affected parties, guidance should be given on:
 - The required capacity of staff dedicated to reviewing the EIA report;
 - Publication of understandable and instructive information material as early as possible in the EIA process;
 - Early involvement and active invitation of interested and affected parties.
- In order to avoid large uncertainties in the environmental impact assessment and in order to minimise consequences of possible errors:
 - Set up a quality control system of environmental impact assessment reports; this could, e.g., include the requirement that authorities or consultants undertaking this work are accredited;
 - A verification system should be established which confirms whether the predictions of the environmental impact assessment are realistic. Defining relevant requirements should be considered for the Environmental Impact Assessment Directive;
 - Permits have to be valid and in accordance with EU and national legislations and the administrative capacities of the national, regional and local authorities responsible for the permitting procedure. Otherwise the time frames set out in specific Directives for the adaption of permits, e.g. that the competent authority has to issue an integrated permit to existing installations covered by the IPPC Directive before the end of October 2007, are hardly enforceable. More specific EU-wide standards on the frequency, triggering, length and content of the permit reconsideration process should be introduced. Compliant permits are the basis for the compliant operation of a waste treatment facility (recommendation addressed to MS).
 - A further option to support and effectively survey the permitting procedure is the strengthening of waste management control and inspection capacities at EU-level (Milieu et al. 2009).
- In order to convince the affected parties that they are effectively protected and in order to guarantee a high level of protection for the neighbouring population and for the environment all over the EU, further development of the standards for environmental protection should be considered. These standards may include:
 - standards for minimum distances between landfills and residential or other special zones;

- standards for simulating the impacts of the landfill on the neighbouring environment and population (e.g. standards for methods for simulating the spread of hazardous substances into the groundwater or of dust in the air).

Table 8: Problems and recommendations for successful approaches to the permitting process

Problem		Recommendation regarding need for action		Legislative options	Other options
	Responsibility		Addressing		
Lack of treatment capacities leading to illegal disposal (alternative options to landfills could not be introduced fast enough)	Illegal activity, operators, Member States (responsible authorities)	Waste prevention as well as recycling and recovery should be introduced as soon as it is affordable according to the waste hierarchy of the WFD / Set up monitoring system for wastes	European Commission	-	Additional funds for financing these measures and implementation in practice
			Member States (responsible authorities)	Lay down minimum requirements for waste prevention and recycling/recovery at national level (including deadlines for implementation) / Significant penalties for illegal waste disposal	Introduce and enforce monitoring of waste streams (from the producer to final treatment)
Missing involvement of the affected parties during the permitting procedure / Sometimes the responsible authority appears to be biased	Member States (responsible authorities)	Providing administrative capacities and exchange of knowledge / Early involvement and active invitation of the affected parties	European Commission / Member States (responsible authorities)	-	Promote the elaboration of guidance documents/ Guidance should be given on: publication of understandable and instructive information material as early as possible in the EIA process; early involvement and active invitation of interested and affected parties.
Obsolete or non compliant permits of waste treatment facilities (e.g. operation not in accordance with the requirements of the IPPC Directive as recommended in Article 5 of the IPPC Directive by 30 October 2007)	Member States (responsible authorities)	Adaptation of permits in time by providing administrative capacities and exchange of knowledge	European Commission	-	Additional funds for capacity building
			Member States (responsible authorities)	Further specification of the permit reconsideration process (e.g. in the national implementation of the IPPC Directive) regarding its frequency, triggering, length and content	Enforce monitoring and guidance of the permitting procedures at national level
Errors during the environmental impact	Member States (responsible authorities)	A quality assurance system for the	European Commission / Member States	Lay down minimum requirements at national level	Providing sufficient manpower for reviewing the EIA-

Problem		Recommendation regarding need for action		Legislative options	Other options
	Responsibility		Addressing		
assessment		environmental impact assessment reports should be introduced (including the need for accreditation) / A verification system which confirms whether the predictions of the environmental impact assessment prove to be true should be established	(responsible authorities)	regarding the quality assurance system for the environmental impact assessment reports and the verification system for predictions of the environmental impact assessment	report / Strengthening waste management control and inspection capacities at EU-level
Insufficient conviction of affected parties concerning the proper protection of the environment and human health (via the environmental impact assessment and the permitting procedure)	Operators, Member States (responsible authorities)	Set up standards for minimum environmental requirements (e.g. standards for - minimum distances between landfills and residential or other special zones - environmental impact simulation methods)	European Commission / Member States (responsible authorities)	-	Promote joint enforcement projects, promote exchange of knowledge and best practices at national and European level / Promote the elaboration of guidance documents e.g. on the standardisation of minimum distances between landfills and residential or other special zones.

4.2. Case 2: Negative environmental impacts through improper operation

4.2.1. Petition 5: Varna incineration plant (BG)

Summary of petition

The petitioner refers to the severe pollution and associated risks to the health of the local population caused by an incineration plant in Varna. The plant is located in the immediate vicinity of the villages of Topoli (650 metres) and Kazashko (900 metres) in the province of Varna. The petitioner points out that the operation of the incineration plant entails serious breaches of applicable EU legislation and that his complaints to the responsible Bulgarian authorities have not produced any satisfactory results.

Facts

According to the Bulgarian Waste Management Programme 2003-2007, the incineration facility in Varna does – as a whole – not fulfil the requirements for the minimal temperature of incineration and the residence time of combustion air, and it is not equipped with the necessary pollution abatement equipment.

In the Bulgarian National Waste Management Plan 2009-2013 there is the information that the installation in question was closed down in 2006, together with other old non-compliant facilities.

Latest status available

Contacts for the Bulgarian authorities state that the facility in question is an installation for the disposal of animal carcasses with a valid permit according to the IPPC Directive. Inspections are carried out annually by the Regional Inspectorate of Environment and Water. The Varna Basin Directorate perform checks on the spot, including inspections of the emission control system.

In the period 2009 to 2010 the operator took measures to improve the situation – namely the odour emissions – by installing several items of cleaning equipment. In the statement it is pointed out that the summer season and higher temperatures create conditions for increasing the release and spread of odour emissions outside the site, and that the inspections are carried out in order to prevent and solve these problems.

Evaluation

Currently - in 2011 - seven installations exist in Bulgaria, falling within the scope of the Waste Incineration Directive (WID) and with relevant permits, all of them recovering the heat generated in the incineration process. Both the national legislation and the permits appear to specify the necessary requirements and measures to ensure compliance with the WID as regards hazardous waste reception, operating conditions and emission limit values. Several provisions have been made to minimize the impact of residues from incineration plants. The measurement requirements relating to emissions to air and water laid down in national legislation are identical to the requirements laid down in the WID. The annual reporting requirement is laid down by national legislation and the content of these reports is specified. No major shortcomings have been observed in the implementation of the WID (AEA 2011).

As for the waste incineration plant near Topoli/Kazashko, in the area of Varna, it was assumed that its operation was not in line with the provisions of the waste incineration and the IPPC Directive. The investigation carried out after the petition revealed that the facility in question is an installation for the disposal of animal carcasses with a valid permit according to the IPPC Directive. The Regional Inspectorate of Environment and Water points out that problems with odour emissions have been identified in the past. These problems are now tackled via on-site inspections.

4.2.2. Petition 6: Alicante incineration plant (ES)

Summary of petition

The petitioner expresses concern over toxic emissions from the Campello incinerator, suggesting an infringement of Directive 2000/76/EC of 4 December 2000 on the incineration of waste.

Facts

In its conclusion and reply to the Petitions Committee in November 2010 the EC stated that, according to reply of the Spanish authorities, the installation falls under the scope of the IPPC Directive, although it is not a waste incineration plant but a landfill by definition. The installation has a biogas facility in which biogas is produced as a result of the treatment of organic waste. The biogas is incinerated. This activity does not fall under the scope of the WI Directive since it does not cover the incineration of gaseous substances. The operators of the installation hold a valid IPPC permit issued on 19 July 2005 by the competent authority. This permit sets out the rules for the operation of the installation which are in compliance with the requirements of the IPPC Directive. The last inspection was carried out by the competent authority on 27 October 2009.

