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COMMISSION STAFF WORKING DOCUMENT

IMPACT ASSESSMENT

Accompanying the document

Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

amending Directives 2008/98/EC on waste, 94/62/EC on packaging and packaging waste, 1999/31/EC on the landfill of waste, 2000/53/EC on end-of-life vehicles, 2006/66/EC on batteries and accumulators and waste batteries and accumulators, and 2012/19/EU on waste electrical and electronic equipment

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Executive Summary

A. Need for action

Although waste management continues to improve in the EU, the EU's economy currently loses a significant amount of potential secondary raw material which is found in the waste stream. In 2010, total waste production in the EU amounted to 2,5 billion tons. From this total only a limited (albeit increasing) share (36%) was recycled, with the rest being landfilled or burned of which around 4 to 500 million tons could be recycled or reused. The EU thus misses out on significant opportunities to improve resource efficiency and create a more circular economy, create growth and jobs, take cost-effective measures to reduce greenhouse gas emissions and reduce its dependency on imported raw materials.

Without new initiatives to improve waste management in the EU, significant amounts of valuable resources will continue to be lost in the coming years. Without a clear perspective for the medium- to long-term, the EU risks seeing increased investments in inflexible, large-scale projects focused on the treatment of 'residual' waste, which may stand in the way of the potential to improve resource efficiency through reducing waste generation at source, and reusing and recycling more of the waste which is generated. The dissemination of best practices between Member States (MS) will remain limited and economic conditions will not enough incentive waste prevention, re-use or recycling leading to the persistence of large divergences in terms of waste management performances between MS. In addition, the quality of essential monitoring tools such as statistics on waste generation and management will remain sub-optimal and a number of reporting obligations will remain complex without having much added value.

B. Solutions

On the basis of an in depth analysis of what has worked and not worked in the past and after extensive stakeholder consultation, the following options (and a series of sub-options and specific measures) were retained for more detailed analysis:

Option 1 – Ensuring full implementation: No additional EU action apart from compliance promotion

Option 2 – Simplification, improved monitoring, diffusion of best practices: This includes measures aimed at:

- Aligning definitions of key concepts (e.g. 'recycling' and 'reuse') and remove obsolete requirements
- Simplifying measurement methods (only one method to measure 'household waste and similar waste' target) and reducing reporting obligations
- Creating national registries on waste collection and management and require third party verification of key data and statistics
- Introducing an early warning procedure to monitor Member States performance and require timely correcting measures when needed
- Establishing minimum conditions for the operation of producer responsibility schemes

Option 3 – Upgrade EU targets:

No new targets will be proposed under this option, existing target would be upgraded and clarified for some of them though obsolete targets would be removed.

The current performances of the most advanced Member States and the time which was needed to meet these targets was taken into account to propose realistic targets and deadlines for all MS while meeting the main objectives of the 7th EAP.

Option 3.1 – Increase the recycling/reuse target for municipal waste:

- Low: 60% reuse/recycling target by 2030; 50% by 2025
- High: 70% reuse/recycling target by 2030; 60% by 2025

Option 3.2 – Increase the re-use/recycling targets for packaging waste:

- Increased material based targets between 2020 and 2030 (80% overall reuse/recycling)
- Variant: specific separate target for nonferrous metals ('metal split')

Option 3.3 – Phasing out landfilling of recoverable municipal waste:

- Ban on plastic/paper/glass/metals by 2025 (max 25% landfilling), global ban by 2030 (max 5%)

Option 3.4 – Combination of options 3.1, 3.2 and 3.3 (with further sub-options 3.5-3.7)

C. Impacts of the preferred option

The preferred option is a mix of option 2 and option 3.4 in combination with an extended landfill ban (i.e. option 3.7). Compared to full implementation, this preferred option will bring several benefits in terms of:

- Administrative burden reduction in particular for SMEs, simplification and better implementation including by keeping targets 'fits for purpose'.
- Job creation – more than 180.000 direct jobs could be created by 2030, most of them impossible to delocalize outside the EU.
- Greenhouse gas emission reduction – around 62 million of tons could be avoided annually in 2030 (443 million between 2014 and 2030) .
- Secondary raw materials will be re-injected in the economy – more than doubling what was recycled in 2011 for municipal and packaging waste. Proposed measures will serve as catalyst for ensuring the implementation of all EU targets which will contribute to cover between 10% and 40% (depending of the material) of the EU total raw material demand.
- Positive effects on the competitiveness of the EU waste management and recycling sectors as well as on the EU the manufacturing sector (better EPR, reduced risks in terms of raw material access and prices).
- Marine litter levels 13% lower by 2020 and by 27,5% lower by 2030.

The proposed midterm targets will give the needed clear signal to MS and waste operators so that new strategies and investments can be adapted on time and with the required certainty. Past experience has shown that improving municipal and packaging waste management while banning landfilling will act as catalyst for the management of all other type of waste.

D. Follow up

This initiative is included in the 2013/14 Commission work program (WP 2013/40). The review of the targets responds to the legal obligation to review the waste management targets of three Directives by 2014 – the Waste Framework, the Landfill and the Packaging and Packaging Waste Directives (PPWD). The findings of a fitness check on EU waste five stream directives have been taken into account.

Introduction

This impact assessment responds to the legal obligation to review the waste management targets of three Directives – the Waste Framework Directive (WFD), the Landfill Directive

and the Packaging and Packaging Waste Directive (PPWD)¹ - see **Box 1**. It accompanies a legislative proposal reviewing the targets and including measures to support their implementation. The focus of this review is related to the targets included in the 3 concerned Directives covering municipal waste, packaging waste and construction/demolition waste. Actions to improve the management of these waste – and particularly municipal waste - are considered as catalyst for improvements regarding the other waste streams.

The waste target review is part of a broader process of reviewing European waste policy, the other components being a 'fitness check' of five Directives covering specific waste streams – including the PPWD² - and new initiatives following the publication of a Green paper on plastic waste.³ As explained below, the PPWD is the only Directive covered by the fitness check and by the target review.

Waste legislation was one of the first pieces of environmental legislation put in place at EU level: the first Waste Framework Directive was adopted in 1975, with additional EU texts being adopted since then. In line with the Commission's objective to ensure the "regulatory fitness" of EU legislation⁴, this target review offers an opportunity to intensify the Commission's efforts to simplify the existing legislation and reduce regulatory burdens taking on board relevant findings from the fitness check, and taking into account of what has or has not worked.

Under the combined pressure of the expected increase of the world's population and middle class in emerging economies, a massive extra demand strain is expected on primary resources in the coming years. This will drive up the prices of commodities, many of which Europe imports, and may impact on the EU's competitiveness and balance of trade.⁵

In order to face this challenge, in 2011 the Commission adopted two key interlinked strategies: a Communication on raw materials and a Communication on resource efficiency followed by the Roadmap for a resource-efficient Europe.⁶ These strategies include clear orientations promoting the use of waste as a resource. This approach has been confirmed in the 7th Environment Action Programme adopted in November 2013 by the Parliament and the Council.⁷ The target review process will be guided by the relevant 2020 waste-related objectives of the 7th EAP, namely:

- Existing waste legislation based on a strict application of the waste hierarchy⁸ is fully implemented in all Member States;
- Absolute and per capita waste generation is in decline and a comprehensive strategy to combat unnecessary food waste is developed by the Commission;
- High quality recycling is ensured and recycled waste is used as a major, reliable source of raw material for the Union;
- Energy recovery is limited to non-recyclable materials;
- Landfilling is limited to 'non recoverable' waste;

¹ Directive 2008/98/EC of 19 November 2008 on waste, OJ L 312, 22.11.2008, p. 3, Directive 99/31/EC of 26 April 1999 on the landfill of waste, OJ L 182, 16.07.1999, p. 1 and Directive 94/62/EC of 20 December 1994 on packaging and packaging waste, OJ L 365, 31.12.1994, p.10

² A list of acronyms and abbreviations as well as a glossary is provided in Annex 1

³ COM (2013) 123

⁴ COM (2013) 685 Communication on Regulatory Fitness and Performance (REFIT)

⁵ References 17 and 18 in Annex 2 (Part 3/3 of the document)

⁶ COM (2011) 25, COM (2011) 21 and COM (2011) 571

⁷ Decision 1386/2013/EU of 20 November 2013, OJ L 354, 28.12.2012, p. 171

⁸ The waste hierarchy gives the preference to prevention first followed by reuse, recycling before energy recovery and disposal which includes landfilling and incineration without energy recovery

- A quantitative reduction headline target for marine litter is established, which is supported by source-based measures.

These objectives are to be met by 2020 though derogations already granted for 15 MS in the context of the Landfill Directive should also be taken into account – see Box 1.

In order to achieve these objectives and move towards a "lifecycle-driven circular economy, with a cascading use of resources and residual waste close to zero", the 7th EAP calls for a better application of market-based instruments - including extended producer responsibility, for removing barriers facing recycling activities in the EU internal market and for reviewing existing waste management targets. This approach is line with the objectives of the Bioeconomy Strategy aiming at using bio waste streams as resources.⁹

Improving waste management will directly contribute to improving resource efficiency which is a flagship initiative of the EU's structural economic agenda, the Europe 2020 Strategy. A better application of the waste hierarchy leads to new economic activities and creates jobs – most of them virtually impossible to outsource outside the Union. Significant GHG emission reduction could be expected from waste prevention and increased reuse and recycling, while proper waste management can directly reduce litter, especially in the marine environment since for most sea regions, up to 80% of litter is transported there from land by rivers, drainage or wind.¹⁰

Box 1: Main legally binding targets, review clauses and measurement methods

Article 11.2 of the Waste Framework Directive includes two legally binding targets to be achieved by 2020: a 50% 'preparation for reuse and recycling' target for municipal waste and a 70% 'material recovery' target which includes preparation for reuse, recycling and other material recovery including backfilling operations for construction and demolition waste.

Municipal waste includes waste from households and from similar waste in nature or composition from other producers. As detailed in Commission Decision 2011/753/EU, 4 calculation methods for verifying compliance with the municipal waste targets are allowed:

Method 1: Recycling/preparation for re-use for plastic, metals, paper and glass from household waste;

Method 2: Same as 1 for household and 'similar waste';

Method 3: Recycling/preparation for re-use of all household waste; and

Method 4: Recycling/preparation for re-use of all municipal waste.

Article 11.4 stipulates that by end 2014 at the latest, the Commission should examine the existing targets 'with a view to, if necessary, reinforcing the targets and considering the setting of targets for other waste streams'. Pursuant to Article 9 (c) the Commission should propose by the end of 2014 waste prevention and decoupling objectives for 2020.

Box 1 (continuing)

The Packaging and Packaging Waste Directive includes an overall recovery - covering both packaging material recycling and energy recovery from packaging material - target of 60%, an overall recycling target of minimum 55% and maximum 80% and material based targets of 60% for glass, paper and board, 50% for metals, 22,5% for plastics and 15% for wood.

⁹ http://ec.europa.eu/research/bioeconomy/pdf/201202_innovating_sustainable_growth.pdf

¹⁰ Reference 9, **Error! Reference source not found.**

The targets apply to all packaging whether 'primary'-end consumer packaging mainly collected in municipal waste, 'secondary' – grouping packaging or 'tertiary' – transport packaging. These targets had to be met by end 2008 with time derogations granted to 8 MS to the end of 2012 and to specified times between the end of 2013 and 2015 for 4 other MS. Pursuant to Article 6.5, these targets have to be reviewed in 2014.

The Landfill Directive requires Member States to reduce biodegradable waste going to landfills on the basis of biodegradable municipal waste produced in 1995. By mid-2006 biodegradable municipal waste going to landfills had to be reduced to 75 % of the 1995 level. By mid-2009 this had to be reduced to 50 % of this amount, and by mid-2016 to 35%. 14 Member States - those which relied heavily on landfilling in 1995 - New MS (except Hungary and Slovenia) plus Greece, Ireland, Portugal and the UK - were given a four year extension period. According to Article 5.2, the targets should be re-examined by mid-2014 in order to ensure a 'high level of environmental protection'. 3 categories of landfills are defined in the Directive – landfills for hazardous waste, landfills for inert waste and landfills for non hazardous/non inert waste – with related acceptance criteria. It is only permitted to landfill waste that has been subject to a 'treatment' as defined in the Directive.

1. PROCEDURAL ISSUES

1.1. Procedural issues

The lead DG is DG ENV. This initiative is included in the 2013/14 work program of the Commission - reference: WP 2013/40.

The preparatory work for this impact assessment started in 2012. An indicative list of issues to be tackled was developed by the Commission and the first interviews with key stakeholders started in February 2013. An online public consultation was launched in June 2013, closing in September 2013. The following DG's participated in the 5 meetings of the Impact Assessment Steering Group: SG, ENTR, CLIMA, JRC, ESTAT.

1.2. External expertise and consultation of interested parties

Several sources of data and information were used to build this impact assessment: first the most relevant reports and evaluations were used to make a pre identification of the success and limits of the EU waste legislation – see Section 2.1 and **Error! Reference source not found.** This also helped to identify the main problems related to the implementation of the existing legislation and also the remaining gaps. On this basis, a large stakeholder consultation was undertaken and in parallel an 'ex ante' tool was developed to project waste generation and management and their possible impacts.

Evidence base

A consortium led by Eunomia - was used to gather the evidence required to support this IA. In addition to this specific contract, a modelling tool was developed: a first model on municipal waste generation and management was developed by the EEA and then updated and expanded together with the Commission and with the support of the same consortium. Beyond this impact assessment, it is the intention to transform this tool into a permanent 'reference modelling tool' for the EU on waste generation and management to be hosted and regularly updated by the EEA. Unless otherwise specified, the results used in this IA come from this supporting study and from the modelling tool.¹¹ A summary of the main features of the model is provided in Annex 6. Building on the Eunomia and EEA modelling, additional analytical work, led by Arcadis, was carried out in order to assess the impacts on marine litter of the policy options under consideration – see Annex 7.

Stakeholder consultation

A wide range of stakeholder consultation was undertaken, including:

1. in-depth preliminary consultations of key stakeholders, which was used to ensure that the range of issues raised by the existing Directives, and the options for addressing them, was as broadly-based as possible;
2. an on-line public consultation, including dedicated questionnaires for both technical experts and citizens;
3. a specific seminar focusing on SMEs; and
4. specific consultations on producer responsibility and on marine litter.

The results of the consultation on the Green paper on plastic were also taken into account. As local and regional authorities are key players in waste management, an 'outlook' opinion was solicited by the Commission from the Committee of the Regions.

¹¹ References 1 to 3 in Annex 2 (Part 3/3 of the document)

More details on the stakeholder consultation process are provided in **Error! Reference source not found.**, detailed result per stakeholder categories of the on line consultation is provided in **Error! Reference source not found.** as well as in the relevant parts of the impact assessment. . In summary, some elements were consistently 'scored' high by most of the stakeholders and were subsequently reflected in the analysis and policy choices including the need to:

- move beyond the recycling targets in the existing Directives while taking into account the large differences between MS in terms of waste management performances (stakeholder views on the level of the targets to be fixed is given in section 4)
- take further measures to restrict landfilling of waste and limit the incineration of waste;
- improve the credibility of statistics, improve reporting and monitoring methods, and improve and clarify existing definitions in the Directives
- simplify and make the targets more consistent
- take additional measures at EU level other than setting targets such promoting the use of economic instruments and developing EU guidance on EPR schemes
- to take measures to promote the use of economic instruments and to further harmonize and encourage optimal producer responsibility schemes (EPR)

The results of the consultations were taken into account (1) to ensure that the main issues and problems in relation with the implementation of the existing targets were properly identified; (2) to narrow the range of options to be considered in more detail in the final stages of the impact assessment; (3) to ensure that the main potential impacts for possibly concerned stakeholder were properly identified and assessed; (4) to 'test' the receptiveness of key stakeholders to some of the proposed options; and (5) to define possible targets for the cost/benefit analysis.

Additional concrete examples on how the results were taken into account will be provided in the relevant sections of this IA. Some proposals emerging from the consultation were not followed such as defining specific additional recycling targets for biowaste, wood, composite packaging or textile, introduce an overall target for prevention or re-use, fixing maximum limits for incineration – see Section 4. There was also a slight majority in favour of targets for waste prevention, but a more considered review of the potential in this regard suggested that setting targets of this nature was difficult given the low quality of data relating to specific waste streams, and the lack of comparability in the reporting of statistics on streams such as municipal waste.

The minimum standards of the Commission for consultation were met.

The positions expressed on waste management by the MS and the Parliament during the negotiation process of the 7th EAP in November 2012-June 2013 were also taken into account. In summary, although the midterm objectives of the 7th EAP relating to waste prevention and management were broadly endorsed, several MS expressed the need to take into account the large differences between MS when fixing new targets.