It is stated in the reply by the national authorities that there is a lack of regulation on odour emissions both at national and EU level. In order to address the complaints of the nearby residents, the competent authority has requested the operator to take additional measures against these emissions.

Latest status available

According to the answers and the reply of the EC to the petition, the facility in question is not a waste incineration plant but a landfill. The facility falls under the scope of the IPPC Directive and according to the Spanish authorities, its operation is in compliance with the requirements of the IPPC Directive. In the biogas facility in which biogas is produced as a result of the treatment of organic waste the biogas is incinerated. This activity does not fall under the scope of the Waste Incineration Directive since it does not cover the incineration of gaseous substances. No additional information could be provided by the national authorities that were contacted.

Currently, in mid-2011, the waste treatment plant and the landfill of the town El Campello are in valid operation. Since 2009 the facility has been dealing with waste from Marina Alta, Marina Baja und El Campello with a population of about 350,000. According to the waste management plans of the Region of Valencia the capacity will be sufficient until the year 2020. The site has a valid permit according to the IPPC Directive (dated 19th of July 2005).

The permit was adapted several times within the last few years with a view to optimize the operation (Generalitat Valenciana 2011).

Complaints concerning odour and smells still occur in residential and other areas around the site, e.g. in the coastal region of Cala d'Or situated 1.5 km from the site. An analysis conducted by the 'Instituto Nacional de Toxicología y Ciencias Forenses' shows that concentrations of emissions are lower than the limit values, causing no obvious harm to human health. The problem is also tackled by installing additional capacities for exhaust air treatment (biofilters and chimneys) and improved pre-treatment of waste (e.g. delivery and handling only in closed containers) (Generalitat Valenciana 2011).

Evaluation

Spain has 82 installations falling within the scope of the WID. The total permitted waste throughput capacity is 4,246 ktonnes/year. 25 cement kilns co-incinerate a total of 1,569 ktonnes of waste/year, including waste oils, solvents, wood waste, textiles, fluff, plastics, RDF and other waste. Spain appears to ensure compliance with the provisions of the WID regarding the normal and abnormal operating conditions, emission limit values for emissions to air and water, residues, monitoring, control and measurement requirements and public participation procedures by means of relevant requirements laid down in national legislation. For some aspects, there are exemptions or more stringent requirements are adopted, in accordance with the corresponding provisions of the Directive (e.g. measurement requirements for air and water emissions). More frequent measurements are required for dioxin, furan and metal emissions to air and for dioxin and furan emissions to water (at least quarterly). Public participation in the permitting process is ensured by national legislation. Overall, no major shortcomings have been found in the implementation of the WID (AEA 2011).

On the basis of the information provided by the national authority, the Commission was not able to identify a breach of EU environmental law.

4.2.3. Petition 7: San Bartolomé de Tirajana landfill (ES)

Summary of petition

The petitioner complains that a landfill in San Bartolomé de Tirajana (Canaries) does not comply with European legislation on solid wastes (Council Directive (EC) 1999/31/EC of 26 April 1999 on the landfill of waste, and Council Decision 2003/33/EC of 19 December 2002 establishing criteria and procedures for the acceptance of waste at landfills). In addition, the petitioner complains that even though the municipal authority has received European funds for the improvement of waste recycling such improvement has not been carried out. The landfill is reported to have polluted water courses, and according to the petitioner, more cases of cancer have been recorded here than in other parts of Spain.

Facts

According to the conclusion and reply by the EC with regard to this petition to the Petitions Committee in June 2010, the situation of the Juan Grande waste tip in San Bartolomé de Tirajana (an "existing installation" within the meaning of Article 2(4) of the IPPC Directive) was examined as part of the infringement procedure launched against Spain to assess compliance with the obligations of Article 5 of the IPPC Directive. An assessment of the replies provided by the Spanish authorities in response to the ensuing Reasoned Opinion

confirmed that a significant number of existing installations in Spain were still operating without valid IPPC permits. Since this situation is in breach of the relevant obligation under Article 5(1) of the IPPC Directive, the Commission agreed on 29th October 2009 to refer Spain to the European Court of Justice for failure to fulfil its obligations under that Directive. The case is now before the European Court of Justice (European Parliament 2010e).

In the infringement case C-48/10 (of January 2008) the European Court of Justice declared that the Kingdom of Spain had failed to fulfil its obligations under Article 5(1) of that IPPC Directive. Under Article 5(1) of Directive 2008/1/EC, the period for complying with the obligation to adapt existing installations to the requirements of the IPPC Directive, by granting an integrated environmental authorisation, ended on 30 October 2007. In January 2010 it was stated that, according to the information supplied by the national authorities in their reply to the reasoned opinion, 533 existing installations were still operating without mandatory IPPC authorisation on the date when the period prescribed in that opinion ended, and that the Kingdom of Spain had still not fulfilled the obligations arising from that provision.

In the Spanish National Waste Plan 2007-2015 no detailed information about the landfill in San Bartolomé de Tirajana (Canaries, Spain) is given.

Latest status available

In the written question E-2588/2008 to the EC, complaints about the landfill site in question were made, mainly with allegations that the landfill did not, at the time, conform to the European IPPC Directive. A high level of conductivity parameters in the leachate, high levels of anionic detergents, aluminium, arsenic and inhibitory substances as well as greenhouse gas emissions were assumed. No additional information could be provided by the national authorities which were contacted.

Evaluation

In the past, there have been problems concerning the transposition of provisions on acceptance criteria and procedures into national law. As stated in the last implementation report from 2007 (for the period 2003-2005), the Council Decision 2003/33/EC has not been legally implemented at the national level, although the Royal Decree 1481/2001, transposing the requirement of Directive 1999/31/EC, includes general considerations on waste acceptance criteria and procedures as specified in Annex II of the Directive, i.e. defining a compulsory in situ verification. Elements of basic characterisation and compliance testing are also addressed in the Royal Decree, albeit not compulsory. The responsibility for the implementation and the enforcement of the Decree lies with the authorities of the autonomous regions. The central government does not provide comprehensive information on the implementation of waste acceptance criteria and procedures in the regions, although it has stated that waste acceptance criteria are beginning to be included in "most" landfill authorisations without further substantiation. From the information available, it appears that the requirements of the Council Decision are at best very partially applied in practice (European Commission 2007a).

The conclusion of the EC to the Petitions Committee is that a breach has been identified of EU environmental law. The complaint raised in the petition is covered by infringement case C-48/10 (failure concerning the implementation of Article 5(1) of Directive 2008/1/EC on the adaptation of existing installations to the requirements of the IPPC Directive). In the past,

the Kingdom of Spain was convicted also in other cases which concerned the non-compliant operation of landfills (e.g. C-398/02, C-157/04, and C-361/05).

4.2.4. Petition 8: Stary Zamosc landfill (PL)

Summary of petition

The petitioner describes the situation of a waste disposal site in the town of Stary Zamosc in eastern Poland, which appears to be in conflict with the provisions of Council Directive 99/31/EC on the landfill of waste. The petitioner states inter alia that the site is harmful to the health of the local population and causes groundwater pollution. Furthermore, the waste site is not only in the immediate vicinity of a residential area but is also near a national park.

Facts

According to the reply of the EC to the petition, the municipal landfill in question is located at Kolonia Dębowiec in the commune of Skierbieszów, which borders on the municipality of Stary Zamość. The landfill is part of the amojski administrative district (Matejczyk M. 2011).