1.3. Fitness check and ex-post evaluations

Fitness check

As part of the review of EU waste legislation, a "fitness check" (ex post evaluation) of five 'mature' Directives covering specific waste streams has been undertaken, against four main criteria ("effectiveness", "efficiency", "coherence" and "relevance"). On top of the PPWD, the fitness check covers: (1) Directive 86/278/EEC on the protection of the environment, and in

particular of the soil, when sewage sludge is used in agriculture¹²; (2) Directive 96/59/EC on the disposal of polychlorinated biphenyls and polychlorinated terphenyls (PCB/PCT)¹³; (3) Directive 2000/53/EC on end-of life vehicles¹⁴, and (4) Directive 2006/66/EC on batteries and accumulators and waste batteries and accumulators.¹⁵ Directives recently adopted or reviewed were excluded from the scope of the fitness check as well as Directives purely related to ‘treatment’ operations (landfilling, incineration and mining waste operation).

The fitness check and the review of waste targets were conducted in parallel and monitored by the same Commission Steering Group, thus ensuring full coordination between the two processes and a two-way flow of information. As was the case for the waste targets review the fitness check was subject to extensive stakeholder consultation. Taken together the fitness check and the target review provide a comprehensive assessment of the main legal instruments in the field of waste management.

Ex-post evaluations

As explained in section 2.1 below, several sources of data and information on what appears to have worked or not worked are available on the targets of the Waste Framework and the Landfill Directives. This includes notably an ex post evaluation carried out by the EEA in the context of a ‘pilot project’ on better implementation, a Communication of the Commission evaluating the added value and remaining challenges related to the Thematic Strategy on Waste Prevention and Recycling, additional ‘on the field’ information gathered during a recent compliance promotion exercise aiming at disseminating best practices amongst the less advanced MS and recent reports on the implementation of the waste legislation published by the EU Court of Auditors and the European Investment Bank (see section 2.1).

All these sources of information have allowed a clear picture to be gained of the main barriers preventing MS from making progress but also on the key instruments to be put in place to improve their waste management. It has also already allowed the Commission to propose ‘Roadmaps’ to the 10 MS whose performance is weakest, including a list of recommendations to improve their waste management situation. These Roadmaps were discussed during seminars in each of the 10 identified MS and additional seminars are already programmed with other less advanced MS.¹⁶

1.4. Recommendations of the Impact Assessment Board

A draft of this Impact Assessment was submitted to the Impact Assessment Board on 19th February 2014. In its first opinion, the Board made recommendations for improvements which were included in a revised version. This revised version was submitted to the Board on 28th February 2014. In its second (positive) opinion, the Board made additional suggestions to improve the report.

In summary, the recommendations included in the first Board opinion were taken into account as follows:

(1) Improve the problem definition and clarify the baseline

The economic rationale for waste recycling has been strengthened in the problem analysis (section 2.5.1) and the analysis of the impacts (section 5.1.1).

¹² OJ L 181, 4.7.1986, p. 6–12

¹³ OJ L 243, 24.9.1996, p. 31–35

¹⁴ OJ L 269, 21.10.2000, p.34

¹⁵ OJ L 266, 26.0.2006, p. 1-14

¹⁶ More details including the country specific Roadmaps are available from the following web site: http://ec.europa.eu/environment/waste/framework/support_implementation.htm

References to and relevant findings of the fitness check have been included in new sections (sections 1.3 and 2.2) as well as in other parts of the text when relevant. The effectiveness of the EU targets - including the given time derogation to some MS - is discussed in sections 2.1 (ex-post evaluation) and the new section 2.2 (main lessons learnt from the fitness check). The main difficulties of the few MS not meeting the current targets and more generally of the poor performing MS are summarised in introduction of section 2.5 on the causes of the problem. The problem definition has been clarified notably by renumbering the sections related to the causes of the problem. More emphasis has been given to issues related to governance on the basis of a better explanation of the measures having contributed to the success of the more advanced MS (section 2.5.1). The necessity to fix midterm targets is better explained in sections 2.5.1 and 4.4 in introduction of option3.

Additional data expressed in terms of kg of waste per inhabitant not recycled have been included in section 2.4.

(2) Clarify the proposed options

In section 4.4 additional efforts have been made to better explain how the diverging MS waste management performances has been taken into account when fixing new targets and on what basis the targets have been set. In the same section, it is explained why the targets should be set at the same level for all MS despite differences in waste generation and why these targets are considered as feasible and realistic without applying any time derogation. Subsidiarity aspects of limiting landfilling at EU level are further discussed in section 2.8. The content of Option 2 is clarified in section 4.2 by better explaining the practical measures to be taken to implement the proposed actions. The relationship and coherence between the targets and the proposed measures is further detailed in sections 4 and 6.3. Options have been renumbered following the suggestion of the Board.

(3) Improve the assessment of impacts

A more clear reference to the cost and benefits associated to each treatment technology is provided in Section 5.1 and in **Error! Reference source not found.** and additional explanations are provided in the high costs associated with the full implementation scenario in Section 5.2. Distributional impacts among different MS are further detailed in Section 5.2 and additional data on raw material access is provided in Section 6. Additional efforts have been made to try to quantify the impacts of the proposed measures on administrative burden – see Section 5.2. Additional explanations have been included in Section 6 on the formulation and the weight of the criteria for comparing the options and the main challenges linked with the implementation of the proposed measures have been identified in the same section as well as how they can be addressed.

(4) Better present stakeholder views

The different stakeholder views have been detailed particularly regarding the type and the level of binding targets and more details have been included on how the stakeholder views have been (or not) taken into account (Sections 1.2, 4 and Annex 3). A new Annex has been added (Annex 4) with the detailed results of the on line stakeholder consultation summarising for each question the position of the main stakeholders groups. A summary on how stakeholder views have been taken into account has been inserted in section 1.2.

In addition, the recommendations of the Board on the presentation of the report were also followed, for instance the sections on the current targets and the present situation was simplified and the options were presented in a more intelligible way for a non expert reader. Additional improvements have been included at several places of the document following the technical comments provided by the Board.

The recommendations of the second Board opinion were taken into account as follows:

(1) Clarify the problem definition and the need for new midterm targets

Additional explanations on how setting new upgraded midterm targets for 2030 will address some of the problems identified (governance, lack of public awareness, lack of use of appropriate economic instruments) were included in section 6.4.

In section 2.5.1 the relation between the economic conditions and how the targets were fixed in the past is better explained though in section 4.3 the link between the need of targets and the economic rationale is developed. The main reasons for not proposing new overall prevention targets were detailed in section 4.3.

(2) Improve the options

Additional justifications for introducing landfill bans at EU level from the subsidiarity and proportionality point of view were inserted in sections 2.8 and 4.3.

The main reasons for rejecting the option of country specific differentiated targets were better substantiated in section 4.3. This includes additional explanations on the possible effects on recycling potentials of divergent municipal waste composition between Member States.

The practical implications of imposing a landfill ban on all similar waste were detailed in section 5.2. Additional information on how the problem of illegal landfilling will be addressed is provided in section 6.4. In section 5.2 it has been clarified whether additional impact assessments would be achieved for the proposed delegation given to the Commission for defining technical requirements (National registries and third party verification).

(3) Elaborate the assessment of impacts

In section 6, the options have been compared in terms of efficiency and coherence. The feasibility of the proposed targets for all MS was further discussed in section 4.3 and 6.4. The views of the less performing Member States on waste management were better reflected in section 4.3. Additional information on the impacts on the Member States of the different scenarios was added in section 5. Additional explanations were provided on the costs and revenues from recycled materials as well as on the quality of the materials and its faculty to compete with virgin raw materials (section 2.5.1).

(4) Procedure and presentation

The differences between sub options 3 were better explained and option 3.7 was included in the summary overview in section 4.3. Additional explanations were inserted in section 5 on how the impacts of the sub options were estimated. Stakeholder views with regards to some proposed compulsory measures were detailed in section 4.2.

In addition, some factual mistakes were corrected notably for what relates to the assessment of the impacts of the proposed options on marine litter.

2. POLICY CONTEXT, PROBLEM DEFINITION AND SUBSIDIARITY

This section first summarises the main lessons learnt from the most relevant reports evaluating ‘a posteriori’ (‘ex-post’ evaluations) how the EU legislation has functioned so far. A massive flow of data and information is available notably on the management of municipal

waste, on the main reasons for success and failure to implement the waste hierarchy and for meeting or not the EU targets. This information has been completed on one side by the recent compliance promotion exercise undertaken by the Commission and by the main conclusions from the fitness check on the PPWD. In the second part of this section, the main available statistics on waste management are summarised and compared to the EU targets.

2.1. Ex-post evaluation

Achievements and remaining challenges

In preparation of this impact assessment, several analyses have been undertaken to evaluate the added value, strength/weaknesses of the existing legislation:

1. In 2011, following a large stakeholder consultation, the Commission adopted a report evaluating ‘ex post’ whether the objectives of the Thematic Strategy on the Prevention and Recycling of Waste are met or not, including the attainment of the main EU targets.¹⁷ The report highlighted the progress achieved in terms of landfill reduction and increased recycling at EU level and the role of EU wide quantitative targets. These targets were considered by the stakeholders involved in the review process as one of the key drivers for improving waste management in the EU.

Remaining challenges in terms of waste prevention as well as in terms of the persistence of large difference between MS were also identified. For each waste related Directive, MS performances were compared to available statistics and EU targets demonstrating that some MS will have to make additional efforts to meet the targets. Several recommendations were made including promoting measures to improve the implementation of existing targets notably by developing an ‘early warning’ procedure, to ensure a proper use of key instruments by MS such as economic instruments and to improve the use of regional funds. More ambitious targets were also recommended to move towards a ‘recycling society’ – one of the key objectives of the Thematic Strategy. The necessity to improve knowledge on waste management, notably through improved statistics, was also highlighted.

2. As one of the results of a ‘pilot project’ launched between the Commission and the EEA to improve the implementation of key Directives, in March 2013 the EEA published a report assessing ‘ex post’ the progress achieved on municipal waste management.¹⁸ This report includes an in depth analysis of MS performances which were used in the context of this IA. In the conclusions of the report, the effectiveness of targets in driving change was made clear, but large differences between MS performance were highlighted, showing that European targets are necessary, but not sufficient, to drive improved outcomes. This is notably the case for the Landfill Directive for which the report mentioned “The Landfill Directive’s differentiated, incremental approach to target setting, including intermediate and long term targets, seems to be a valuable template for EU initiatives. It has enabled biodegradable municipal waste landfill diversion to be planned in a gradual fashion, allowing improved waste management systems to be developed”.¹⁹

Additional Regional and National initiatives are necessary to meet the targets and a clear correlation between the use of a combination of key instruments and MS performances was demonstrated. These instruments include appropriate waste management planning, use of economic instruments such as landfill taxes or pay-as-you-throw schemes, and mandatory separate collection of certain waste fractions. The report also insists on the need to improve the quality of statistics and reporting thereof.

¹⁷ COM 2011 (13), <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0013:FIN:EN:PDF>

¹⁸ Reference 7 in Annex 2 (Part 3/3 of the document)

¹⁹ Reference 7 in Annex 2 (Part 3/3 of the document)

3. In 2011/2012; following the publication of the report on the Thematic Strategy, the Commission took the initiative to promote compliance with waste legislation with a focus on municipal waste management. A 'scoreboard' classifying MS according to several criteria related to their waste management performances was established.

The quality and adequacy of the waste management plans was amongst others assessed for all MS. This assessment revealed that quantitative targets are used by the vast majority of MS and Regions as the main basis for establishing waste management strategies. Without clear quantitative waste management objectives, it is indeed difficult or even virtually impossible for these MS or Regions to deliver a consistent and solid planning of the required infrastructures. In that context, the European targets are recognised and used as the basis for the vast majority of the National or Regional waste management plans.

For the 10 weakest performing MS an in depth 'ex-post' analysis has been undertaken and summarised into a 'factsheet' including key strengths and weakness of their waste management system. Then a 'Roadmap' including key recommendations to improve waste management and to meet the minimum targets was issued for each MS.

These documents were discussed with the relevant national authorities in the 10 MS during ad hoc seminars. The final report²⁰ published in April 2013 includes recommendations to meet the EU targets notably on how to improve statistics, better use of economic instruments, development of the required infrastructures and separate collection, and improving governance. Some MS have already revised their National waste management plans and strategies in response: for example, Greece, Poland and Czech Republic where the introduction of new economic instruments - mainly landfill taxes has been announced. A systematic follow-up of these seminars is planned at Commission level as well as the extension of the exercise to at least 4 to 7 additional MS.

4. The European Court of Auditors²¹ published a report in 2012 on the use of Regional funds for municipal waste management. The Court recommended the promotion of source separation of waste and the development of related infrastructures, a better application of the landfill Directive, the imposition of conditions before granting funds to the MS notably in terms of use of economic instruments such as landfill taxes and a broader application of the polluter pays principle, the setting up of reliable waste management databases by the MS, improvements to the regulatory framework including the development of prevention targets, a clarification of some key definitions and the dissemination of best practices. The report also highlights the fact that EU Structural funds have been utilised in recent years with a too heavy focus on the management of residual waste. These investments have contributed towards achieving targets to reduce the amount of biodegradable municipal waste landfilled, but if they become the focus of activity, they risk undermining the potential for capturing the value of materials in the waste stream, and limiting the potential for mitigation of climate change through improved management of waste.

In conclusion, most of the ex-post evaluations and reports highlighted that for the vast majority of the Member States and operators active in waste management, European legislation and particularly the setting of legally binding targets, has been a key driver to change waste management practices. For a small number of front running MS, EU legislation was not considered as the only key driver as most of the policies necessary to achieve the targets were already in place (if, indeed, the targets themselves had not already been achieved) by the time they were adopted at EU level. But even for those few MS the creation

²⁰ Reference 6 in Annex 1 (Part 3/3 of the document)

²¹ Reference 13 in Annex 2 (Part 3/3 of the document)

of an EU wide waste market was important for instance to develop new recycling activities based on EU wide waste streams.

Quantitative waste management targets are indispensable to establish robust and action-oriented waste management plans and to foresee, sufficiently far in advance, the required infrastructure and efforts, for instance in terms of separate collection. Without practical and measurable targets, these plans remain vague and risk not acting as a driver for real change. Apart from few front runner MS, **European targets remain the reference** for nearly all MS to establish their waste management plans.

Time derogations were given nearly exclusively to MS that joined the European Union more recently as time was needed for these countries to set up new infrastructures and new ways of managing waste (as it was the case for the other MS). As detailed in section 2.3, time derogations were an effective tool to ensure a realistic implementation of the EU targets.

2.2. Fitness check – main lessons learnt

As noted in section 1.3 above, as part of its review of EU waste legislation, the Commission has conducted a “fitness check” of five waste stream directives including the PPWD. The (preliminary) findings²² - based on in-depth literature review and extensive stakeholder consultation - indicate that the assessed directives are essentially ‘fit for purpose’.

Turning to the PPWD more specifically, it is worth noting that, as regards its effectiveness, the recovery and recycling targets set out in the Directive have been met by nearly all MS, with a significant increase over the past 15 years (e.g. packaging waste recovery rates increased from 53.7% in 1998 (EU15) to 77.3% in 2011 (EU27) and recycling rates from 47.3% to 63.6%). Under the coherence criterion the fitness check identifies a number of differences between definitions in the PPWD and those in the Waste Framework Directive. This concerns for instance the notions of ‘prevention’, ‘recycling’, ‘reuse’ and ‘recovery’ (see Annex 9). Other issues identified by the fitness check concerning the PPWD include the need to repeal some obsolete requirements, the effectiveness of producer responsibility systems, the reliability of statistics, and the relation between separate collection systems and the quality of the recyclable materials.

Finally, stakeholder consultations conducted in the context of the fitness check revealed the following mainstream views for the PPWD:

- There is broad consensus to maintain separate targets in the PPWD, rather than integrating targets into the WFD or splitting them according to their origin (end-consumer, commercial or industrial)
- There was overwhelming support for more harmonisation, the development of clear technical requirements and statistical standards, and for the PPWD to include more legally binding language on the producer responsibility principle.

These conclusions as well as other findings from the fitness check are reflected in those parts of the IA relating specifically to the PPWD.

Other general conclusions of the fitness check shows that the 5 Directives – have achieved their main objectives (as regards resource efficiency, protection of the environment and human health, harmonisation of the internal market) and targets (as regards recovery, recycling and reuse)²³, at reasonable costs. They are generally speaking consistent with each other and the broader EU waste acquis, even though some aspects of these (older) waste

²² The fitness check's final findings will be summarized in a Commission Staff Working Paper to be published as part of the Commission's overall waste review package.

²³ A (partial) exception is the PCB/PCT Directive which suffers from a persistent implementation gap by MS.

stream directives would benefit from an alignment to the (more recent) Waste Framework Directive (e.g. as regards the five step waste hierarchy, life-cycle thinking, extended producer responsibility provisions and certain definitions). The fitness check also concludes that the directives remain a relevant pillar of the EU's overall waste policy - with the possible exception of the Sewage Sludge Directive (dating from 1986) which is considered largely outdated - while suggesting a number of elements for their further evolution (e.g. more emphasis on prevention and re-use; addressing challenges triggered by new materials; eco-design considerations etc).

2.3. Progress achieved & implementation of existing targets

Progress has been made during recent years to improve waste management in the MS even though EU averaged data masks significant differences between MS.

Table 1 below summarised the main existing target in the European legislation and how MS are meeting or not these targets. More details are given on the attainment of each target by each MS in Annex 4. In summary, **only a limited number of MS are at risk of not meeting the existing targets** without additional efforts. Most of the MS have either exceeded the existing targets (sometimes by a significant margin) or are expected to meet the current targets by the date to which the target applies. Today **no infringement procedure is open** for non-attainment of any of the European targets covered by the present review. Nevertheless, additional information has been requested from a few Member States on the measures they intend to take to ensure that the targets will be met on time. This concerns particularly the landfill diversion target.

Generally speaking, the **EU legislation has driven changes** in waste management in the MS. This is particularly true for the packaging waste and the landfilling of biodegradable waste: as detailed in the fitness check and in Table 1 below, the recovery and recycling targets set out in the PPWD have been met by nearly all MS. Overall recovery and recycling rates have increased since the adoption of the Directive (e.g. packaging waste recovery rates increased from 53.7% in 1998 (EU15) to 77.3% in 2011 (EU27) and recycling rates from 47.3% to 63.6%). Similarly, 23 MS are on good track to meet the landfill diversion target and landfilling of biodegradable waste has decreased in all MS following the introduction of the landfill Directive targets in 1999 (see **Error! Reference source not found.** and **Error! Reference source not found.** in **Error! Reference source not found.**).

Increased recycling rates for packaging waste (of which a part is municipal waste) and diverting biodegradable waste from landfilling have both influenced municipal waste management in the right direction: municipal recycling rate in 2011 amounted to 40% - an increase of 8 percentage points compared to 2005. Waste incineration has increased from 95 kg per capita in 2005 to 111 kg in 2011 of which 89kg/inhab might be considered as 'energy recovery'. At the same time, landfilling of municipal waste has decreased from 65% in 1995 to 49% in 2005 and 36% in 2011. In addition to the influence of the landfill diversion target, this reduction of landfilling seems also linked with social acceptance considerations: as detailed in section 2.5.1, EU citizens are less and less prepared to accept landfilling as a way to treat waste. Half of the 31 open infringement cases for bad application of the waste Directives are related to illegal landfilling or non-compliant landfills. Several petitions have been open or have been treated by the EU parliament on the same issue.

As detailed in Table 1 below, the vast majority of the MS will be able to meet the municipal waste and the construction and demolition waste targets by 2020. As the targets of the WFD were adopted in 2008 (and transposed into national legislations in 2010), it is too early to conclude on the influence of the targets on MS performances for these two specific targets. Whilst recycling rates vary from one waste stream to another, overall waste recycling in the EU has increased: in 2008, waste recycling was estimated at 36,5% (2011) – 38,5% -

indicates a slight increase of 2 percentage points of the overall recycling rate. Less waste was sent to landfill: 36% in 2011 compared to 49% in 2005 and 62% in 1995.

For what relates to prevention, progress have been more limited: at EU-27 level, total annual waste generation decreased by 5% between 2006 and 2010 due to the impacts of the economic crisis, the change in the structure of the economy - shifting towards a more service-based economy but also changes in reporting methods. It is difficult to isolate the possible effect of measures taken to favour waste prevention, or the ‘dematerialising’ of some consumption - for example, music being downloaded digitally. In most MS total waste generation appears to be stabilising in the long run.

Municipal solid waste generation has now stabilised since the years 2000 around 500 kg per year and per capita in the EU-27. There is a relative decoupling with consumption - which increased by 16.3 % between 1999 and in 2007. Large differences persist between MS - from around 300 to 700 kg per capita - which seem to be due not only to different consumption levels and patterns, but also, the varying scope of wastes being reported as ‘municipal waste’ by MS – see section 2.5.2.

Table 1: Attainment of EU targets – summary

On the basis of the achievement of the most advanced MS, and in line with the conclusions of the fitness check, it is clear that further progress beyond the 2020 targets are feasible for recycling and reuse of household/municipal waste and for reducing waste sent to landfill, but also, before 2020, for recycling packaging waste.

2.4. Problem definition

Loss of valuable materials

Today, a significant amount of potential secondary raw material is lost to the European

	Target	Attainment of the target – summary
Municipal waste preparation for reuse and recycling	50% by 2020	Target can be met for all MS only if the 4 measurement methods are allowed
Construction& demolition waste ‘material’ recovery	70% by 2020	2/3 of MS will meet the target in the short term. Other MS should follow before 2020
Amount of biodegradable waste sent to landfill (basis = 1995), 14 MS without time derogation	50% by 2009, 35% by 2016, or 50% by 2013, 35% by 2020 (14 MS with time derogation)	23 MS are on track to meet the targets. Additional efforts required for 5 MS
Overall recycling target PPWD	55% by 2008 16 MS with time derogation until 2016	21 MS have met the target, the remaining MS are expected to meet the target on time

Union's economy due to the fact that waste is not managed as well as it could be. In 2010 total waste production in the EU amounted to 2,520 million tons²⁴, an average of 5 tons per inhabitant and per year.

²⁴ Source: Eurostat 2013

Figure 1 shows that from this total only a limited share – 36% or 1,8 ton per year and per inhabitant - was effectively recycled. The largest share – 37% or 1,9 ton per year and per inhabitant was simply sent for disposal whether in landfills or on lands (16% of the total) - or in areas designated for the storage of mining waste (21% of the total). The remainder was either backfilled - 10% or 0,5 ton per year and per inhabitant, untreated 6%, incinerated 6% of which 4% with energy recovery, the remaining 5% or 0.25 ton per year and par inhabitant being disposed otherwise. In other words, around 1620 million tons of waste was lost for the EU economy; even if, under current technical conditions not all this waste could have been avoided, reused or recycled. All in all, the remaining potential for recycling/reuse could be estimated at maximum 600 million tons if mining waste is excluded as well as soils, what is energy recovered or sent to backfilling.

In 2011, municipal waste represented around 253 million tons or around 500 kg/year and per inhabitant of which 62% (or 157 million of tons, or 310 kg/year/inhabitant) was not reused or recycled.

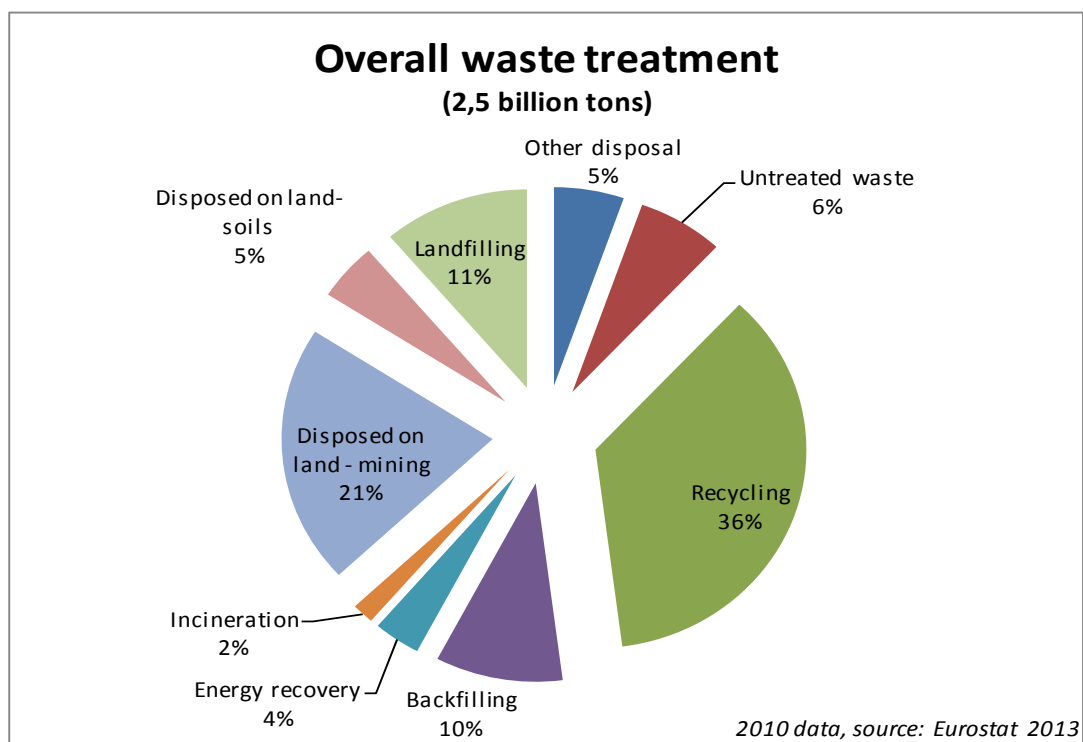


Figure 1: Overall waste treatment, Eurostat 2010

Packaging waste amounted to 80 million tons of which 36% (or 29 millions of tons) were not reused or recycled. Construction and demolition waste amounted to 860 million tons in total of which 350 million tonnes of mineral waste – of which 19% or 64 million of tons was not recovered, the rest consisting of excavated soils. These losses of valuable materials prevent the creation of a ‘circular economy’ aimed at keeping resources within the economy and using waste as the input material for new products.

Missed opportunities for growth and jobs

Losing this material means that significant growth and competitiveness potential is not being exploited through the development of a reuse/recycling industry in the EU: in 2008 waste management and recycling industries in the EU had a turnover of €145 billion representing around 1% of the EU's GDP and generating 2 million direct jobs. European firms have also used this as a base from which to expand and take up strong positions in the growing global markets for waste management. Compared to 2008, full compliance with EU waste policy in the coming years could create an additional extra 400.000 jobs and an additional annual

turnover of € 42 billion.²⁵ Moving towards the objectives of the Roadmap on Resource Efficiency could help to create 526.000 jobs and an additional turnover of €55 billion.

Competitiveness and EU dependency on raw material

In addition to this midterm stimulus, increased reuse and recycling can pump resources back into the economy and ensures an at least equivalent, often cheaper and more reliable access to raw materials - some of them considered as 'critical' - which are indispensable for EU industrial competitiveness. Raw materials are considered as essential for the EU industry: at least 30 million jobs depend on access to raw materials.²⁶

Materials are one of the most important input costs of European manufacturing companies making up around 30 to 40 per cent of the sectors' cost structures.²⁷ The EU is not self-sufficient in many resources including for critical raw materials.²⁸ Globally, the Union imports six times more materials and resources than it exports. For some of these materials, the import dependency is significant.²⁹ On average, real prices increased by more than 300% between 1998 and 2011 for resources – see Figure 2. In general, the prices of commodities are expected to rise due to the expected increase of the resource demand.



Figure 2: Overall resources price evolution 1979- 2011³⁰

Energy and GHG emissions, air pollutant emissions

Improved waste management can help reduce greenhouse gas emissions directly by cutting GHG emissions from landfills and indirectly by recycling materials which would otherwise be extracted and processed. These reductions could occur either within or outside the EU depending on where the secondary raw materials are used as input to manufacturing processes. Generally speaking, recycling material is far less energy demanding than extracting, processing and transporting virgin raw materials. For example recycling aluminium requires 5% of the energy needed to extract and process bauxite leading to major efficiency and competitiveness gains and reducing dependence on imported material. As detailed in the fitness check, the level of packaging recovery and recycling achieved by 2004

²⁵ Source: Annex 2, reference 10 (Part 3/3 of the document)

²⁶ Source : Note of the interservice group set-up by BEPA on Raw materials – November 2013

²⁷ Source: reference 17, in Annex 2 **Error! Reference source not found.**

²⁸ As defined under the EU Raw Materials Initiative.

²⁹ 100% for platinum, cobalt, most rare earth, 85% for iron ore, 57% for metals and 46% for industrial minerals

³⁰ Source: reference 19, Annex 2 (Part 3/3 of the document)

corresponds to about 10 million tonnes of oil equivalent and 25 MtCO₂-equivalent compared to a scenario where all packaging waste would be landfilled or incinerated.³¹

Compared to 2004 emissions, it has been estimated that between 146 and 244 Million tons of GHG emissions could be avoided by 2020 through reinforced application of the waste hierarchy³² representing between 19 and 31% of the 2020 EU target. Similarly, significant air pollutant emissions can be avoided: as with GHG emissions, indirect emission savings linked with increased use of recycled material would also take place, either within or outside the EU depending on where the secondary raw materials are used.

Other impacts

Improper waste management can have direct consequences at local level such as landscape deterioration due to landfilling, local water and air pollution, etc. Inappropriate behaviour related to waste management is also one of the causes of littering leading to significant costs, both direct (e.g. (beach) clean-up costs and damage to fishing vessels and fishing gear, especially in the marine environment) and indirect (e.g. loss of property value and tourism potential in affected areas). In addition, the accumulation of non-biodegradable waste –plastic waste in particular - in the oceans has negative consequences on marine biodiversity and ultimately, for those who consume fish.

2.5. What are the underlying causes of the problem?

As summarised in Table 2, improper waste management is due to a combination of causes. Some of these relate to the adequacy of EU legislation, others to governance issues particularly in MS with poor performances in terms of waste management.

There are **significant differences** between the MS and also between regions within MS in terms of waste management practices - see Figure 3. This uneven level of performance is partly linked to the time needed for constructing the required infrastructure, developing at source separate collection systems, ensuring appropriate information and building the necessary competences from the local to the national levels. This is particularly valid for MS having joined the Union more recently but also for some other MS.

Some MS have not given enough priority to improving waste management. Generally speaking, in the less advanced MS the main difficulties are related to a combination of factors including problems of governance illustrated for instance by the absence of coordination between the National and the Regional or local authorities, the lack of public awareness including amongst the decision makers, the lack of use of appropriate economic instruments making low performing option such as landfilling cheaper. These MS have often low performing EPR systems in place making the launching of separate collection more complicated and at full costs of the public authorities. The absence of midterm targets for the European Union complicates their task as they are tempted to invest in infrastructures aiming at just meeting the current targets without forwarding vision.

³¹ Source: Annex 2, reference 26 (Part 3/3 of the document)

³² Source: Annex 2, reference 12 (Part 3/3 of the document)

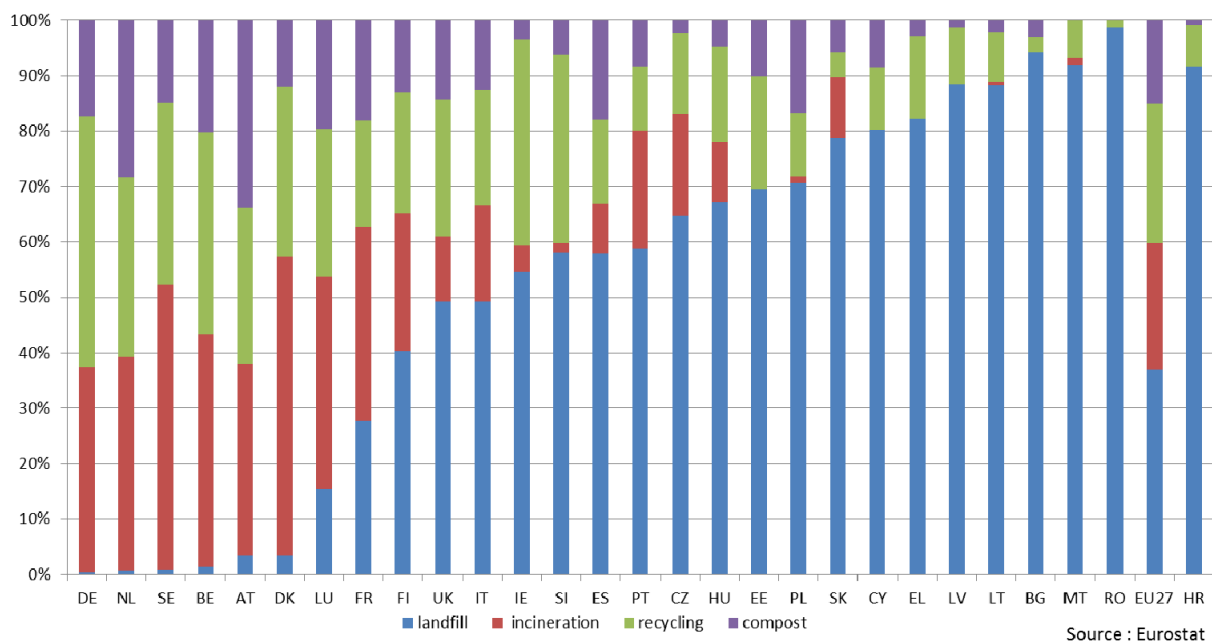


Figure 3: Municipal waste management in 2011³³

This IA focuses on the causes on which EU action can have a positive influence. For instance, issues related to governance can be partly solved through dissemination of best practices including the use of economic instruments to favour prevention, recycling and reuse: for instance landfilling often remains the least costly option which is detrimental to the creation of ‘circular economy’. As also highlighted in the fitness check for the PPWD, the existing waste legislation could be further simplified which will help to ensure proper implementation. Monitoring MS performances can be simplified and improved in a more proactive way.