According to accessible information, waste dumping started in the year 1974 on the basis of a siting decision and continued on the basis of permissions from the years 1981 to 1995. During this time probably only wastes from the closest neighbourhoods – a few hundred tonnes annually – were disposed of (Matejczyk M. 2011).

The landfill has been operating under a new permission since 1995 and has a maximum capacity of 1,150,000 m³ (Institute of Environmental Protection 2011).

In 2008, monitoring carried out at the landfill included tests on groundwater, leachate and landfill gas, an analysis of the composition and structure of the waste and measurements of the settling of the landfill site. Groundwater and leachate testing is carried out once per quarter. The facility is subject to systematic inspections by the Provincial Environmental Protection Inspectorate. According to the Polish authorities, this is in accordance with the national Regulation of the Minister for the Environment of 9 December 2002 on the scope, timing, method and conditions for the performance of landfill monitoring.

The municipal landfill at Kolonia Dębowiec in the municipality of Skierbieszów, which is the landfill in question, is mentioned in the Waste Management Plan 2010 of Poland (from 2006), but not described in detail.

Latest status available

After an ecological inspection in 2002, the landfill operator made the decision about an adaptation of landfill to current legal requirements until 2004. In the year 2003 he confirmed the operating instructions, and in 2004 a permission on the retrieval and disposal of wastes was issued, and later, in 2007, an integrated (IPPC) permission valid until 2010. Until 2009, about 880,000 Mg of wastes were placed there (Matejczyk M. 2011).

At present, the landfill has an integrated permit according to the IPPC Directive and is operated with a sealing system and a water and gas drainage layer. Monitoring is carried

out of the leachate and groundwater. It is planned to close the landfill after 2014 (Institute of Environmental Protection 2011).

Now, on the terrain of the landfill site, the Regional Waste Treatment Plant will be built which will start operation from 2013. This plant will accept 50,000 Mg/year of unsorted municipal wastes (Matejczyk M. 2011).

Evaluation

Problems regarding the transposition of provisions of the Landfill Directive into national law and the application of national policies have been spotted in the past. In its last implementation report from 2007 (for the period 2003-2005) the EC noted that the relevant regulations were not enforced in practice. Moreover, there is no clear picture regarding the number of landfills in Poland and their permitting status. It may thus be assumed that there is a substantial number of landfills, mainly municipal landfills, which are not in line with the current Polish and EU legal requirements (European Commission 2007a).

The core problems of the complaint were the small distances to habitable buildings and the way of operating, both causing difficulties for the near public (Matejczyk M. 2011).

In view of the information provided by the Polish authorities, the Commission concludes that the landfill site at Kolonia Dębowiec operates under a valid permit and that the last inspection held in October 2010 did not confirm any of the irregularities alleged by the petitioner.

Several steps for better control and monitoring of the landfill in question were initiated by the Polish authorities to improve the situation, notably on-site inspections. The investigation carried out in response to this petition did not raise any additional complaints against this landfill. In its conclusion the EC did not identify a breach of EU environmental legislation.

4.2.5. Main problems identified

As confirmed by the implementation reports and several infringement cases, it is obvious that proper operation of waste treatment facilities (without endangering the environment and human health) is not necessarily put into practice everywhere in the European Union.

Identified negative impacts on the environment may be caused by:

- Incomplete transposition of EU waste policies into national law;
- Incomplete application of national waste legislation;
- Illegal operation of a waste treatment facility.

4.2.6. Best Practices

The European IPPC Bureau has published a reference document on the best available techniques for waste incineration (European IPPC Bureau 2006). In addition to the thermal treatment process of the installation the reference document covers:

- *the reception, handling and storage of waste;*
- *the effect of waste pretreatment on the selection and operation of waste incineration processes (in some cases, this includes a description of the techniques applied);*
- *applied flue-gas treatment techniques;*
- *applied residue treatment techniques (for the main residues commonly produced);*
- *applied waste water treatment techniques;*
- *some aspects of energy recovery, the performance achieved and the techniques used.*

A similar document on landfills does not exist. Instead, the Landfill Directive provides certain technical requirements for the development, operation and closure/aftercare of all classes of landfills. In respect of the technical characteristics of landfills, the Directive contains, for those landfills to which the IPPC Directive is applicable, the relevant technical requirements in order to elaborate in concrete terms the general requirements of that Directive. The relevant requirements of the IPPC Directive shall be deemed to be fulfilled if the requirements of the Landfill Directive are complied with (UK Environmental Agency 2007).

In general, it is difficult to pick out best practice examples from the many waste management installations which are in line with the EU waste legislation. Many of them fall under the scope of the IPPC Directive and are subject to having their emissions reported according to the provisions of the Pollutant Release and Transfer Register (PRTR). This register was introduced to improve public access to information on the environment and thus contribute in the long term to the prevention and reduction of pollution. The register contains information on releases of pollutants to air, water and land, as well as transfers of waste and pollutants, where emissions exceed certain threshold values and result from specific activities. The information gathered at national level by Member States is reported to the Commission on a regular basis.

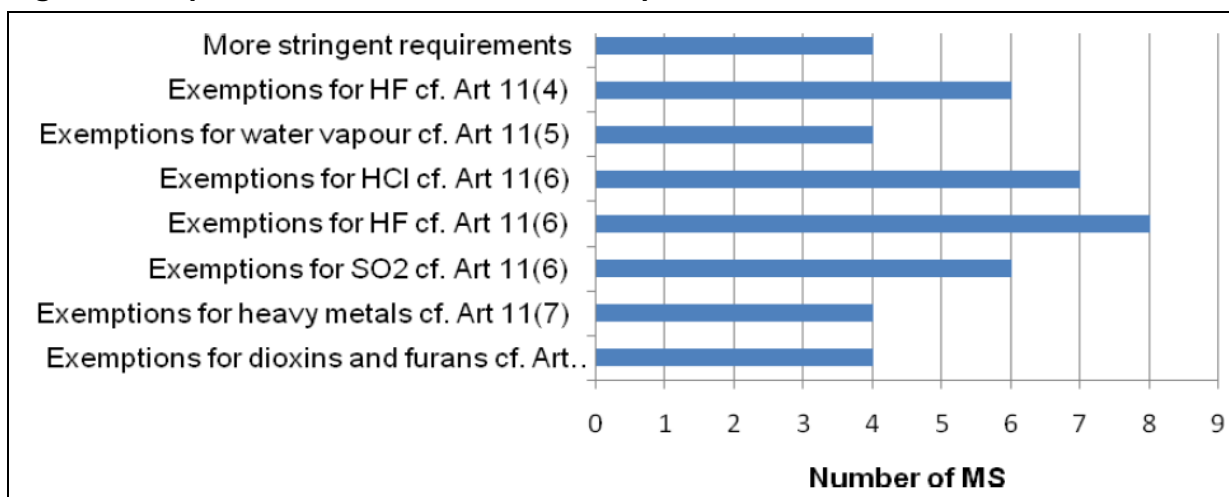
Waste incineration

Germany, Sweden, Austria, Denmark, Belgium, Luxembourg, England and the Netherlands are examples of Member States where waste incinerators have played an important role in national waste management for many years. The following examples of national policies can be seen as best practices:

- The Austrian waste incineration ordinance (BMLFUW 2010) requires from the operators to continually measure at least 13 parameters and thus the quality of the flue gas. This enables the public authorities to prescribe on-line reporting and substantially increases the monitoring efficiency.
- The German ordinance on the incineration and co-incineration of waste (BMU 2003) requires from the operators to continually measure at least eight parameters and thus the quality of the flue gas. Specific requirements concerning the control and monitoring of emissions are defined.