And even if all existing targets are met on time by all MS, there will remain a gap between the EU aspiration of improving resource efficiency and being less dependent in terms of access to raw materials and MS waste management performances.

Nature of the problem

Loss of valuable resources for the EU economy due to improper waste management

Causes

Issues related to Governance

- In some MS, lack of administrative capacity and coordination between local/regional and national competences
- Lack of economic incentives and sub optimal EPR schemes
- Inappropriate use of Regional funds

Monitoring Issues

- Uneven quality of statistics
- Late reaction in case of risks of non-attainment

Issues related to the EU legislation

- Lack of mid-term targets leading to sub optimal investments
- Unclear definitions, obsolete requirements
- Overlaps in targets, ambiguous measurement methods

Gap existing targets vs EU vision

- Distance between current targets and EU 2020 strategy, Raw material initiative, 7th EAP

Table 2: Links between problem definition and causes of the problem

2.5.1. Issues related to governance

In this section the main success factors of the most advanced MS are identified and by contrast what is lacking in the less advanced MS is illustrated. This relates mainly to the use

³³ Source: Eurostat 2013

of economic instruments which are vital to meet the targets but also to a proper organisation of separate collection and an appropriate use of structural funds. Issues related to social acceptance are also discussed at the end of this section.

Economic conditions

As pointed out in several reports including in the conclusions of the fitness check, and by the Court of Auditors, key instruments and particularly **economic instruments** are essential to support the development of the required infrastructure: the experience of the most advanced MS has shown that appropriate economic instruments are indispensable to meet the European legally binding targets and more generally speaking, to create a sustainable recycling industry.

As illustrated in Figure 2, prices of primary raw materials - which influence the prices of secondary materials - fluctuate over time depending on the balance between supply and demand:

- For some materials, for which price levels have been consistently high, the case for separate collection, sorting and recycling will remain strong regardless of these fluctuations. This is, for instance, the case for some metals, such as copper or aluminium;
- For other materials such as plastic bottles or paper/cardboard, these market fluctuations will directly influence the economic case for sorting/recycling operations. In some years, the sales of the recycled material will be higher than the costs of collecting and sorting the material, in other years it will not be the case;
- For a last category of materials, the value derived from the sale of recycled materials is not high enough to ensure that the costs of separate collection, sorting and recycling are lower than the costs of dealing with the material as part of residual waste. This is the case for instance for plastic films from the municipal waste stream, for which market prices are low, and so the proportion of the material being recycled is also low.

Existing targets in the waste legislation are not linked to these 3 categories of materials. They were fixed for priority waste streams from the environmental point of view but also on the basis of consistent and identifiable waste streams (for instance collected and treated together) and for which enough data were available. The 3 categories of material are present in all these waste streams. In addition, fixing targets on the basis of these categories would not make sense as recycled material prices are fluctuating therefore some materials are changing of category sometimes in few weeks.

The quality of the materials collected and sorted has also a direct influence on their markets and on their prices: source separation of waste provides materials of better quality and higher price. Obviously collection costs tend to increase but it is more than compensated by the sales of materials and additional savings on the collection and treatment of mixed waste. This is further detailed in section 5.1.

Obviously, weak demand and market price fluctuations present issues for potential investors in recycling activities, including public operators: public funds are usually based on annual budgets which are not adapted to market fluctuations. Partly for this reason, public authorities are often somewhat less interested in material revenues than perhaps they should be.

Market fluctuations and low prices for some recycled materials represent clear barriers for a broader development of recycling activities. In the most successful MS, key economic instruments have allowed to create more favourable economic conditions for recycling.

These key instruments include: progressive **landfill/incineration taxes** often followed by bans on certain type of waste, **extended producer responsibility schemes** (EPR) transferring the costs of separate collection, sorting and recycling to those placing products on the

markets, **"pay-as-you-throw"** (PAYT) schemes making citizens/companies directly financially responsible for the 'unsorted' waste they generate and **systems of subsidies/charges** to favour the development of separate collection and reuse/recycling by the competent local authorities - mainly the municipalities. These conclusions are valid for all recyclable waste including packaging waste as shown in the fitness check.

Figure 4 shows for instance the relationship between landfilling rates of municipal waste and the total landfill charge including fees and taxes in the Member States. As expected, there is a direct influence of the landfill price on the landfill rates: poor performing MS have all landfill charges below 50-60 € per ton. On the contrary, MS with lowest landfill rates having all progressively increased their landfill taxes some of them having supplemented this approach by the progressive introduction of landfill material based bans. Similar correlations exist between landfill and incineration charges and recycling and composting rates.

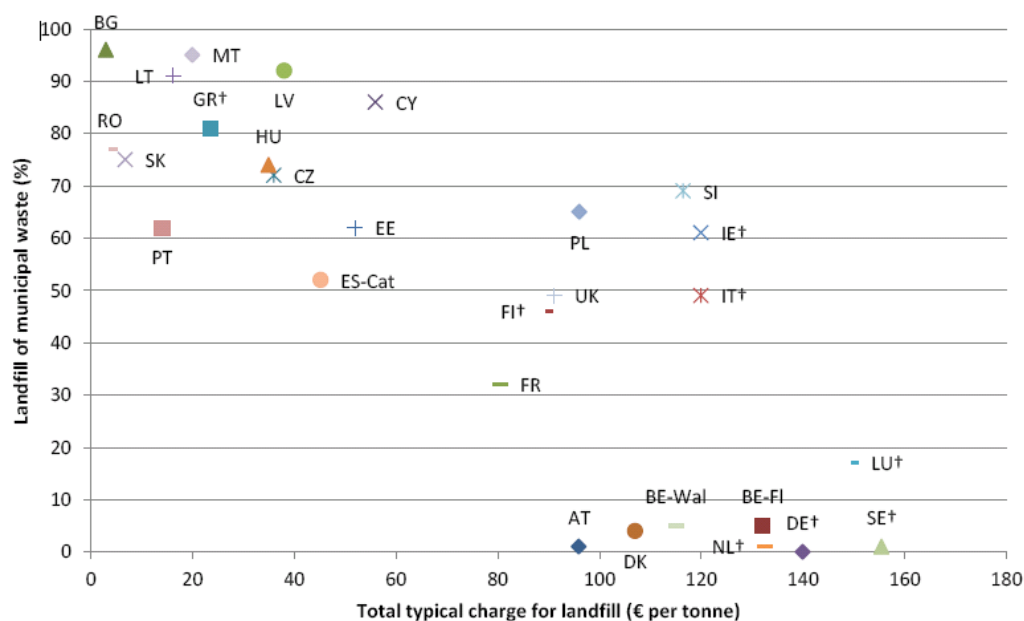


Figure 4: Municipal waste landfilling and landfill costs ³⁴

Similarly there is a large variety of **extended producer responsibility** (EPR) schemes in the MS notably in terms of waste covered by EPR schemes: most advanced MS have developed EPR systems for several types of waste streams. As illustrated in the fitness check for packaging waste, these **EPR schemes are extremely important to unblock the possible barriers for the development of separate collection**.

Properly managed EPR schemes can provide the required funds to help municipalities to launch separate collection and sorting operations but also to cover the recycled materials price fluctuations. EPR mechanisms where the producers essentially take on the risks associated with material price fluctuations (such that producers themselves, in supporting the scheme financially, pay lower fees when material prices are high, and higher fees when material prices are low). Such approaches can help insulate public authorities from the vagaries of market price fluctuations, and for producers, they pay higher fees at times when they themselves may be beneficiaries of lower market prices for materials which they use.

The variety of EPR schemes between MS also concerns the rules applied for the control of the schemes, the level of 'free riders' – importers or producers not participating in the systems, relations with the municipalities, and transfer of the whole and true costs to those placing goods on the market (producers/importers).

³⁴ Source: reference 4 in Annex 2 (Part 3/3 of the document) and fitness check

This has led to differences in terms of cost effectiveness but also to divergent conditions imposed on those placing products on the EU market. Generally speaking, the most efficient EPR schemes are those based on a clear definition of the responsibilities of the involved actors and a permanent dialogue between these actors.³⁵

As shown in the following Figure, the best performing schemes are not necessarily the most expensive. Comparisons between the schemes remain difficult as data are not always easily available, there is a lack of transparency; some schemes only cover household packaging, others only commercial and industrial packaging, others both types of packaging waste; some schemes like in the UK, France or Romania do not cover the whole collection and treatment costs of waste packaging. Other elements could also justify this differences of costs/fees paid like geographical conditions (AT) or differences in labour costs. Nevertheless, as shown in Figure 13, a margin of progress in terms of cost effectiveness of these EPR systems seems to exist: for similar levels of recycling rates there is a large variety of fees paid to the system.

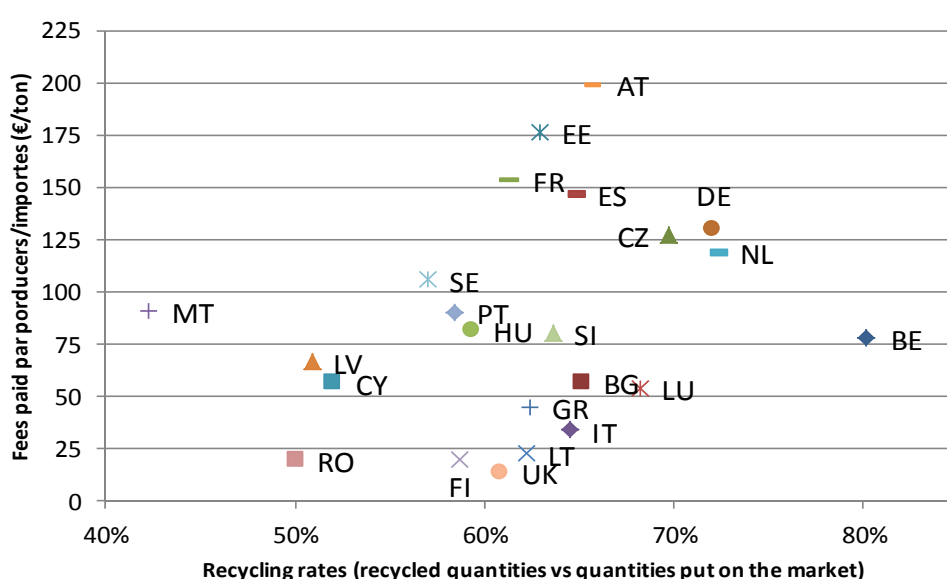


Figure 5: Cost effectiveness of EPR schemes – Packaging³⁶

"Pay as you throw" (PAYT) schemes, if properly applied, have demonstrated their effectiveness: in the areas where these schemes are in place, citizens are making efforts to reduce their waste production and at the same time the participation in separate collection dramatically increases. It has a direct impact on the amount of residual waste to be treated which is significantly reduced, leading to a reduction of the waste management costs for the local competent authorities. The vast majority of the regions meeting high recycling rates - more than 70% - are applying PAYT schemes. These schemes are not used widely enough by local authorities: it has been estimated that **only 3 MS have PAYT systems** in place in all municipalities although PAYT schemes are not present at all in 11 MS – most of them with poor performances in terms of waste management.

In the most advanced MS, **local authorities are incentivised** to launch separate collection of waste: EPR schemes are well developed, landfill prices are high enough, there are sanctions in case of lack of initiative to favour recycling/reuse or prevention – notably the application of PAYT systems - and there is a financial support for the development of the required infrastructures: By contrast, some MS have put in place very efficient systems combining penalties and financial support for municipalities: this is the case for instance in

³⁵ Sources: fitness check and references 4 and 5 in Annex 2 (Part 3/3 of the document)

³⁶ Reference 5 in Annex 2 (Part 3/3 of the document)

the Walloon Region of Belgium where residual waste has dramatically decreased (minus 42%) within six years of the application of a system combining subsidies and charges for municipalities in relation with the amount of residual waste produced and the application of PAYT systems.³⁷ These incentives are generally missing in the less advanced MS.

Experience shows that some MS are making extremely rapid progress towards meeting the EU targets by an appropriate use of economic instruments: for instance, Slovenia already performs better than several EU 15 MS, rapid progress has been seen in the Czech Republic for packaging waste and Estonia is expected to move from a situation of 75% landfilling to less than 5% landfilling in less than 7 years thanks through a clever and ambitious use of economic instruments – See **Box 2**.

Box 2: From 75% to less than 5% landfilling in 7 years, the case of Estonia³⁸

Estonia has decided to introduce a strong waste management policy aiming in the first instance at avoiding waste landfilling. A progressive increase in the landfill taxes has been sanctioned, making alternative options such as energy recovery, recycling and MBT financially more attractive: with tax increases, the price for landfilling went from 8€/ton in 2001 to 50 €/ton today and is expected to increase to 60-70€/per ton by 2015. Additional economic instruments such as EPR and deposit-refund schemes were also applied.

This has attracted private investors, and without any public financial support, major infrastructure has been put in place to treat all municipal waste produced in Estonia. The landfill rate was at 74% in 2006, around 68% in 2010 and is expected to drop to a few percentage points in 2013 with the entry into operation of two new MBT facilities and one Waste-to-Energy facility. In the medium term, the increase in the recycling rate might imply the necessity to ... import waste generated outside Estonia and/or adapt the MBT plant so that separately collected waste could be treated to increase the overall recycling rates.

This success story demonstrates on the one hand that MS having recently joined the EU can, if they implement the best practices having demonstrated their effectiveness in the past in the most advanced MS, make very rapid progress. At the same time, the absence of midterm targets at EU level is detrimental to adequate planning and dimensioning of the needed infrastructures.

Use of structural funds

Lastly, as indicated in the recent report from the European investment Bank (EIB) and in the report of the Court of Auditors³⁹, **EU funds** whether originating from the EIB or from Regional funds have been so far mainly orientated **to the lower tiers of the waste hierarchy** – creation of landfills or incineration capacities. Existing funding procedures do not really fit with the type and the 'smaller' size investments needed for prevention, reuse and recycling.

Issues related to collection

The necessity to improve the **quality of the recycled material** is another issue highlighted during the stakeholder consultation and in the fitness check. According to the WFD, there is already a general obligation/principle for MS to ensure that 4 waste streams are separately collected (plastic, metals, paper and glass). This principle is not sufficiently strict to ensure an appropriate quality of the recycled materials: experience suggests that the best performing systems are those which keep certain materials separate from others. Glass should be collected separately to avoid contamination of the other waste streams. Similarly, paper and

³⁷ See: http://ec.europa.eu/environment/waste/framework/pdf/seminar_03_2013/8.%20Martine%20Gillet.pdf

³⁸ Source: http://ec.europa.eu/environment/waste/framework/pdf/seminar_03_2013/6.WM-Estonia_10MS-seminar_BRSL_Peeter_Eek_19-03-2013.pdf

³⁹ Source: reference 13 and 14 in Annex 1 (Part 3/3 of the document)

cardboard should also be collected separately to ensure the quality and the value of the material. However, mixed collection of plastics and metals is not detrimental to the quality of the materials. Separate collection of biowaste gives excellent results in terms of organic recycling and that the highest rates of recycling appear to be achieved through door-to-door collections, where these are practical, and by deposit refund schemes for instance for beverage containers.⁴⁰ The **absence of coordination** between the authorities in charge of waste collection and those in charge of waste treatment is another reason for inappropriate design of the waste management strategy leading to poor quality recycling and increased costs. As detailed below (section 5.2.1 and Figure 10), collection and treatment costs are linked. It is therefore essential to ensure a full consistency between the collection and treatment strategies.

Similarly higher recycling rates of better quality seems to be met for **C/D waste** when **minimum sorting** is ensured at source at least between the mineral fraction and the other dry fractions. Some MS have imposed minimum sorting requirements for C/D waste.

Social acceptance

As illustrated in a recent report from European investment Bank⁴¹, the lack of appropriate infrastructure might also be linked in some cases to the **absence of social acceptance** of projects related to waste management. In some countries where there is a significant lack of infrastructure it has been virtually impossible to designate areas for the construction of waste management facilities – See Box 3 below. Experience shows that public opposition seems to be higher against incineration or landfilling projects than for other facilities such as sorting centre for recycling/reuse or composting plants based on source separated waste streams.