The provisions within waste regulations at the level of the MS are often, with a view to best practice, defined in a stricter way than required by EU waste policies. By way of example, the following chart shows the Member States' reported deviations from the requirements for air pollutant measurements and process operation parameters (as specified in Art. 11(2) of the WID):

Figure 8: Reported deviations from the requirements of the WID



HF... hydrogen fluoride; HCl... hydrogen chloride ; SO₂... sulphur dioxide

Austria, Belgium, Spain and France have more stringent measurement requirements, several other countries have made exemptions. Austria imposes continuous measurement of Hg, whereas Belgium and Spain increase the frequency of the measurements of dioxins and furans (AEA 2011).

Landfilling

Landfills are an important option of waste treatment in all Member States and best practice examples can be found all around the EU when looking at their construction process. Crucial aspects for the construction of a landfill are: operation in accordance with national legislation and pretreatment of waste before landfilling.

The following examples of national policies can be considered good practice:

- The Austrian landfill ordinance (BMLFUW 2008) sets out criteria which have to be met for the waste input to landfills (e.g. limitation on the total organic carbon content), certain conditions for the landfill location and construction as well as requirements for the control and monitoring of emissions.
- The Environment Agency of England and Wales (EA 2007) has issued a guidance document with more specific recommendations on how to design and operate a landfill with a minimum environmental impact.

4.2.7. Recommendations

The limitation of direct emissions to protect human health and the environment as well as the control and monitoring of these emissions and related processes are of major importance to guarantee the proper operation of waste treatment facilities.

The following needs for action can be identified, on the basis of the evaluation carried out for this study, when trying to ensure the compliant operation of waste treatment facilities:

- **Permits** have to be valid and in accordance with EU and national legislations and the administrative capacities of the national, regional and local authorities responsible for the permitting procedure. Otherwise the time frames set out in specific Directives for the adaptation of permits, e.g. that a competent authority has to issue an integrated permit to existing installations covered by the IPPC Directive before the end of October 2007, are hardly enforceable. Compliant permits are the basis for the compliant operation of a waste treatment facility (recommendation addressed to MS).
- **Control and monitoring** of emissions are part of the provisions defined in the European waste legislation (e.g. the Landfill Directive). In this context, on-line (continuous) measurement of key emissions and process parameters has to be implemented to prevent incorrect operation of a facility and limit environmental impact (addressed to national responsible authorities in the MS).
- The **waste acceptance** criteria as defined in Council Decision 2003/33/EC as well as the input criteria for incineration and co-incineration as defined in several national legislations have to be enforced to keep unwanted substances away from the operation process. Furthermore the application of related sampling and testing standards has to be ensured (addressed to national responsible authorities in the MS).
- On-site **inspections** of waste treatment facilities have to be enforced to monitor compliance with provisions defined in the permit and relevant legislation. Therefore administrative capacities for the national, regional and local authorities responsible for the on-site inspections have to be provided (addressed to MS).

Table 9: Problems and recommendations for successful approaches in the future

Problem		Recommendation regarding need for action		Legislative Options	Other options
	Responsibility		Addressing		
Obsolete or non compliant permits of waste treatment facilities (e.g. operation not in accordance with the requirements of the IPPC Directive as recommended in Article 5 of the IPPC Directive by 30 October 2007)	Member States (responsible authorities)	Adaptation of permits in time by providing administrative capacities and exchange of knowledge	European Commission	-	Additional funds for capacity building
			Member States (responsible authorities)	Further specification of the permit reconsideration process (e.g. in the national implementation of the IPPC Directive) regarding its frequency, triggering, length and content	Enforce monitoring and guidance on permitting procedures at national level
Direct emissions coming from the operation of waste treatment facilities	Operators, illegal Activity	Implementation of on-line measurement of key emissions and process parameters	Member States (responsible authorities)	Lay down minimum requirements at national level regarding the measurement of emissions and process parameters of all	-

Problem		Recommendation regarding need for action		Legislative Options	Other options
	Responsibility		Addressing		
				different types of waste treatment (as e.g. defined in the "old" WID 2000/76/EC)	
Obsolete or non compliant operation of waste treatment facilities (e.g. existing landfill sites were not adapted via an approved site-conditioning plan according to the time periods as required in Article 14 of the Landfill Directive)	Operators, illegal Activity	Intensify MS inspections of waste treatment facilities and provide administrative capacities and exchange of knowledge	European Commission / Member States (responsible authorities)	-	Additional funds for capacity building / Support MS and responsible authorities to monitor and guide inspection procedures for waste treatment facilities
Unwanted substances in waste treatment facility operations	Operators, Member States (responsible authorities)	Establish binding rules for sampling and acceptance criteria for waste input / Further standardisation of waste acceptance criteria	Member States (responsible authorities)	Lay down minimum requirements at national level for waste inputs for all different treatment options (as e.g. defined in Council Decision 2003/33/EC for landfills)	-

4.3. Case 3: Deficiencies in the waste management system

4.3.1. Petitions 9-11: Regional waste management (IT)

The European Parliament has received a large number of petitions referring to waste management problems in Campania. The petitions deal with complaints about numerous deficiencies in waste management, covering all the three cases are discussed in the present study. For the purpose of case 3, three typical petitions have been selected. Given their common regional background, the three petitions have been analysed and evaluated together.

Summary of Petition 9: Campania

The existing landfills as well as storages of hazardous waste emit dioxins, which causes serious health and environmental hazards. In addition, there are numerous illegal landfill sites. The regional and national authorities are not able to enforce safety regulations to prevent said hazards. The problem is intensified as waste disposal is a source of illicit profit for criminal organisations (European Parliament 2010i).

With regard to waste management, the focus of the petition is on the existence of illegal landfills. The main reasons for illegal landfilling are usually the lack of legal landfill capacity or criminal activities.

Summary of Petition 10: Campania

There is no separate waste collection system for municipal solid waste. For the large waste quantities, there are not enough landfill capacities. This leads to overfilled landfills and the discarding of waste in public places. The consequences are hazardous for public health (European Parliament 2010i).

The petitioner complains about shortcomings of waste collections as well as waste disposal systems. Waste which is not collected is piling up in public places, as the waste producers (households) have no other ways of disposal. Collected waste for which there are no appropriate disposal facilities, tends to end up in illegal landfills (European Parliament 2010i).

Summary of Petition 11: Naples/Campania

Along roadsides, waste (e.g. car tyres) is incinerated, which causes air emissions that have toxic effects on human health and the environment. The authorities have failed to take any action to prevent this (European Parliament 2010i).

Burning of waste is an illegal way of getting rid of waste for which no other disposal option exists.

Facts

- **Waste generation**

There are different data about the generation of household waste for the region of Campania and Naples. While the inhabitants of Campania produce 485 kg of household waste per year (Gryl 2010), the inhabitants of Naples produce an average of about 800 kg/inh*y (Merkies 2010). By comparison, the Eurostat indicator 2009 on Municipal Solid Waste provides average data on MSW generation in the EU27 of 512 kg/inh*y (Italy: 540 kg/inh*y).

- **Waste collection**

In December 2007, a waste crisis began in Naples when municipal workers in charge of the waste collections went on strike, which resulted in waste piling up in the streets (Bio Intelligence Service 2011).

With regard to separate collections, the Italian government provided data that 73 municipalities in Campania have reached a percentage of separate waste collection of 50% - 90%, while an additional 134 municipalities have achieved percentages between 25% - 50% (European Court of Justice 2010).

- **Waste recovery**

In Naples only 8% of municipal solid waste goes to recycling. By comparison, the Eurostat indicator 2009 on Municipal Solid Waste provides an average percentage for MSW recycling in the EU27 of 23% (Italy: 12%) (Merkies 2010).

- **Waste disposal**

The main disposal path for municipal solid waste is landfilling and intermediate storage. Due to an unclear legal status and environmental problems, a number of old landfills were closed. In some cases, these sites were used for the building of new waste treatment facilities. The waste law (Decree 90) of July 14th 2008 authorised the establishment of ten new landfills and four incinerators (Merkies 2010).