Box 3: Social acceptance – some concrete examples

In several places, local people have sometimes vigorously campaigned against the creation of incinerators or landfills. For instance, in Corfu Island it has not yet been possible to open a newly-built landfill - the Lefkimi landfill – due to violent protests in 2008. This infrastructure was built with the support of EU funds – a total of €6 million. In the region of Athens and Thessaloniki, but also around Naples in Italy, similar protests took place against the possible opening or extension of landfill sites. In the UK, several projected waste infrastructure – mainly incinerators - were abandoned due to local opposition including the King's Lynn incinerator as well as infrastructure in Bradford, Merseyside and Yorkshire. These are just examples of some of the most recent local opposition against major landfill and incinerator projects.

2.5.2. Issues related to the EU waste legislation

As pointed out during the stakeholder consultation but also by the Court of Auditors, the existing waste legislation could be further simplified and clarified while providing a midterm vision. For instance, the legislation includes the obligation for the MS to respect the waste hierarchy. However, the **absence of clear and smart targets** for each step of the waste hierarchy as well as clear **midterm perspectives** represents a significant barrier and a clear problem for appropriate planning of the required investments. In many cases, the time which elapses between the decision to build new waste management infrastructure and its actual operation is around 7 years⁴², the period being longer or shorter depending on the nature, and the acceptability of the infrastructure at local level. Some of the infrastructure which is built may have a useful life of 20 years or more. This absence of clear targets at each step of the hierarchy prevents MS from conveying a clear vision on an optimal implementation of the hierarchy.

⁴⁰ Reference 1 in Annex 1 (Part 3/3 of the document)

⁴¹ Reference 15 in Annex 1 (Part 3/3 of the document)

⁴² Source : reference 1 in Annex 2 (Part 3/3 of the document)

It has also led in some MS's to the **creation of overcapacities** for instance of incineration, which, in turn, appears to have lowered the fees paid for incineration, and so reduced incentives for additional initiatives to be taken to promote prevention, re-use and recycling. As shown in Figure 6, four MS have an incineration capacity exceeding 50% of their annual municipal waste generation, two of them – DK and SE – are even not producing enough municipal waste to feed existing infrastructures. This situation may be alleviated if the excess capacity is covered by waste imports from other MS and/or by feeding the existing capacities with other categories of waste such as industrial non-hazardous or commercial waste. Figure 6 shows clearly that some MS having excess capacities could progressively accept more and more waste coming from countries still heavily relying on landfilling.

Nevertheless, there are clear signals of potential overcapacities which are even more significant at local level. This is for instance the case in Rotterdam where an incineration plant was recently closed due to its underutilisation – see **Box 3**. Recent information from Germany indicates an overcapacity of incineration of around 25%. By contrast, as shown in Figure 6, some MS currently landfilling significant amounts of municipal waste have no incineration capacities at all.

Box 3: Closure of the Rotterdam incineration plant

The private company owning an energy-from-waste plant in Rotterdam decided to close it in 2010 due to the extent of overcapacity - around 10% according to the NL public authorities - caused by a declining availability of waste. This incinerator modernized in 1996 had a capacity of 450.000 tonnes. In 2012, the company stated, *"We closed one of our incineration plants in the Rotterdam area. There is overcapacity in Germany and we hope some of our colleagues will follow suit. We hope more capacity will be taken out of the market. In the end, we could harm recycling performance. The social importance of incineration will decrease whilst recycling becomes increasingly relevant and important."*

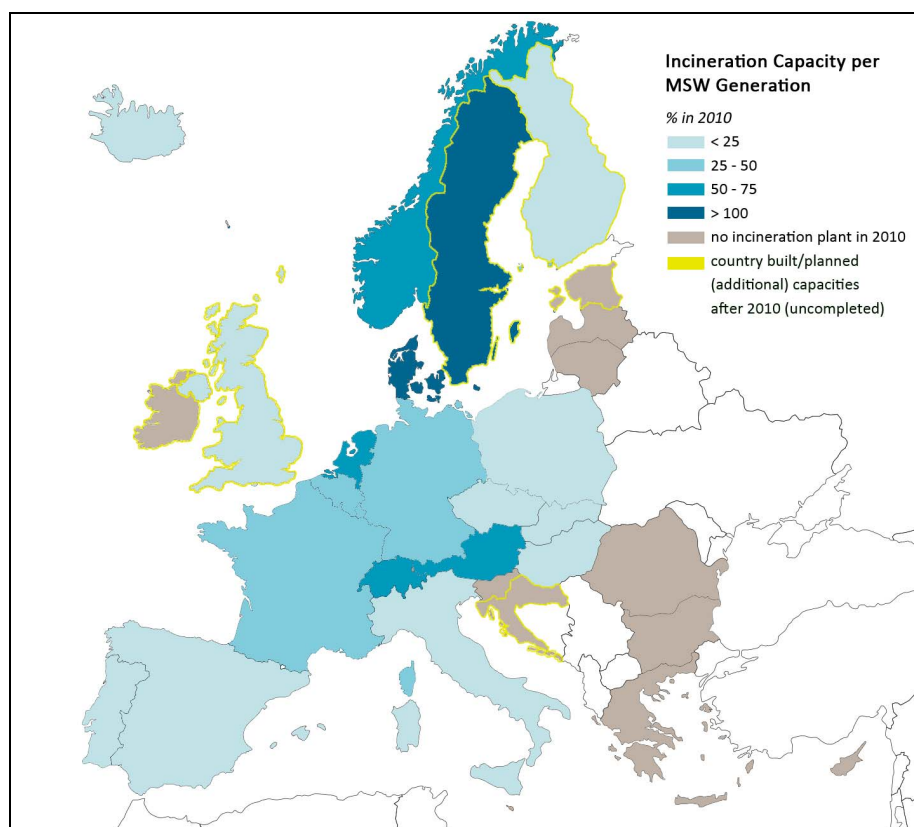


Figure 6: Municipal waste incineration capacity per municipal solid waste generation⁴³

The absence of EU midterm targets combined with longer term MS strategies could also lead to **sub optimal investments**: for instance several mechanical biological treatment - MBT-facilities treating mixed waste were created without source separation of waste. Some of these facilities are leading to modest recycling rates, most of the output products being landfilled due to their poor quality (contaminated materials).

Recent assessments carried out on the existing waste management plans⁴⁴ clearly shows that in some poor performing MS, investments currently planned will lead to the creation of several MBT or incineration facilities which will allow those MS to just meet the existing EU targets (on landfill diversion) but ‘blocking’ these MS into technological choices for, in some cases, 20 years (lifetime for these facilities).

This would limit the perspective of progress for these MS while leading to relatively high levels of residual waste landfilling. Recycling and re-use rates will remain modest in these countries for a long period unless one or more of the following occur:

1. capacity at these facilities can be sold to other countries still short of capacity – this is only possible, in principle, for facilities designated as recovery; or
2. facilities, such as some MBT facilities, are adapted so that the biological treatment part of the facility is used for dealing with source separated organic materials; or
3. some of the facilities are closed before the end of their amortization (and this may represent an additional cost).

⁴³ Reference 14 in Annex 2 (Part 3/3 of the document)

⁴⁴ References 6 and 14 in Annex 2 (Part 3/3 of the document)

As detailed in **Error! Reference source not found.**, some **definitions** are either unclear or not consistent between the concerned Directives - for instance the notion of 'recycling' differs from the Packaging waste Directive (PPWD) to the WFD. The **concept of 'municipal' waste** remains too vague and leads to divergent MS interpretations and hence widely differing levels of re-use/recycling. Significant differences exist between MS in terms of municipal waste generated per capita (between 300 and 700 kg/inhab/year).⁴⁵ Part of these differences could be explained by economic characteristics - individual consumption levels - but it seems that MS are reporting different realities under the name 'municipal waste'.

The share of household waste in the municipal waste varies from a MS to another mainly due to difficulties experienced by MS in separating 'household waste' from non-household waste collected in the same way. Additional effort is needed to improve reporting on 'municipal waste' in order to get a sound basis for comparing MS performance and ensure that the targets on municipal waste are established on solid basis.

Calculation methods are too complex and not sufficiently harmonised to allow a proper comparison of MS performance. For instance, 4 calculation methods are permitted for assessing the municipal waste recycling target - see Box 1. MS had to report by September 2013 on the recycling/reuse rates according to the method they have chosen for the calculation of the target. A comparison between the reported recycling rates by the MS according to the method they have chosen and the recycling rates for municipal waste as reported annually to Eurostat since the mid-nineties – equal to calculation method 4 and based on OECD/Eurostat guidelines - shows that depending on the method chosen, the results could vary significantly: methods 2 and 3 are less demanding than method 4 - see Table 3.

The reported level of achievement under the WFD target can be more than 3 times what is reported to Eurostat. This is also confirmed when considering recycling performance based on typical waste composition – recycling rates of 50% could be met with method 2 although the actual recycling rate for municipal rate amounts to 25% - by using method 4.

This means in practice that the existing flexibility related to the calculation method is leading to confusion about the actual performances of the MS and their capability to re-inject recycled materials in the EU economy.

This comes on top of problems related to the quality of statistics – for instance ES, LV and SI are using the method 4 but contrary to FI, they do not have the same recycling rates than those reported by Eurostat.

⁴⁵ Reference 1 in Annex 2 (Part 3/3 of the document)

MS having reported (Jan 2014)	Method chosen by MS	Reported Re-use/recycling rate [1]	Recycling rate - Eurostat [2]	Ratio [1]/[2]
AT	2	Not reported	62%	
BG ⁴⁶	3	31%	6%	5.2
CY	2	22,4%	20%	1.1
CZ	2	49,60%	17%	2.9
DE	4	Not reported	62%	
DK		Not reported	43%	
ES	4	27%	33%	0.8
FI	4	35%	35%	1
GR	2	Not reported	18%	
HU	2	39,80%	22%	1.8
IT	2	38,50%	33%	1.2
LT	2	43%	21%	2.0
LU	3	49,80%	47%	1.1
LV	4	17,8%	11%	1.7
MT	1	23%	7%	3.3
PL	2	18% (2012)	28%	0.6
PT	2	Not reported	20%	
SE	2	62%	50%	1.2
SI	4	34,20%	40%	0.9
SK	2	13,38%	11%	1.2
UK	3	43%	39%	1.1

Table 3: Reported recycling/reuse rates by MS and Eurostat recycling rates

The **landfill diversion target** - based on biodegradable waste produced in 1995 - opens the door to interpretation from the MS on what should be considered as biodegradable waste and on what was the 1995 level of landfilling of this type of waste. This increases the uncertainties around this target. Similarly the absence of a practical definition of the notion of 'treatment' makes it difficult to verify whether waste is actually treated before being landfilled.

The **measurement method for C/D** – construction and demolition – waste also raises questions. The WFD imposes a 70% target of 'material recovery' which includes recycling but also 'backfilling',⁴⁷ which is extremely difficult to monitor in practice. **Error! Reference source not found.** in **Error! Reference source not found.** and Table 4 below illustrate the differences between the material recovery rates as reported by MS, the rates calculated by Eurostat and the relative importance of backfilling.

Backfilling represents an important share of the reported data in some MS: on the basis of the Eurostat data, 12 MS reported backfilling rate between 0% and less than 0,5%, 6 MS reported backfilling rates between 1,15 and 20% - 5 MS reported backfilling rates higher than 20%.

Member	Material recovery rate	of which backfilling
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⁴⁶ BG is in process of revising its reporting to Eurostat

⁴⁷ 'Backfilling' is defined as 'a recovery operation where suitable waste is used for reclamation purposes in excavated areas or for engineering purposes in landscaping and where the waste is a substitute for non-waste materials'

State	Reported by MS	Eurostat	Reported by MS	Eurostat
AT		91,8%		0%
BE		73,6%		0%
BG	21%	61,6%		0%
CY		0,32%		0,32%
CZ	86,4%	91,1%	30,8%	35,33%
DK		82,5%		0%
DE		95,3%		9,4%
EE		96,4%		9,3%
ES		64,8%		23,7%
FI	33%	5,5%		0%
FR		66%		7,6%
GR		0%		0%
HU	60,2%	60,7%		7,5%
IE		96,9%		30,14%
IT		96,9%		1,1%
LT	65%	73,2%		0%
LU	90,8%	98%		?
LV		90,8%		?
MT		14,2%		0,07%
NL		99,2%		0%
PL	69%	92,6%		22,5%
PT		48%		?
RO		37%		0%
SE	60%	77,6%		0%
SI	78,7%	94%		1,17%
SK	45,4%	46,7%		?
UK	92,7%	97,8%		22,1%

Table 4: Comparison between reported material recovery rates and Eurostat data

The **articulation of the target** still causes problems: for instance and as highlighted in the fitness check, there is no clear relationship between the landfill diversion target for municipal biodegradable waste, the recycling target for municipal waste and the recycling target for packaging waste which also partly covers municipal waste. As also highlighted in the fitness check, the existing legislation still includes some **obsolete requirements** which could be removed. For instance, this is the case in the PPWD in which a 'maximum' target was fixed for recycling in contradiction with the evolution of the recycling markets.

Moreover, even though significant efforts have been made to streamline and simplify **reporting obligations**, there is still room to improve and further streamline these obligations. MS are required for each Directive to produce a tri annual report to the Commission which in turn is required to produce reports on the implementation of the Directives. In practice, these reports which are mainly qualitative have a very limited added value compared to the administrative burden they involve. **Error! Reference source not found. in Error! Reference source not found.** summarises the demanding flow of MS reporting obligations – more details being provided in **Error! Reference source not found.**

Similarly, according to the WFD a permit is necessary for all undertakings managing waste (Article 23). During the stakeholder consultation, it was pointed out that in some MS, **SMEs producing or managing small quantities** of non-hazardous waste have to comply with this procedure which leads to additional administrative burden for a very limited added value.

The problem of **littering**, while covered by the general provisions on waste prevention and management (e.g. articles 9-13 and 36 of the WFD), is not explicitly addressed in EU waste legislation. It is only in the recent Commission proposal (COM (2013) 761) amending the PPWD to reduce the consumption of lightweight plastic carrier bags that the issue is referred to in its own right.

2.5.3. *Issues related to monitoring*

As repeatedly mentioned by stakeholders, pointed out by the Court of Auditors, and highlighted in the fitness check, another difficulty is related to the **quality of waste statistics**. Significant efforts have been made at European level with the creation of the Eurostat waste data centre. Nevertheless, as illustrated in Table 3 and in Table 4, additional efforts to improve statistics particularly on C/D waste are needed: differences persist between what is reported under the WFD and otherwise to Eurostat. No clear binding procedure is in place to ensure a minimum data validation either at European level - the current approach is only indicative - or at MS level. Only few MS have set an internal validation procedure.

This might lead to **divergent data flows** - there are some examples of MS in which the Ministry of Environment is reporting different data from the official statistical office – with differences up to 30% in the case of municipal waste generation.⁴⁸ Additional layers of uncertainty are related to the fact that some MS do not follow the guidance provided: for instance, and as shown in the fitness check, under the PPWD, MS are allowed to report as ‘recycling’ the material which is separately collected. Difficulties also emerged from the absence of common interpretation on what is or is not packaging.

However, losses between what is collected and what is effectively recycled may be significant: for example, the Court of Auditors report has indicated, loss rates of between 26% and 50% at the five facilities which were examined. In some cases, the implications of such loss rates would be that if recycling was reported on the basis of what was collected, this would amount to an over-estimate of the recycling rate of between 33% and 100%. This could encourage MS to maintain poorly designed waste collection systems and management not sufficiently focused on quality and efficiency.

The **absence of anticipation** of the risks of non-attainment of the targets by the MS is another significant problem. The current approach to checking whether targets are met is based on statistics reported a posteriori by MS. In most of the cases, when the assessment is completed and possibly infringement procedures launched, it is too late to **take appropriate and timely correcting measures** due to the time needed for instance to launch additional programs of separate collection and to build the required infrastructure.

Between the non-attainment of one of the targets of the EU legislation and the launching of an infringement procedure a period of three years is usually needed, in particular to acquire and check the relevant statistics.

2.5.4. *Gap between EU objectives and existing targets*

The level of the existing targets remains too low to ensure the creation of a circular economy using waste as resource and to meet the concrete objectives provided by the 7th EAP and recently endorsed by the European Council and the Parliament, the Raw Material initiative and the Resource Efficiency Roadmap as well as through one of the key Europe 2020 objectives to build a more ‘resource efficient’ economy.