The closure of old landfills together with delays in the construction of new landfills have led to a temporarily lack of landfill capacity. This has resulted in the intermediate storage of MSW in municipal storage places (an estimated 120,000 t) (European Court of Justice (2010).

Furthermore, 6 Million Ecobales (waste filled-bales designated for incineration as waste derived fuels) have been produced, but are still in storage because there is a high danger of contamination with hazardous waste (Merkies 2010).

Despite contracts for the construction of waste treatment plants negotiated prior to 2007, only one incinerator is currently in operation (Acerra), another one remains under construction and 12 composting plants are in the process of being built. The incinerator at Acerra operates at a third of its capacity (Bio Intelligence Service 2011).

- **Waste shipment**

Waste which could not be disposed in Campania itself was partly exported to Germany for treatment. On the other hand, there have been allegations that hazardous waste from other countries as well as other Italian regions was illegally deposited on Campanian landfills by organised crime.

- **Waste management plans**

Italy has not developed a national waste management plan, as Italian legislation prescribes that plans are developed at regional level. In February 1993 the first Regional Waste Management Plan of Campania was approved in order to reduce the use of landfills in Campania by 50%, but this measure was not effective (Greyl 2010).

In Italy, the management of MSW has been assigned to the regions, which set up waste management plans. As the first Campanian Waste Management Plan of 1993 was not successful, and the landfills were saturated in February 1994, a 'State of Emergency' was announced. The Prefect of Naples was appointed the first "Extraordinary Commissioner for the Waste Emergency". The Prefect was unable to handle the emergency and in March 1996, the task of resolving the crisis was handed over to the President of the region, Rastrelli. The extraordinary powers granted to the Commissioner enabled rapid decision-making but also created a lack of transparency (Greyl 2010).

On 31st March 1998, the former Italian Minister of Internal Affairs promoted a plan to modernize the Region's waste management practices. Selective waste collection was to be introduced in order to reach a 35% reduction of municipal solid waste. The Commissioner was given four months to write a tender for a 10-year urban waste management plan for Campania. The tender included the construction of seven facilities for the production of secondary fuels, made of waste (ecoballs), and two incinerators for their combustion (Greyl 2010).

With Decree n° 16 on April 22nd 1999, the company FIBE Impreglio was provisionally awarded the contract for waste management for the province of Naples. FIBE has built seven production facilities for waste-derived fuels at a cost of over 270 million €, with one of the two planned incinerators financed by EU funds. A critical issue of the waste treatment process as conceived in Campania is the poor quality of the fuels derived from waste: FIBE Impreglio also failed to treat ecoballs as required by law. On 26th January 2006 a law recognised the responsibility of FIBE Impregilo for the waste management crisis, stating that the company should continue to manage the waste treatment facilities and stocking sites until a new consortium was selected (Greyl 2010).

After regaining the responsibility for the MSW management at the end of 2009, the Campania Region adopted "Guidelines for the management of urban waste 2010-2013".

- **Organisation of waste management**

In May 2008, in order to deal with the crisis, the national government implemented Decree 90, the most recent and most powerful ruling approved in Campania for waste management so far. This law centralised the decision-making power, which was now held by one person: the Head of Civil Protection. As Emergency Commissary he now had the power to enforce any law he judged necessary for the implementation of the Decree. Waste treatment facilities (built and in construction) were thus designated "areas of strategic national interest" and militarised (Greyl 2010).

At the end of the year 2009 the State of Emergency was suspended and the responsibility for MSW management was transferred back to the regions. The five provinces of the Campania region had to manage the collection and sorting of household waste and landfill sites, while the Agency of Civil Protection was responsible the incinerators for another year.

Latest status available

In June 2011 about 2,500 tonnes of household waste were piling up in Naples. The main reason is that there is still not sufficient waste treatment capacity available. As a short-term solution, a transfer of the waste to other municipalities in Campania or other regions in Italy seems reasonable. This solution is the subject of political debate. For the longer term, the national government is also planning to increase penalties for burning waste in the streets and to promote the recovery of waste.

Evaluation

According to the information collected, it can be concluded that the allegations made in the petitions are correct. The potential reasons for the deficiencies are discussed in the following paragraphs:

- **Legal transposition**

The main piece of legislation pertaining to this case is, at European level, the Waste Framework Directive (WFD), in particular Articles 4 and 5. As the evaluated petitions were submitted between 2006 and 2009, Directive 2006/12/EC of the European Parliament and of the Council on waste is applicable.

In Italy, Articles 4 and 5 of the Directive 2006/12 were transposed by *Decreto legislativo No. 152* of 3rd April 2006 (Supplemento ordinario alla GURI No. 96 of 14th April 2006).

- **Waste management planning and system**

The responsibility for waste management planning and the practical establishment of a waste management system for municipal solid waste has been assigned to the Italian regions. The first Campanian waste management plan of 1993 was not effective enough to prevent the saturation of the existing landfills. After announcing a State of Emergency the responsibility for waste management planning and the waste management system was handed over to an "Extraordinary Commissioner for Waste Emergency". Italian legislation provides for this role of an Extraordinary Commissioner who is appointed by the government to deal with urgent or extraordinary tasks in public administration. The key feature of an emergency rule under Commissioners is their authority to grant derogations from regulations and controls, including - for example -, granting exemptions from environmental impact assessments and public procurement legislation. (Merkies 2010). A second waste management plan was developed and came into force in March 1998. On the basis of this plan, the production of fuels made of waste and waste incineration were the subject of a call for tender. The private companies which won the public tender had to build seven installations for the production of fuel from municipal waste and two installations for the thermal recovery of the waste fuels produced.

For the following reasons the plan was not implemented as scheduled:

- Due to criminal activities and technical mistakes the fuels derived from waste were contaminated with hazardous waste and could consequently not be incinerated.
- The private companies were not able to fulfil the terms of the contract in time and partly not at all.
- Opposition from the people living in the vicinity of the planned installations delayed the construction of the installations.

4.3.2. Petition 12: Regional waste management (GR)

Summary of petition 1144/2009

The local authorities of a municipality have not prepared effective plans for waste management. As there are no legal waste management options, unsorted municipal waste is deposited at various random locations in the countryside. This illegal landfilling is posing a hazard to human health and the environment.

Facts

- **Waste generation in Greece**

The Eurostat indicator 2009 on Municipal Solid Waste provides data on MSW generation in Greece of 457 kg/inh*y and average data for the EU27 of 512 kg/inh*y (Source: Eurostat 2011a).

- **Waste prevention in Greece**

Up to 2009 no Waste Prevention programmes had been initiated on the national level. However, there have been single initiatives especially in the field of separate waste collection and increased recycling. Also, there are good examples of waste prevention in industry (BIPRO 2009).