⁴⁸ Reference 6 in Annex 2 (Part 3/3 of the document)

Meeting the existing landfill diversion target for biodegradable municipal waste will **still allow landfilling significant amount of valuable waste** as this target is based on 1995 data, covers only the biodegradable waste (and not all waste) and allow for landfilling in 2020 of 35% of the amount of biodegradable waste that was generated in 1995. Meeting the existing target for packaging waste (55% recycling) will leave 45% of packaging waste not re-used or recycled although the potential remains significant as illustrated by the current performances of the most advanced MS (around 75% recycling in 2010). The four methods for meeting the 50% recycling/re-use rate for municipal waste in practice leads to not reuse/recycle between 25 and 50% of municipal waste as illustrated in section 2.5.2.

In addition and as detailed in the following section, without additional EU initiative to raise the existing targets, a significant amount of waste will still be lost to the EU economy whilst no clear medium-term signal will be given to waste management operators.

The targets should be revisited in the light of the multiple potential benefits linked with improved waste management - job creation, new economic activities, innovation in a promising sector, reduced GHG emissions, contributions to renewable energy generation, improved amenity - and the increasing challenge of raw material access for EU industry.

The current performances of the most advanced MS clearly show that a significant degree of progress is possible for all MS in the midterm. As shown in the fitness check, most MS have already met and surpassed the targets of the PPWD. The fitness check also highlighted the fact that the PPWD has had a significant impact in promoting the establishment of selective collection not only for packaging but also for other waste streams.⁴⁹

Some MS are already today recycling more than 50% of their municipal waste – with some peaks at regional level of 70 to 85% - while 6 MS are landfilling less than 3% of their municipal waste - see Figure 3 and Figure 9. The vast majority of stakeholders have also shown an ‘appetite’ for increasing the recycling targets and building on progress already made to move closer to the vision of a resource efficient economy.

2.6. How will the problem evolve?

Without further policy action, significant amounts of valuable resources will continue to be lost in the coming years. Without a clear midterm perspective on the vision for waste management, there is a risk of investing in inflexible large-scale projects such as incineration and/or MBT facilities which may hinder longer-term ambitions to improve resource efficiency. The dissemination of best practices will remain limited, the quality of essential monitoring tools such as statistics on waste generation and management will remain sub-optimal and reporting obligations will remain complex and with limited added value.

In order to assess the impact of the existing measures for municipal waste, a **‘Business as usual scenario’** has been developed. This scenario presents an objective view of likely future waste management based upon realistic expectations for the performance and delivery of future waste management systems. A variant of this scenario has been constructed presenting the intentions of MS - understandably, in most cases the stated intention is that MS plan to achieve the targets, thus this variant is close to the full implementation scenario.

The functioning of the model is summarised in Figure 3.1 - Annex 6 which includes a summary of the key assumptions and data sources which have been used to calculate the financial and environmental impacts of the policy options considered in this IA.

As shown in Figure 7 below, the business as usual scenario implies a modification of waste collection and treatment: more waste will be recycled and reused, energy recovery will slightly increase and landfilling will decrease by nearly 40.000 tons.

⁴⁹ Source: reference 25, Annex 2 (part 3/3 of the document)

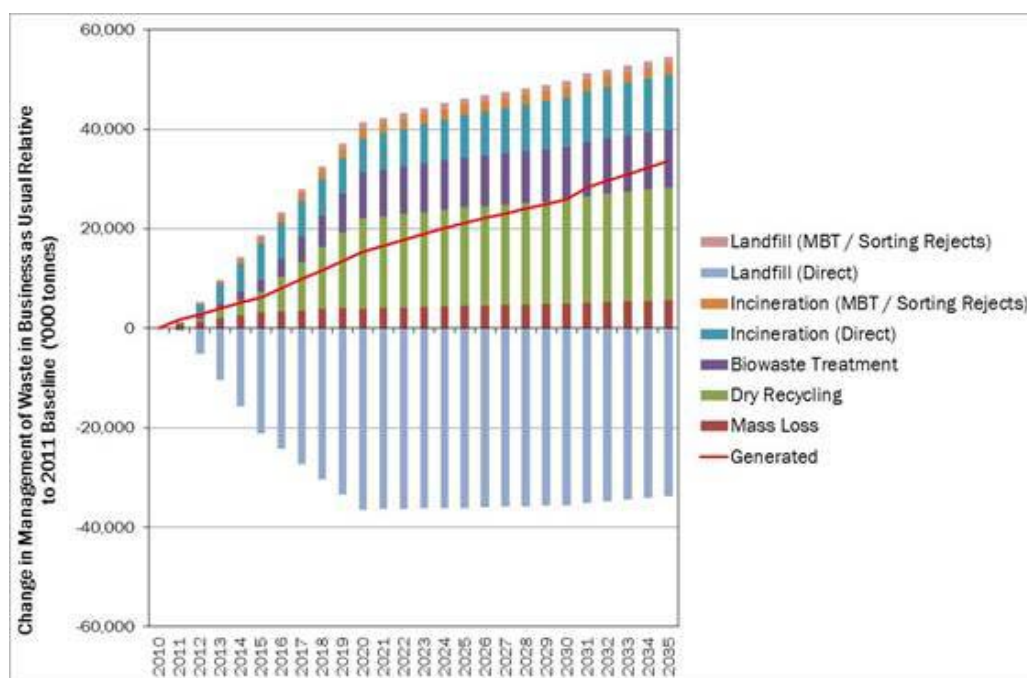


Figure 7: Changes in waste treatment - Business as usual scenario

Despite these expected changes in waste management, there is a risk that some MS will fail to meet the existing targets on time: without additional actions, 9 MS will have difficulties in achieving the existing recycling target for municipal waste – see **Error! Reference source not found.** in **Error! Reference source not found.**. 5 MS are not making enough progress towards the landfill diversion target (see **Error! Reference source not found.**). According to the marine litter reduction model, it is estimated that a 4.4% increase of inflow of new marine litter by 2020 can be associated with this scenario.

2.7. Who is affected and how?

Several stakeholders are affected by the loss of valuable materials and improper waste management:

As explained in section 2.2, **the manufacturing industry** might be confronted with additional increases in raw material prices in the midterm. This risk might be attenuated by improving waste management as a significant proportion of raw materials needed for the manufacturing industry could be re-injected back into the economy at a reasonable price level. At the same time, the manufacturing industry placing goods on the market is confronted with different systems of EPR in the MS. These differences might represent an obstacle to the functioning of the internal market. In addition, as shown in Figure 5, several EPR schemes are not cost effective which might be due to the lack of transparency combined with the absence of minimum conditions (control, fair competition etc.). Several MS are envisaging now additional EPR schemes and without ensuring that they are meeting minimum conditions there is a risk of creating ineffective additional systems.

Waste operators whether **large companies or SME** involved in waste collection and treatment might be affected by the absence of new initiatives to ensure proper implementation of the EU waste legislation and by the lack of mid-term clear and measurable targets. As highlighted during the stakeholder consultation, improper waste management could represent a barrier for the development of new business in the collection, sorting or treatment sectors. Without a clear midterm vision on waste management, there is a risk of sub optimal investments in the sector – see **Box 3** as an example.

The recycling industry has already benefited from the European targets in the past. It has been demonstrated that without clear European targets it would have been impossible to develop sustainable recycling activities. Without further efforts to simplify the EU legislation, **SME's** might be confronted to administrative burden – particularly when SME's are handling small quantities of waste.

EU citizens are first in line to improve waste management as one of the key players in the chain having to participate in separate collections schemes. Nevertheless, they do not always benefit from optimal organisation of waste collection. This has consequences in terms of general taxes to be paid which might increase due to improper waste management – for instance due to inappropriate investments, creation of overcapacities, lack of coordination between collection and treatment or investments being made too late which might ultimately lead to infringement proceedings and even fines. Also, EU citizens often pay general taxes for waste management without links to efforts to prevent and separate waste.

As consumers, they pay a contribution to EPR systems without having a clear choice and in absence of appropriate level of information on how the funds collected are used.

At local level, landfills cause multiple nuisances including noise, dust, poor air quality and negative impacts on landscape. Improper management of landfills, particularly those located near water bodies, can lead to pollution of the rivers and sea. This in turn can lead to contamination of the food chain, for instance when plastic particles ending up in the marine environment is ingested by fish, which has potential adverse impacts on public health.

Public authorities are also key players in waste management: at local level - municipalities, associations of municipalities - they organise the collection and the treatment of waste for household and similar sources whether through their own operating means or through services provided by private operators. Local authorities are also directly concerned by littering which represent additional and frequently significant costs of cleaning of the streets, beaches, forests. Without new initiatives for instance to promote best practices, there is a risk that inefficient systems persist with different effects notably on the public budgets devoted to waste management.

Others - tourism and fisheries: in some parts of the Union, improper waste management, and in particular illegal landfilling and littering, have a direct impact on the development of tourism. Beach littering has a particularly detrimental impact, with clean-up costs estimated at €13,5 million per annum – see Annex 7.

The fisheries industry is also negatively affected from marine litter causing damage to propellers and fishing gear. Costs associated with this damage are estimated to be €57.2m, equivalent to approximately 1% of the total revenues from catches that are generated by the EU fleet (landed value from 2010).

2.8. The EU's right to act and justification

The proposal is a direct response to the Europe 2020 Strategy, in particular its flagship initiative on "A Resource Efficient Europe", and is closely related to the EU's Resource Efficiency Roadmap and its Raw Materials Initiative.

The Union competence to take action on waste management derives from Article 191 of the Treaty on the Functioning of the European Union related to the protection of the environment: "Union policy on the environment shall contribute, among other things, to protecting and improving the quality of the environment, protecting human health, ensuring prudent and rational utilisation of natural resources, and combating climate change".

In the WFD, the Landfill Directives and the PPWD, the legislator has included review clauses for the targets, calling on the Commission to envisage their reinforcement - see Box 1. Experience from the past has shown that European objectives and targets for waste management have been a key driver for better resource and waste management in the vast majority of the MS. Common objectives and targets also help improve the functioning of the EU waste market e.g. by providing guidance to investment decisions and ensuring cooperation between MS. EU wide targets are also needed to create the minimum scale for the EU industry to invest in new recycling techniques.

Transnational aspects of the initiative are also related to environmental aspects: inappropriate waste management leads to additional GHG and air pollutant emissions whether directly emitted by landfills or indirectly through extraction and processing of virgin raw materials which could have been avoided through increased reuse and recycling.

Taking measures to reduce landfilling will have impacts related to EU wide aspects such as GHG emissions, transboundary air pollutant emissions and losses of valuable resources. Reducing landfilling has therefore the potential to contribute to European policies in terms on GHG and air emission reduction on top of resource efficiency policies. A European wide approach is also necessary to avoid that some MS by continuing to base their waste management strategies on 'cheap' landfilling creates the conditions to 'import' potentially massive amounts waste preventing the creation of an EU wide recycling industry. These real risks of increased shipments of waste for disposal to MS where landfilling continues to be allowed for longer can be limited by fixing similar deadlines at European level to progressively remove recoverable waste from landfills.

Littering, especially in the marine environment, is also a problem with transnational implications. Material which escapes the waste management system is frequently transported from one MS to another via inland waterways, and once it reaches the sea, it does not respect maritime boundaries. Plastic litter in particular is problematic, given its long lifetime, and its tendency to disintegrate into ever-smaller pieces, which frequently enter the food chain when ingested by marine life. Without setting coherent targets at European level, there is a risk that the efforts achieved by some MS could be undermined by a lack of similar efforts in neighbouring MS. A headline reduction target for marine litter at EU level will support Member States in the establishment of (sub-)regional marine litter reduction targets and in achieving the national targets which they are obliged to adopt under the Marine Strategy Framework Directive.⁵⁰

3. OBJECTIVES

The **main general objective** of the review is to ensure that valuable material embedded in waste is effectively re-used, recycled and re-injected into the European economy – in other words, to make progress towards the **creation of a circular economy** where waste is progressively used as resource.

⁵⁰ Marine Strategy Framework Directive 2008/56/EC

Moving towards a circular economy will ensure that that opportunities linked with proper waste management will be seized by the European Union – notably in terms of job creation, GHG emission reduction, reduction of marine litter, improving the EU security of supply of raw materials and contributing to the development of a EU recycling industry.

The **specific objectives** of the review could be summarised as follows:

1. **Ensuring improved waste management in all MS** by ensuring the dissemination of best practices and key instruments already applied in the most advanced MS and notably by promoting and if necessary imposing the use of key instruments including economic instruments particularly in those MS considered as ‘at risk’ of non-attainment of the targets, ensuring a minimum level of harmonization of the EPR schemes at EU level to ensure their optimization and orientating the forthcoming investments in the field of waste management as a priority towards the first steps of the waste hierarchy.

2.. **Simplifying the European legislation** by clarifying and simplifying measurements methods related to targets, by adapting and clarifying key definitions, ensuring the consistency of the targets through an integrated approach and removing obsolete requirements from the legislation and by dramatically simplify reporting obligations.

3. **Improving monitoring** of the legislation and the legally binding targets by improving the quality of waste statistics, particularly where targets are concerned, by anticipating possible problems of implementation with the development of an “early warning” procedure.

4. Ensuring that the European mid-term targets are aligned with **EU aspiration** in terms of **resource efficiency** and **raw material access** by clarifying the waste hierarchy and fixing new midterm targets aiming at giving a clear early signal to the MS and the industry on the vision of the EU. Opportunities linked with improved waste management have to be seized – modern waste management can contribute to innovation, competitiveness, job and economic activity.

The links between the proposed objectives, the problem definition and the causes of the problem are summarised in the first part of Table 5 below.

In the midterm and in line with the ambition of the 7th EAP recently endorsed by the Council and the Parliament in Decision No 1386/2013/EU of the European Parliament and of the Council of 20 November 2013 on a General Union Environment Action Programme to 2020 ‘Living well, within the limits of our planet’⁵¹, the following **operational objectives** have guided the review:

- waste generation decline and is decoupled from GDP evolution;
- reuse and recycling are at the highest level feasible – 70% for municipal waste at the horizon 2030;
- incineration is limited to waste which is not recyclable;
- landfilling is limited to ‘residual’ waste – around 5% of waste generated;
- achievement of significant reductions in marine litter, in order to prevent harm to the coastal and marine environment;

⁵¹ OJ L 354, 28.12.2012, p. 171

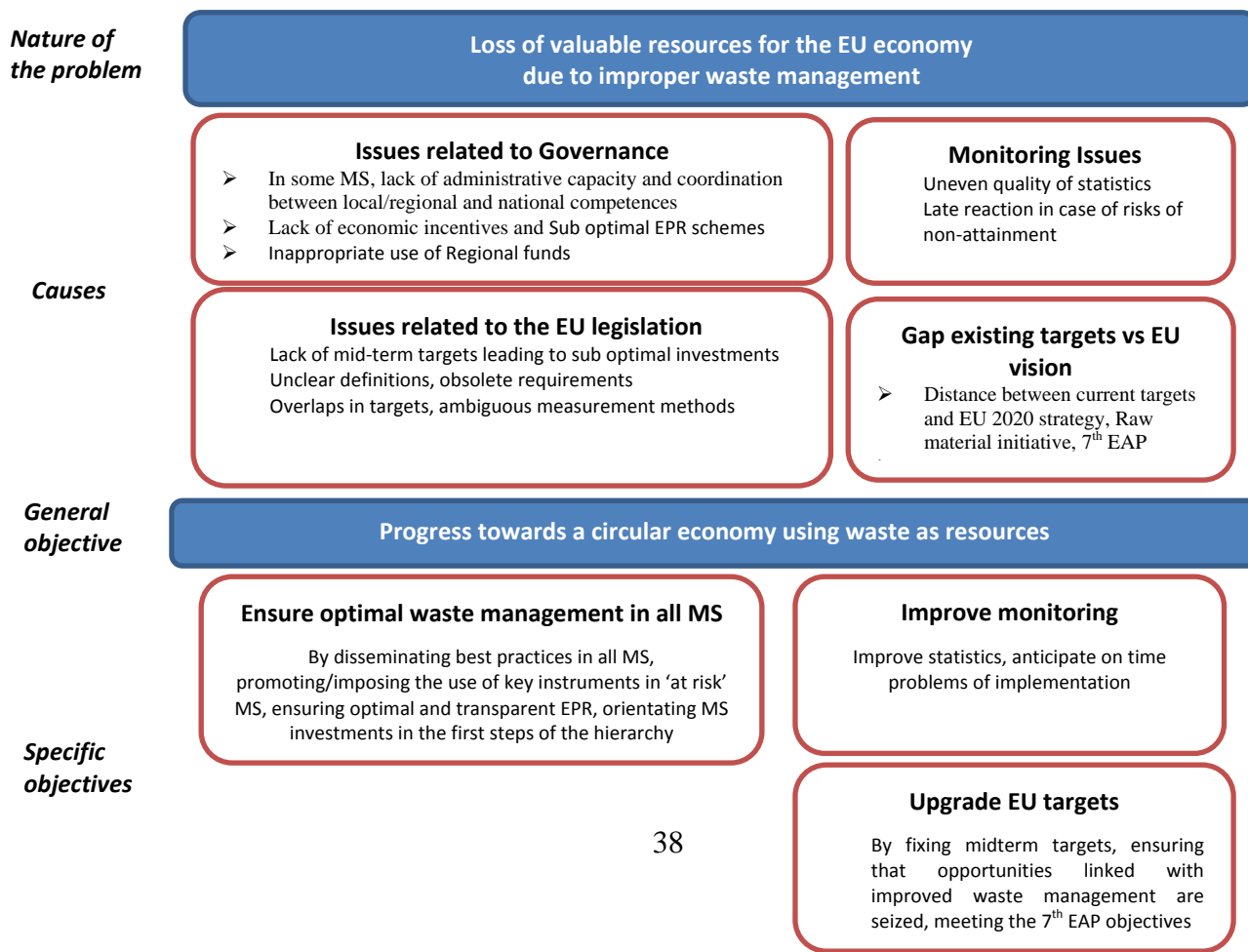
- best practices are in place progressively in all MS;
- a proper and reliable monitoring strategy is in place at EU and MS levels.