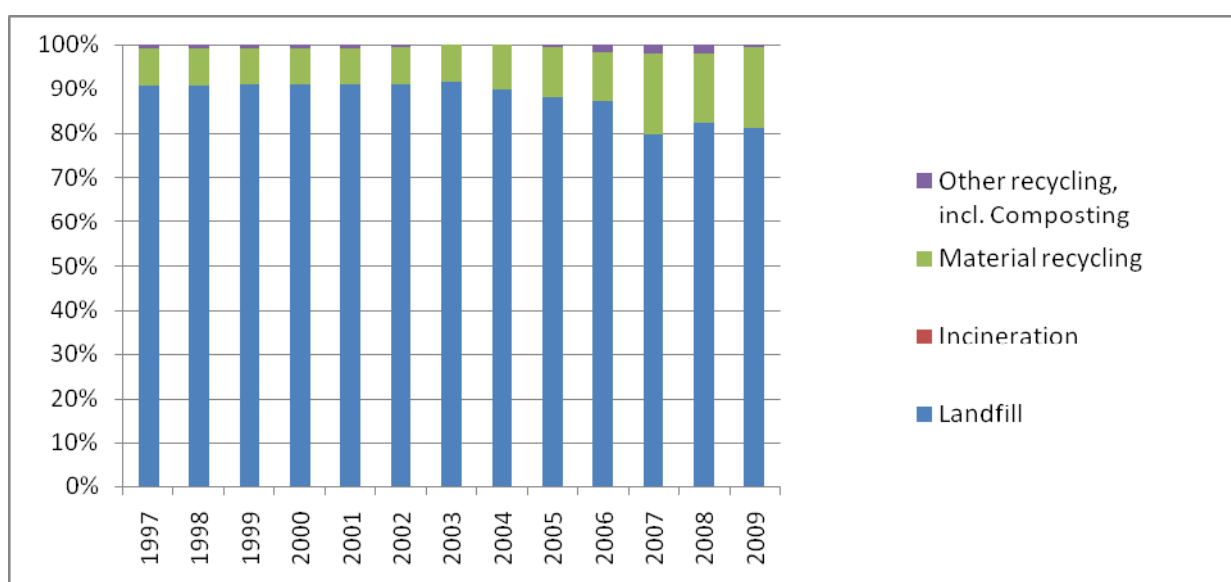
- **Waste management system in Greece**

The main disposal path for municipal solid waste is landfilling. According to the Eurostat indicator 2009 on Municipal Solid Waste in the year 2009, more than 80% of the municipal solid waste generated was still landfilled.

In the year 2010, there were 102 organisations working for the collection, transport and treatment of waste in the 13 regions of Greece. Furthermore, 25 waste transfer stations were in operation, while 107 additional stations were at a preparatory stage (Kalogirou 2011).

In the year 2010, 77 sanitary landfills were in operation, accepting about 3 million tonnes of waste. In addition, 146 sanitary landfills were either being planned or constructed. Furthermore, there were 3,036 uncontrolled landfills, of which 316 were still active, 429 under reconstruction and the remaining 2,291 in need be restored (Kalogirou 2011).

Figure 9: Percentage of waste treatment options in Greece, 1997 - 2009



Source: Eurostat 2011a

The responsible organisation for the recycling of packaging waste in Greece is the Hellenic Recovery Recycling Cooperation (HE.R.R.Co SA). This organisation was founded in December 2001 by industrial and commercial enterprises which either supply packaged products to the Greek market, or manufacture different packaging items. The Central Union of Municipalities & Communities in Greece (KEDKE) has a shareholding of 35% in the the Cooperation's capital. In 2009, HE.R.R.Co covered 7.6 Mio inhabitants in 648 municipalities (Kalogirou 2011).

For the mechanical-biological treatment of waste there are five installations in Greece. No waste incineration installation is in operation (Kalogirou 2011).

- **Waste management planning in the Peloponnese Region**

Waste management planning in Greece operates at two levels. Firstly, the National Waste Management Plan, annexed to the 2003 Joint Ministerial Decision, which sets out the general priorities in relation to waste management. The operational plan is laid down in the

Regional Waste Management Plan (RWMP), which specifies the general directions of the National Plan and identifies priorities and measures to be taken at the regional level (Sifakis 2005).

The first "Regional Plan for Solid Waste in the Peloponnese" was approved in February 2005 and was up-dated in December 2010. This plan was accompanied by a Strategic Environmental Assessment. The new RWMP divides the region into three geographic management units. Corinthia, Argolida and the municipalities of Tripoli, North and South Kinouria are in the first one, Messinia and the municipalities of Gortynia and Megalopoli in the second, while the third one contains only the prefecture of Lakonia, which includes the city of Gythio. The revised plan provides for three complete facilities of waste management, with waste treatment units and sanitary landfills per geographic management section (Tzanne 2010).

In addition, an action plan for uncontrolled landfills has been adopted with the objective to restore all illegal landfill sites in the Peloponnese Region before September 2011. The action plan as well as the new waste management plan shall solve the environmental problems caused by landfill sites, which are especially serious in the Peloponnese Region, and shall serve as a model for other action plans in the rest of the regions of the country. (Ministerial Commission for the Monitoring of the National and Regional Waste Management Planning Implementation 2011).

- **Situation in Gythio**

In the past, household waste of Gythio was deposited on an illegal landfill. In connection with the infringement procedure C-502/03, the Greek authorities themselves admitted that at least 1,125 illegal or uncontrolled landfills were operating in the country.

In addition, people complained on the internet that waste was not collected regularly in Gythio and accumulated on the streets.

(e.g. <http://www.peloponnes-treff.de/lakonien/artikel/5524-das-neapel-griechenlands>)

Current Status

An updated Regional Waste Management Plan and an Action Plan for the restoration of illegal landfill sites in the Peloponnese Region, both issued in December 2010, brought momentum into the development of the waste management situation in the whole Peloponnese Region. Another change in December 2010 was the election of a new mayor in the municipality of Anatolike Mani, to which the city of Gythio belongs.

According to internet sources, the situation of the waste collections in Gythio seems to have improved.

(see also <http://www.peloponnes-urlaub.de/pages/aktuelles/gythio-und-muell.php>)

Evaluation

According to the information collected, it can be concluded that the allegations made in the petition are correct. Potential reasons for the deficiencies are discussed in the following paragraphs.

- **Legal transposition**

The first time the EU Waste framework Directive of 1975 was transposed into domestic law was in 1986, through the Joint Ministerial Decision (J.M.D.) 49541/1424/1986 on "Solid waste in conformity with Directive 75/442/EEC". The practical implementation and enforcement of this 1986 Joint Ministerial Decision was judged as poor by Greek legal experts. The 1991 amendment of the Waste Framework Directive was transposed into Greek legislation in 1996 by the Joint Ministerial Decision 69728/824/1996. This 1996 Joint Ministerial Decision was criticised by both academia and the courts for being complicated, very technical in nature and difficult to apply in practice (Sifakis 2005).

The basic acts of law on Waste Management currently in force in Greece are:

- J.M.D. 50910/2727/2003 on «measures and conditions on solid waste management - National and Regional Management Plan»
- J.M.D. 114218/1997 «Establishment of a framework of technical specifications and of general plans of solid waste management »

In general, it can be said that most of the content of the waste management legislation in Greece follows the development of European waste management legislation. However, it has to be considered that the transposition into domestic legislation is often late and that inappropriate implementing measures are chosen (Sifakis 2005).

- **Solid Waste Management Planning**

The National Waste Management Plan sets out the general priorities in relation to waste management, while the operational plan applies to the regional level. The regional waste management plan for the Peloponnes region was issued in 2005. The plan, however, was not implemented properly, so that waste is still not sufficiently prevented and recovered, but deposited at controlled – and also uncontrolled – landfill sites. The potential reasons for the lack of treatment capacity are:

- Lack of sufficient funds.
- Strong opposition of citizens against waste treatment installations, which may result in significant delays in the permission procedure or even the abandonment of the whole project (the Not-In-My-Back-Yard problem).

4.3.3. Main problems identified

EU waste legislation

The general rules of EU waste legislation concerning the setting up of an appropriate waste management system are provided in Articles 3, 4 and 5 of the Waste Framework Directive 2006. The Articles in brackets indicate where these provisions can be found in the new Waste Framework Directive (2008/98/EC).

Article 3 (new WFD: Art. 4): Waste Hierarchy

Member States shall take appropriate measures to encourage:

- (a) first, the prevention or reduction of waste production and its harmfulness

(b) second:

- the recovery of waste by means of recycling, re-use or reclamation or any other process with a view to extracting secondary raw materials; or
- the use of waste as a source of energy.

Article 4 (new WFD: Art. 13 and Art. 36.1):

- Member States shall take the necessary measures to ensure that waste is recovered or disposed of without endangering human health and without using processes or methods which could harm the environment,
- Member States shall take the necessary measures to prohibit the abandonment, dumping or uncontrolled disposal of waste.

Article 5 (new WFD: Art 16):

Member States shall take appropriate measures, in cooperation with other Member States where this is necessary or advisable, to establish an integrated and adequate network of disposal installations, taking account of the best available technology not involving excessive costs.

Since many European countries were able to set up appropriate networks of waste recovery and disposal installations, the provisions of the European legislation, can be considered sufficient.

Legal transposition

The evaluation of the countries in this case has shown that these general rules, stipulated in the Articles 3, 4 and 5 of the Waste Framework Directive of 2006, have been transposed correctly into national legislation. It can be said, however, that the implementation of these rules has not been appropriate.

Solid Waste Management Planning

In both countries cited under case 3 the responsibility for waste installation planning lies with the regional level. The waste management plans of the evaluated regions are in place. The information available on the regional waste management plans shows that the planning of a network of appropriate treatment installations has been established, but that the implementation of these plans and the construction of the installations has not taken place within an adequate time period.

Waste hierarchy

Regarding the waste hierarchy, the focus of the waste management systems in question is on the landfilling of waste. By contrast, national or regional waste prevention programmes are missing. The separate collection of waste is limited to bigger cities and even waste that is collected separately is not recovered completely, be it by recycling or by incineration with energy recovery.

Network of disposal installations

The main problem of all evaluated petitions pertaining to case 3 is the **lack of appropriate treatment capacity for the recovery and disposal of waste**. If this capacity is not provided, waste will be redirected through uncontrolled and illegal pathways, which may pose major hazards to human health and the environment.

The following problems are inherent to those petitions which are concerned with malfunctions in the waste management system:

- Due to a lack of financial resources or due to long lasting administrative procedures, no sufficient recovery and disposal capacities have been installed.
- Due to earlier mismanagement by regional or local authorities, citizens in the vicinity of planned waste treatment installations are strongly opposed to new waste treatment facilities (the Not-In-My-Back-Yard problem).
- Due to illegal activities, household waste is contaminated with industrial and hazardous waste, which leads to problems for subsequent treatment.
- Private companies in charge of waste management have not been able to fulfil the terms of the contract in time, or partly not at all. Legal proceedings are still on-going to clarify the responsibilities.

4.3.4. Best Practices

Improvement of waste management planning

Unlike most of the other European countries, Italy has no national waste management plan. It assigns waste planning, including the planning of sufficient recovery and treatment capacity, to the regions. Another Member State where the responsibility for capacity planning is at regional level is Germany. The 16 states of Germany set up their own waste management plans, in which the generated waste quantities are balanced with existing capacities and the need for action is identified.

Guidance on waste management plans by the European Commission

With the aim to assist competent authorities at the national, regional and local level when preparing waste management plans, the Commission has published a methodological guidance note. It can be downloaded from the Commission's homepage at:

<http://ec.europa.eu/environment/waste/plans/index.htm>.

Improvement of environmental inspection

One of the main elements of improving the enforcement of waste management is the inspection of waste transports and waste treatment. Support for this task comes from IMPEL (the European Union Network for the Implementation and Enforcement of Environmental Law), which is an international association of environmental authorities in Europe. This network has been established to contribute to a more effective application of EU environmental law by capacity building, awareness raising, sharing good practices, providing guidance and tools, enforcement cooperation and provision of feed back to lawmakers and regulators on the practicability and enforceability of environmental legislation. In the case of environmental inspection, IMPEL provides guidance through handbooks.

- IMPEL Reference Book for Environmental Inspection (1999)

This Reference Book contains a practical guide for inspectors, covering the following tasks:

- Inspection planning
- Preparation of on-site visit
- On-site visit
- Inspection Report

- Step-by-step guidance book for the planning of environmental inspections (2008)

This guidance book has been developed at a later stage and puts a focus on the planning steps of environmental inspection:

- Information gathering
- Ranking, classification and priorities
- Objectives and measurable targets
- Strategies
- Inspection plan

Both documents can be downloaded from the IMPEL website under:
<http://impel.eu/cluster-1>

Comparison with a well functioning waste system in Barcelona

The metropolitan region of Barcelona consists of 33 local municipalities with more than 3.1 million inhabitants. In 2005 the generation of municipal waste was 525 kg/person/year. Since 1987 the Metropolitan Environmental Authority has been responsible for the "treatment and re-use of municipal waste and non-special and inert industrial waste, and the co-ordination of the corresponding municipal services". (Batlle 2007)

- Waste planning

The first Programme for Metropolitan Municipal Waste Management (PMGRM) was approved in 1997 and has been revised several times since then. In the 2006 revision a broad involvement of interested parties took place through the setting up of a committee in which municipalities, universities, unions and employers, consumer groups, neighborhood groups and environmental groups were represented. (Batlle 2007).

- Collection system

The Barcelona Metropolitan Environment Agency has set up a comprehensive collection system for household waste. In addition to containers for general household waste, selective waste collection takes place for glass, paper, organic matter and plastic packaging incl. tetra paks, polycoat cartons and cans. All residents have these containers for selective collection within 100 metres of their homes. In addition to containers, household waste and recycling centres, so called "Punts Verds" with permanent mobile collection facilities have been introduced. (Barcelona pel Medi Ambient 2011).

- Recovery and disposal installation

The network of recovery and disposal installations in Barcelona consists of four so-called Ecoparcs (treatment plants), two composting plants, two sorting plants, a bulky waste treatment plant, one energy recovery plant and one landfill. (Area Metropolitana de Barcelona 2011).

- Waste prevention

In 2006, the Environmental Authority of Barcelona has issued a waste prevention guidance paper entitled "10 Strategies for waste prevention". It provides guidelines for citizens to prevent municipal waste in 10 main areas. Examples are:

- Prevention of packaging waste
- Prevention of waste by using services instead of products
- Labelling, especially for products containing hazardous substances

(Area Metropolitana de Barcelona 2006)

4.3.5. Recommendations

The main problem with the waste management systems in the evaluated countries is not the wording of the general rules of their waste legislations, but their practical implementation and the enforcement of legal rules. Although there are laws that stipulate the set-up of an appropriate network of recovery and disposal facilities and although waste treatment installations are planned in waste management plans, the construction of environmentally sound installations takes too much time or does not place at all.

Recommendations for overcoming obstacles against the setting up of a network of recovery and disposal facilities:

- a. Minimise the need for landfills

Waste prevention measures, a recycling system and a system for the (biological, thermal, chemical or physical) treatment of waste which cannot be prevented or recycled should be introduced as soon as it is affordable. For the remaining waste, compliant landfills should be constructed as soon as possible. If these options are limited by a lack of financial means, the European Union may investigate options to provide financial support.

- b. Administrative and financial issues

Streamline administrative procedures for the permission and construction of waste treatment installations, without cutting down on environmental assessments and the participation of stakeholders. Ensure sufficient financial means for the setting up of waste treatment capacity, e.g., by providing funds, introducing fees, etc.

- c. Measures for reducing opposition from neighbours

The general public and especially the citizens living in the vicinity of installations need to be sure that the permitting authorities apply the rules for the environmental assessment of the installation correctly and that their doubts and objections are taken into consideration (see above under 'permitting procedures for landfills'). The best practice example of Barcelona has shown that active public campaigns on waste prevention and selective collection can

improve the attitude of the public towards waste management and towards the need for additional waste treatment installations.

d. Waste monitoring system

In order to ensure that waste is not illegally disposed of, there is a need to set up an effective monitoring system. In this way, the competent authorities can monitor the waste until it reaches its destination. The first priority of the monitoring system should be put on hazardous waste. The proper operation of the monitoring system should be supervised by inspections of waste transports and waste treatment installations. Members of the IMPEL network (Implementation and Enforcement of Environmental Law) have elaborated guidelines and handbooks for effective inspections.

e. Implementation of appropriate and sanctions that will act as a deterrent to non-compliance

Illegal waste disposal should be subject to heavy fines. Those responsible for illegal disposal should be sued for environmental damages. Persons who have been convicted for severe environmental crimes should not be allowed to run a waste treatment installation.