These objectives are in line with the **Europe 2020** strategy and particularly with the objective of promoting **sustainable growth** based on a ‘resource efficient’ economy – one of the 7 flagships of the strategy.

They also have the potential to contribute to several targets of the EU 2020 strategy including the creation of new skills and jobs especially in the less favoured areas of the Union where waste management is often not yet optimised, the promotion of innovation through research and the development of new technologies for instance to improve waste sorting and recycling operations but also to improve the eco design of products and the reduction of energy demand and related GHG emissions at a promising opportunity cost compared to other sectors by using more recycled materials compared to virgin materials.

Some contribution to poverty reduction might also be expected by the creation of non-qualified jobs which are, for the most part, impossible to outsource as well as by the development of re-use activities placing goods on the market for a second or subsequent time, at a reasonable access price.

The objectives to simplify legislation and reduce regulatory burdens (including for SMEs) as well as to ensure that targets are ‘fit for purpose’ are in line with the Commission's efforts to ensure regulatory fitness.



Possible
measures

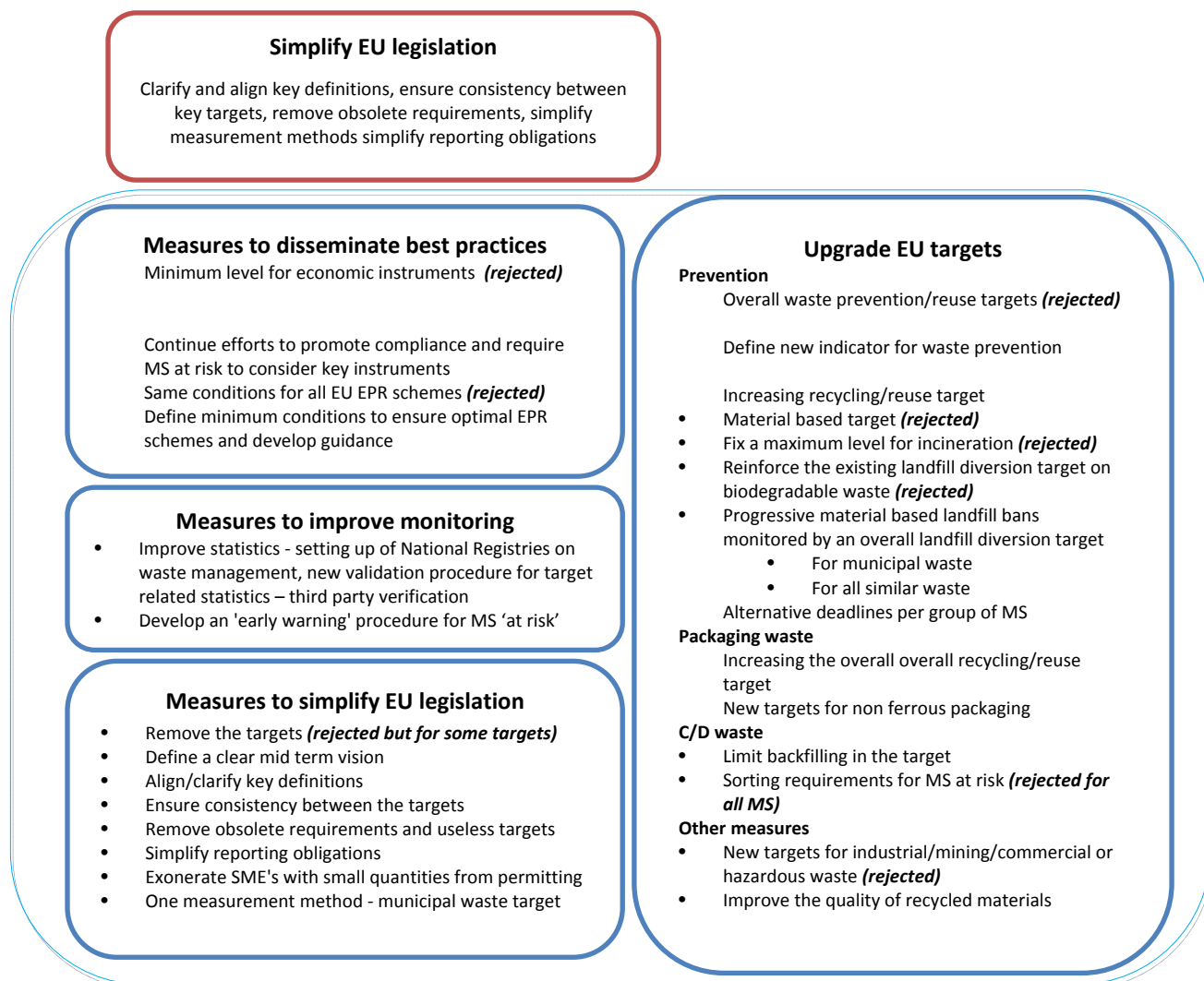


Table 5: Summary of the problem definition, objectives and possible measures

4. POLICY OPTIONS

A large scoping exercise was undertaken during which a long list of possible measures for change were considered. In the context of this IA, the most relevant and/or most preferred measures are analysed. Further details on the main reason for rejection of some of the Options considered during the consultation are given in Annex 6.

The links between the proposed measures, the objectives and the problem definition is summarised in Table 5 above which also takes into account the main conclusions from the fitness check. The proposed measures detailed in Table 5 above have been re-grouped into 3 main options (Option 1: ensuring full implementation, Option 2: simplification, better monitoring and best practice dissemination and Option 3: Upgrade the targets). A summary of the proposed options for analysis is given in the following Figure which makes the link with Table 5 above. The content of each Option is discussed in the following Section.

Option 1 – Ensuring full implementation

- All EU existing targets are met on time
- No additional EU action apart from compliance promotion

Option 2 – Simplification, improved monitoring, dissemination of best practices

- Align definitions, remove obsolete requirements
- Simplify measurement methods and reporting obligations
- National registries – third party verifications
- Early warning procedure, EPR minimum conditions

Option 3 – Upgrade EU targets

- Option 3.1 – Increase the recycling/reuse target for municipal waste
 - Low: 60% reuse/recycling target by 2030; 50% by 2025 with only one method
 - High: 70% reuse/recycling target by 2030; 60% by 2025 with one method
- Option 3.2 – Increase the packaging waste targets
 - Basis: top MS results in 2010 combined with stakeholder signals
 - Variant: target for nonferrous metals
- Option 3.3 – Limiting landfilling to residual waste
 - Ban on plastic/paper/glass/metals by 2025 (max 25% landfilling), global ban by 2030 (max 5%)
- Option 3.4 – Combination of options 4.1, 4.2 and 4.3
- Option 3.5 – same as option 3.4 with different deadlines for different groups of countries
- Option 3.6 – same as option 3.4 with more stringent deadline for all MS with the possibility of time derogation for some MS
- Option 3.7 – same as option 3.4 with landfill ban on all similar waste

Figure 8: Summary of the options considered

A 'No policy change' Option assuming that no policy change is introduced in the existing legislation and that no additional actions are taken to ensure a proper implementation of the existing targets has not been considered for further analysis. As detailed in section 2.4, there is a risk of non-attainment of the targets by some MS. This scenario - corresponding to the 'Business as usual' scenario - will not allow meeting most of the objectives defined in section 3 and therefore was not considered as an Option as such but simply as a 'scenario' useful to assess the possible impacts of ensuring the full implementation of the EU legislation.

4.1. Option 1: Ensuring full implementation of the existing legislation

This option assumes that all MS will meet all the existing targets on time. It will require additional efforts in some MS even though some MS have already met ten years in advance (2010) all existing targets. No additional EU legislative action is considered under this option.

Nevertheless, ensuring the full implementation of the targets will not be possible without disseminating some best practices – such as a minimum use of key economic instruments. In that sense, the Commission will have to continue its efforts to promote compliance on a voluntary basis notably by ensuring a follow-up of the already launched initiatives such as the establishment of Roadmaps for MS at risk and additional follow-up initiative.⁵² This option corresponds to the 'full implementation' scenario in the model on municipal waste.

4.2. Option 2: Simplification, improved monitoring and dissemination of best practices

This option includes a combination of legislative and non-legislative measures to simplify the existing legislation, improve its monitoring and ensure the dissemination of best practices. These measures do not include any changes in the targets themselves apart from simplifying the measurement methods. They imply some changes in the legislation and will contribute to ensure a proper implementation of the existing and future possible targets. In that sense, this option might be considered as complementary to Options 1 and 3.

Measures to simplify the EU waste legislation

⁵² See reference 6 in **Error! Reference source not found.** as well as a summary of the actions taken at Commission level to promote compliance: http://ec.europa.eu/environment/waste/framework/support_implementation.htm

Several **problems of definitions** have been identified and highlighted during the stakeholder consultation. There is a consensus to align the definitions of 'recycling' and 'reuse' between the PPWD to the WFD which is one of the main recommendations of the fitness check. In practice, it is proposed to align the definitions included in the PPWD to those of the WFD. A better definition of 'municipal waste' in the WFD and in the Landfill Directive is needed to avoid major differences of interpretation between MS. The definition of municipal waste should be as far as possible aligned with the one used at international level (OECD) and by Eurostat. In practice, it is proposed to include a definition of 'municipal waste' in the WFD. The added value of launching a complex discussion on the definitions of 'biodegradable' waste and 'treatment' in the Landfill Directive might be limited at this stage if this target is not extended beyond 2020 (see section 4.2), therefore no specific action to clarify these concepts is proposed.

Establishing a **single measurement method** for the target for household and other similar waste is a proposal supported by the stakeholders. It is proposed to allow only one measurement method – that is, Method 4 - which is based on the total amount of municipal waste recycled. The other methods were rejected due to their complexity and lack of correspondence with the internationally recognised definition of municipal waste.⁵³ As detailed in section 4.4 (see Table 6), knowing that changing the measurement method has implications on the level of the target and for legal certainty reasons, it is proposed to move towards only one measurement method by 2025 at the latest. This will give enough time to MS to adapt their waste management plans (see section 4.4).

Similarly, for **C/D waste** further action should be taken to avoid abuse from some MS when they report on backfilling which represents a significant and hard to monitor amount in some MS – see Table 4. High levels of backfilling prevent MS from making enough efforts on recycling C/D waste. It is therefore proposed to further analyse the possibility of fixing a maximum ceiling for backfilling in the context of the calculation of the recovery target. In practice, this should be achieved in the coming months on the basis of additional studies aiming at gathering enough evidence on the potential impacts of fixing such a ceiling.

A **drastic simplification of the reporting obligations** for MS will be considered through the abandonment of the MS tri annual reporting obligations which have a limited added value compared to the administrative burden.

Based on the conclusions of the Top 10 consultation on administrative burden on SME's, specific measures should be foreseen to oblige MS (it is only a possibility in the WFD) to **exclude SMEs** producing or transporting non-hazardous waste in small quantities from any permitting obligation. This is a repeated and reasonable demand from SMEs when small quantities of non-hazardous waste are involved. In practice, it is proposed to include these simplifications in the WFD.

To ensure MS reinforce action to tackle the problem of littering, it is proposed to include a more explicit reference to **measures against littering** in the WFD, for instance in connection to the waste management plans that MS are required to establish under article 28 of the Directive but also in the context of the EPR schemes.

Measures to improve monitoring

Improving the **quality and validity of the reported statistics** is one of the key priorities identified by the vast majority of stakeholder as well as in the fitness check. On top of the continuous efforts to improve the quality and validation of the statistics undertaken by Eurostat, additional actions at MS level are needed. Two additional measures are proposed:

⁵³ The impacts of changing the measurement method are assessed under Option 3 – see below

- the creation of a '**National Registry**' on waste collection and management: several MS⁵⁴ have already put in place such registries with most of them being completely computerised. It has allowed eliminating major inconsistencies between National reporting bodies while improving the quality of the data collected.
- requiring **third party verification** before transmitting data and statistics to the EU particularly when legally binding targets are concerned – this will ensure that data transmitted are validated and conform to EU guidance.

In practice, it is proposed to include the obligation of establishing National registries and to ensure third party verification of key statistics in the WFD. A delegation should be given to the Commission to define more technical requirements. Also the Commission should organise exchange of best practices between MS. These measures corresponds to the unanimous stakeholder demand but also to Commission' concern to base its policy on reliable evidence. It is indeed essential to ensure that targets are properly monitored on the basis of a common methodology and with a reliable verification mechanism.

The reinforcement of the central role of the waste data centre of Eurostat in terms of gathering all waste related statistics including in relation to the attainment of the legally-binding targets will be considered. In that sense, all waste statistics - including those needed to assess whether the legally binding targets are met - should be directly reported to Eurostat. Whether the waste statistics regulation could become the sole instrument for gathering and validating all waste related statistics should be further investigated. In practice, it is proposed to include in the WFD the obligation to report all waste related statistics currently reported through the 3 annual reporting obligations (to be repealed – see above) directly to Eurostat. Additional guidance documents will be delivered, notably on how to report statistics on packaging and the recycling thereof.

Developing an '**Early warning**' procedure aiming at regularly monitoring MS performances against key legally-binding targets was considered as an appropriate measure by 92% of the respondents of the public consultation. It is indeed essential to identify well in advance of the legally binding deadlines those MS not making enough progress so that correcting measures could be taken on time. These measures could consist in taking concrete actions to ensure that best practices are progressively applied in the identified MS – including the application of key economic instruments at a sufficient level to enable to meet the targets on time. The waste management plans of the MS identified under this procedure should be evaluated by the Commission and additional measures such as for instance additional sorting requirements for C/D waste, additional measure on prevention, more public awareness, etc should be obligatory envisaged by those MS.

In practice, it is proposed to include the 'early warning' procedure in the WFD. With the support of the EEA and using notably the ex post and ex ante tools (modelling) developed by the EEA and the Commission, it is proposed to make regular assessment (every 3 years) and projections of MS performances and 'distance to target' in order to identify MS at risk of non-attainment of key targets (landfill diversion, packaging, construction and demolition waste, municipal waste). MS identified as 'at risk' should submit to the Commission a strategy aiming at meeting the targets on time.

Based on the experience of the most advanced MS and on the Roadmaps established during the compliance promotion exercise (see section 2.1), a list of measures to be envisaged by the MS in this strategy will be proposed. A dialogue will be organised between the Commission and the MS on the appropriateness of the proposed strategy. This approach will limit

⁵⁴ This notably the case in SK, CZ, BE, UK, AT, DE, NL but the list is not exhaustive

administrative burden while ensuring that appropriate measures are considered in the MS where they makes sense.

Measures to ensure the dissemination of best practices

As detailed in section 2 as well as in the fitness check, economic instruments are considered as indispensable to meet the EU targets. Nevertheless, imposing full harmonization of these instruments appears to be excessive and not useful for those MS making enough progress towards the targets.

It is therefore proposed to promote the **use of these economic instruments** through the ‘early warning’ procedure - see above - with a focus on those ‘at risk’ MS. The same approach should be followed to ensure that MS are taking the necessary measures for **‘incentivizing’ local authorities** to launch and intensify separate collection to increase recycling and reuse rates.

Establishing a systematic procedure to **evaluate** the adequacy of the **National or Regional waste management plans** will imply heavy administrative burden which is not justified for those MS on their way to meeting the targets. This systematic evaluation should therefore again be reserved for MS identified under the ‘early warning’ procedure.