Table 10: Problems and recommendations for successful approaches in the future

Problem		Recommendation regarding need for action		Legislative Options	Other options
	Responsibility		Addressing		
Lack of treatment capacities leading to illegal disposal (alternative options to landfills could not be introduced fast enough)	Illegal activity, operators, Member States (responsible authorities)	Waste prevention as well as recycling and recovery should be introduced as soon as it is affordable according to the waste hierarchy of the WFD / Set up monitoring system for wastes	European Commission	-	Additional funds for financing these measures and their practical implementation
			Member States (responsible authorities)	Lay down minimum requirements for waste prevention and recycling/recovery at national level (including deadlines for implementation) / Significant penalties for illegal waste disposal	Introduce and enforce the monitoring of waste streams (from producer to final treatment)

5. COSTS AND FINANCIAL CONSEQUENCES

The costs of insufficient waste management capacity are high. Campagnia, for example, has to export part of its waste, due to the limited capacities within its own regions at a cost of €215 per tonne, half of which is transport costs.

It is estimated that the costs incurred due to the lack of waste management capacity in this European area amounted to €1.1 billion above the average amount spent on waste management in other regions of the country. Taking into account lost revenues from material recycling, the overall costs related to waste in the region were estimated to be €24.7 billion (Bio Intelligence Service 2011). Thus it can be concluded that a lack of waste management capacity is very costly for a region from a micro-economic (financial) point of view.

A scenario analysis (carried out by Bio Intelligent Service 2011) compared the total waste management costs of the EU-27 in the year 2020 for two scenarios. In Scenario A (presented in Table 11) it is assumed that no investment is for the further development of the European waste management system. In Scenario B (Table 11) it is assumed that a waste management system is established which allows a prevention of waste generation of 8%, as well as an increase in the amount of recycled material by 72 % and a threefold increase of the amount of energy extracted from waste.

In Table 11 the difference in financial costs between these two scenarios is also shown: The additional annual costs for establishing a waste management system which is fully compliant with EU waste legislation in all EU Member States are estimated to be 19 billion €. If all recycling and waste prevention objectives are also to be achieved, the total additional annual costs for establishing a fully compliant EU waste management system are estimated to be about 54.2 billion €. However, additional revenues for the waste management sector would also be achieved through the sale of recycling material and energy which could be worth some 46.6 billion € per year. Consequently, the total net additional costs for establishing a fully compliant EU waste management system were estimated (by Bio Intelligent Service 2011) at 7.6 billion € per year (see Table 11).

These additional costs of 8 billion € generate 75 billion € of reduced environmental impact per year, plus an unspecified amount of reduced health impact for the European population. A European waste management system which is in full compliance with the EU waste legislation creates a benefit-to-cost ratio of 10 to 1.

This scenario analysis implies that it is necessary to invest some 54 billion € additionally per year in order to save 46.6 billion € per year and to generate macro-economic benefits of 75 billion € per year. This scenario calculation, however, is highly sensitive to raw material prices, with high raw material prices favouring higher recycling rates.

The scenario calculation also shows that additional funds are necessary to accelerate the transition towards a waste-preventing, recycling society that is in compliance with sustainable waste treatment regulations and that in some countries the waste tariffs need to be increased in order to make this transition financially possible.

Table 11: Total micro-economic costs of waste management in the year 2020 in billion € (Bio Intelligence Service 2011)

Parameter	Scenario A – no investments in waste management	Scenario B – fully compliant waste management system	Difference (B-A)
Base costs of waste management	113.4	132.4	19.0
Base costs of recycling	42.4	73.0	30.6
Costs of waste prevention	0.0	4.6	4.6
Gross costs of waste management	155.8	210.0	54.2
Revenues from recovered materials	38.4	72.5	34.1
Revenues from recovered incineration energy	6.5	18.1	11.6
Revenues from recovered landfill gas energy	0.5	1.4	0.9
Total revenues	45.4	92.0	46.6
Total net costs of waste management	110.4	118.0	7.6

The assumption that a system based on recycling, composting, biological treatment and incineration is, from a financial point of view, more expensive than a system relying on landfilling only is supported by Eurostat data. For most (but not all) EU Member States and for the EU-27 average, Eurostat (2011c) provides the share of value added by the sector "sewage and refuse disposal, sanitation and similar activities" from the total value added (provided by the total economy in the respective country) (see Table 12). These figures reflect the ratio of the costs of waste and waste water management to the GDP in the respective country. Most of the countries which have developed a full waste recycling, composting, biological treatment system and incineration system already (see Figure 7 above), spend some 6 to 9 ‰ of their GDP on waste and waste water management. Those countries which are still heavily dependent on landfilling (see Figure 6 above) spend mostly 3 to 4 ‰ of their GDP on waste and waste water management.

Table 12: Share of "sewage and refuse disposal, sanitation and similar activities" of total value added in ‰ for EU-27 and those Member States for which data are available (countries listed in descending order according to their share of "sewage and refuse disposal, sanitation and similar activities" in the year 2005) (Eurostat 2011c)

	Share of sewage and refuse disposal, sanitation and similar activities in ‰		
GEO/TIME	2001	2005	2009
Austria	7.79	8.68	9.18
Germany	6.23	6.86	Na
Netherlands	6.21	6.32	6.66
Czech Republic	5.56	6.05	6.57
Denmark	5.32	6.00	Na
EU-27	5.33	5.75	Na
France	5.63	5.72	5.84
Hungary	4.40	5.22	6.32
Lithuania	5.44	5.09	Na
Greece	3.85	5.08	3.66
Luxembourg	4.48	4.92	4.10
Italy	4.07	4.44	Na
Spain	3.90	4.31	Na
Finland	4.58	4.14	4.56
Slovakia	6.34	3.82	4.83
Belgium	2.58	3.69	Na
Sweden	2.98	3.50	Na
Slovenia	2.29	3.44	3.73
Portugal	Na	3.31	Na
Estonia	3.40	3.24	4.40

na = not available

6. ANNEX

6.1. Contacts for in-depth analysis

Contacts to Member States:

All contacted via e-mail, internet and selected phone calls

BG	Ministry of Environment and Water – Mr Grigor Stoyanov http://www.moew.government.bg
BG	Municipality of Sofia http://sofia.bg
ES	Ministry for Environment – Ms Carmen Canales and Mr Francisco Aleza http://www.marm.es
GR	ESDKNA - Union of Attica Communities and Municipalities – Mr. Nikos Hiotakis
GR	Ministry for the Environment, Energy and Climate Change – Mr. Dimitris Tsotsos http://www.minenv.gr
PL	Ministry of Environment of Poland – Ms Monika Kosinska and Ms Monika Sklarzewska http://www.mos.gov.pl
PL	Institute of Environmental Protection – Mr Krzysztof Czarnomski and Ms Aleksandra Bartnik http://emisje.ios.edu.pl
PL	Institute for Ecology of Industrial Areas (IETU) – Mr Marek Matejczyk http://www.ietu.katowice.pl
SK	Petitioner - Ms Zuzana Caputova
SK	Municipality/Mayor of Pezinok – Mr Oliver Solga
SK	Slovak Environmental Inspectorate – Ms Helena Nitschneiderova http://www.sazp.sk
UK	Environment Agency – Mr Ken Daniels http://www.environment-agency.gov.uk
UK	Gateshead Council – Mr. Derek Quinn http://www.gateshead.gov.uk
UK	DEFRA, Waste Permitting Unit – Mr. John Galvin http://www.defra.gov.uk

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