In addition to the promotion of EPR schemes, measures to improve the cost efficiency of the schemes seem to be needed notably by ensuring a minimum harmonization between the national **EPR** systems. In line with most of stakeholder views, and in line with the conclusions of the fitness check, **minimum conditions** to be defined at EU level for insertion in the national ad-hoc legislation should be considered including measures to: clarify EPR definition, their scope, objectives and the responsibilities of the different actors; ensure that minimal enforcement measures are in place as well as a enough transparency, fair competition, with sufficient control and equal rules for all, and no distortion of the internal market; ensure that the fees paid by producer/importer to a collective scheme are reasonable and reflect the true and full cost for the end-of-life management of its product. **Additional guidance** should be provided to MS notably to ensure proper enforcement and combat effectively ‘free riders’, to ensure a fair competition, to ensure that exports of waste are in conformity with the EU legislation. In practice, it is proposed to include in the WFD minimum conditions that should be respected when EPR schemes are established by MS. This will be completed by guidance provided by the Commission on the best practices to establish cost efficient EPR schemes.

In order to ensure a **better use of EU structural funds**, and following the publication of the EU Court of Auditors report, the Commission has already adopted new rules for the use of structural funds for the period 2014-2021 including ex-ante conditions partly aligned with the recommendations of the Court. Four ex ante conditions have been defined in relation to waste management including the adequacy of the waste management plans and of the measures taken to meet the existing targets. The Commission is currently assessing whether these conditions are met or not for each MS. Additional measures, for instance, to promote the use of economic instruments to support the investments achieved with EU funds, are included in the proposed options of this IA.

Past experience⁵⁵ has demonstrated that structural funds are useful to help MS to meet the European targets but cannot be considered as an ‘alternative instrument’ to these targets. The European legislation and particularly the targets are providing the necessary frame to ensure that EU funds are properly used. As explained in the report from the Court of the Auditors, too much EU money (around 50%) has been invested in the lowest steps of the waste hierarchy (landfilling and incineration) and this is partly due to the lack of clear midterm

⁵⁵ Reference 13 in **Error! Reference source not found.**

perspective at EU level. Furthermore, the same report indicates that investments in sorting and composting infrastructure appear to be functioning at a low level of efficiency, potentially because of the poor linkages to appropriately-designed collection systems.

4.3. Option 3: Measures to upgrade the EU targets

Removing the targets from the legislation might be seen as a radical way of simplifying the EU waste legislation. In this IA, the added value of each individual target will be discussed and, where appropriate, it will be proposed to update existing targets, as well as to remove unnecessary or obsolete ones. New targets are only proposed if they are ‘fit for purpose’ and have a clear added value.

As explained in section 2.5.1 materials prices are fluctuating. They are not sufficiently attractive for all materials to cover the costs of separate collection and sorting activities needed to produce secondary raw materials. Waste streams are composed by different type of materials – some of them being profitable, others not and this changes over time. Targets are therefore necessary to ensure that waste is properly treated independently from material market fluctuations. This is absolutely needed to ensure that new investments will be accomplished on safe grounds in the waste management (recycling/reuse) sector.

As detailed in section 2.2, time is needed to change collections systems, ensure proper information of waste collection and management, build the required infrastructure and put in place appropriate economic instruments. It is therefore proposed to provide a medium term vision to the legislation by defining targets to be met at 2030 time horizon, with interim targets for 2020 and 2025. This will provide to the operator a clear signal on the investments to be achieved in the coming decade.

The stakeholder consultation has shown that this signal is awaited from the European Union. Apart from the fact that quantitative targets are indispensable to establish concrete and useful waste management plans, midterm targets will allow avoiding the mistaken made by some front runner MS having created over capacities of incineration (see section 2.5.1). It will also prevent the multiplication of low performing MBT facilities based on mixed waste collection and leading to high levels of landfilling.

In summary, midterm targets will clarify once for all the meaning of the waste hierarchy and will provide a stable context favouring investments in reliable and long term solutions based on high recycling/reuse rates and valid for several years. While some measures will be considered for other categories of waste, the focus will be on municipal, packaging and C/D waste since the management of these types of waste represents a good proxy to measure the overall performance of waste management: MS ensuring a proper management of their municipal waste have set in place a package of measures which benefit to all waste including public awareness, use of economic instruments, proper monitoring of waste generation and treatment etc. The main reasons for not considering other waste streams are summarised in Annex 6.

It is proposed to limit measures linked with construction and demolition waste to general measures detailed in Option 2 - improved statistics, limiting possible abuse on backfilling, early warning procedure. Reviewing the 70% existing material recovery target was rejected at this stage mainly because the priority is to ensure a sound implementation of the existing target but also due to the lack of ‘stable’ statistics on C/D waste – the statistical series being relatively recent. When there is more experience and better availability of reliable data, the target should be reviewed, including the possibility of material-specific targets.

Prevention and Re-use

Defining an **overall waste prevention target** and/or a target for **packaging prevention** appears to be attractive for some stakeholders (NGO’s, academics, part of public authorities)

but not for others. At this stage it does not seem appropriate to define a legally binding weight-based quantitative target for prevention. There is a problem of timing as according to the WFD, MS are required to adopt by the end of 2013 National Prevention Programmes (NPPs) and it would be logical to assess the effectiveness of these Programmes before proposing any possible EU wide prevention targets. In addition, as highlighted in the fitness check, prevention for packaging waste seems difficult to implement and measure as the packaging materials, distribution systems and consumer demand are constantly changing. Nevertheless, evidence shows that efforts have been accomplished to limit the amount of packaging placed in the market notably under the influence of EPR schemes.

Nevertheless, progress in terms of prevention should be better monitored and compared at EU level. It is therefore proposed to define new indicators for waste prevention based on actual data on GDP and internal consumption linked to municipal and all waste generation. These indicators could be generated by the EEA, building upon Eurostat's data, on an annual basis and without any additional reporting obligation for the MS.

Notwithstanding the difficulties of setting waste prevention targets at the EU level – see Annex 6 - MS should be strongly encouraged to consider setting such targets within their own prevention programs, particularly for those MS at higher per capita income levels where, although recycling rates may be higher, consumption is also at much higher levels, leading to higher levels of waste generation. Regular inventories/benchmarking of prevention measures will be established by the EEA.

Defining prevention targets for specific waste streams or products having a higher environmental impact might be relevant, and a consensus has emerged to focus on food wastage. As there is a specific impact assessment on the sustainability of the food chain, this aspect will not be covered by the current IA. Promoting the use of EPR schemes and fixing minimum conditions notably on the application of the polluter pays principle will have some impacts on prevention: producer/importers will indeed be financially incentivized to place on the market better designed products generating less waste, as well as products which are easier to reuse and recycle.

Reuse will be encouraged through the proposed increase of the recycling/preparation for reuse targets both for municipal and packaging waste.

In conclusion, after having considered several options to review the targets, only the following options 3.1 to 3.7 were retained for further consideration in the context of this impact assessment. In order to properly assess the added value of each option, they were first considered in isolation (options 3.1 to 3.3 – increasing recycling/reuse rates for municipal waste, then for packaging waste, then imposing a landfill reduction). A combination of measures is then proposed into one option aiming at increasing recycling rates while reducing landfilling at the time (option 3.4). In order to take into account the large variety of performances between MS, different deadlines were applied to Member States (options 3.5 and 3.6). Finally, an extension of the landfill ban to all waste similar to municipal waste and sent in the same landfills is envisaged in option 3.7.

Municipal and Packaging waste

Options 3.1 - increasing the recycling/preparation for reuse target for overall municipal waste seems to be reasonable in the medium-term. The current target of 50% with 4 allowed measurement methods by 2020 should not be changed in order to maintain legal certainty.

The actual performance of some MS and regions in the MS indicates recycling/reuse rates between 70% and 85% are already achieved today see Figure 3 and Figure 9. On this basis, it is proposed to consider two levels of targets – 60 and 70% for further consideration. This corresponds to the level identified during the stakeholder consultation (see Annex 3), 84% of

the stakeholder felt that existing targets for municipal waste could be increased to an average of 70% with some differences between NGO's (80%), citizen (75%) public authorities (70%) and industry (between 65% and 70%). Tough similar levels were proposed by NGO's respondents from the 'less advanced MS'⁵⁶, the proposed levels were slightly lower for industry (62,5%) and public authorities (65%) originating from these MS.

As several regions and some MS have already met between 60 and 85% of re-use and recycling in 2011, meeting between 60 and 70% recycling is considered as feasible (see Figure 3 and Figure 9).

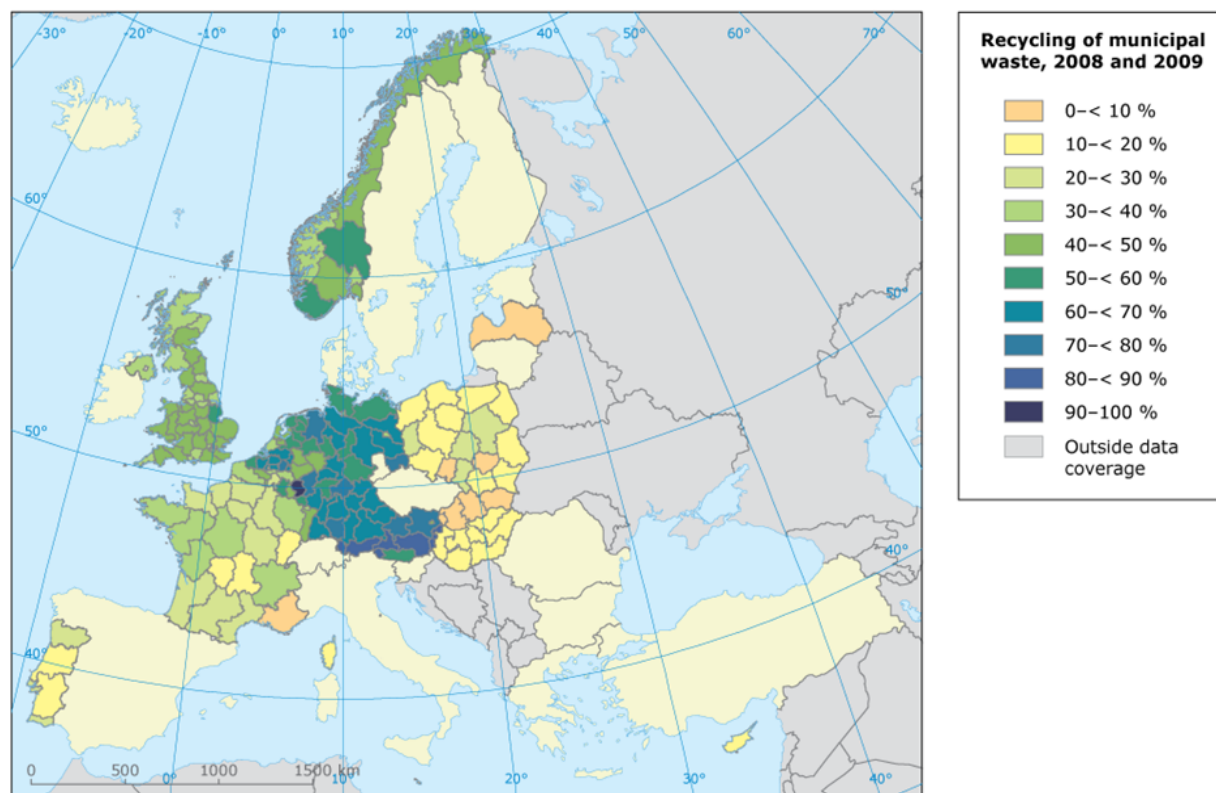


Figure 9: Recycling of municipal waste in EU Regions ⁵⁷

The large divergence in terms of waste management performance between different Member States has been taken into account to fix the deadline needed to meet the proposed targets: past experience in terms of increasing the recycling rates⁵⁸ - average increase of 2 to maximum 3% per year, indicates that a reasonable deadline for all MS to meet the higher proposed target would be 2030. For individual MS, this evolution can take place far quicker.

For example, the Flemish and the Walloon regions of Belgium moved from less than 20% recycling to more than 60% recycling in a period of 7 years. Generally speaking more rapid progress can be expected in the future: based on the experience of the most advanced MS, key instruments to favor recycling and reuse are well known – see section 2.5.1. Also new techniques in separate collection, automatized sorting techniques and recycling have emerged and should allow higher progress rates in the coming years.

Therefore, the following sub options were considered as a means to understand the relative merits of higher or lower targets:

⁵⁶ Less advanced MS were identified in a study of the Commission – see reference 6 in Annex 2. It includes BU, HR, CY, CZ, EE, GR, IT, LV, LT, MT, PL, RO and SK.

⁵⁷ Source: EEA reference 7, Annex 1. 2008 data were used for BE, DE, FR, HU, RO and SI. 2009 data were used for the rest of the countries. Data were not available for MS in yellow and some uncertainties were identified for data from some MS (lack of common reporting methodology at regional level)

⁵⁸ See EEA report, reference 7 in Annex 1

	2020 (4 measurement methods)	2025 (only method 4)	2030 (only method 4)
Option 4.1 - Low	50%	50%	60%
Option 4.1 - High	50%	60%	70%

Table 6: Option 3.1: considered re-use/recycling targets for MSW

Option 3.2 – Packaging waste: As shown in Table 7 below, and in line with the conclusions of the fitness check, there is room to **increase the targets of the packaging waste Directive** in the medium term. Stakeholders also provided a clear indication that they believed the recycling targets for packaging waste could be increased. When asked what the highest level of recycling they believe could reasonably be achieved for the materials included in the current target, stakeholders provided the average response detailed in Table 7 with some differences between stakeholder categories (between 65/70% for all packaging for industry to 75% for public authorities and 80% for NGO's by between 2021 and 2024). Similar levels were proposed by respondents from the 'less advanced MS' except for NGO's for which the proposed levels were slightly lower (73%).

	Overall	Paper and Cardboard	Glass	Metals	Plastics	Wood
Recycling target	55.0	60.0	60.0	50.0	22.5	15.0
EU Average	61	83	68	68.5	37.2	38.6
MS Exceeding Target	21	26	19	23	26	25
Top 3 MS	75	96.3	96	93.8	61.1	81.1
Stakeholder views (2021-2024)	70	75	80	75	60	60

Table 7: Packaging recycling rates (%) per material, 2010 data and stakeholder views⁵⁹

In line with stakeholder views, intermediate targets will be proposed in 2020 and 2025 though the 2030 targets will be fixed in the basis of the current performances of the most advanced MS – see Table 8. These targets should be progressively increased by 2030 and should be consistent with the targets fixed for municipal waste. Preparation for reuse should be taken into account in the calculation of the target.

The possibility to define additional targets for materials having a larger impact on the environment and on energy demand such as non-ferrous metals – mainly aluminum - will be analyzed (**Option 3.2- nonferrous**). Some MS are indeed meeting the target on metal without making enough efforts on collecting/recycling aluminum at source.

The case of plastics is somewhat different: actual 'top 3' MS are recycling 61% of packaging plastics. According to the EU plastic industry, the target could be increased to 62% with additional efforts on source separation of waste.

Knowing the significant impact of plastics on the environment, it is proposed to increase the target to 45% by 2020 and to 60% by 2025. New mid-term targets should be fixed by 2030 on

⁵⁹ Source: Eurostat 2013

the basis of the evolution of the types of plastics placed on the market and the development of new recycling techniques.

The 2030 levels are considered as realistic as they were already met in at least 3 MS in 2011 though the 2020 and 2025 proposed targets are already met by several MS which is confirmed by stakeholder views. Even though differences of performances between MS is less significant for packaging waste than for other waste, these differences have been taken into account by fixing reasonable targets to be met in reasonable deadlines (15 years to pass from 55% recycling to 80% recycling/reuse). The alignment of the definition of the target (inclusion of preparation for reuse in the definition of the target) will also allow additional flexibility particularly relevant in the case of packaging (notably when considering reusable beverage packaging).

	2020	2025	2030
Overall recycling/preparation for reuse	60%	70%	80%
Plastics	45%	60%	To be reviewed
Non ferrous metal	85%	90%	90%
Ferrous metal	70%	80%	90%
Glass	70%	80%	90%
Paper/Cardboard	85%	90%	90%
Wood	50%	65%	80%

Table 8: Option 3.2 - Proposed new target for packaging waste

In order to **improve the quality of the recycling** and decrease the level of contamination of materials separately collected, a reinforcement of the at source separation provision will be envisaged, at least for the existing 4 materials targets in the WFD. The added value of imposing additional at source separation for other materials seems to be limited. Some flexibility should be left for the waste management organization according to local circumstances.

Option 3.3 will include measures to **limit landfilling to waste that is ‘not recoverable’**. 6 MS already today are landfilling less than 5% of their municipal waste – which could be considered as corresponding to 'not recoverable waste'. The majority of MS landfilling the smallest percentage of municipal waste initially introduced landfill taxes followed in most cases, by landfill bans or restrictions applied on to various materials/waste streams.

It is therefore proposed to introduce a progressive ban on landfilling: firstly on the materials already targeted in the WFD by separate collection obligations in 2015 - plastics, glass, metals and paper/cardboard - followed by a ban on all 'recoverable' waste including biodegradable waste, wood waste, etc. In order to properly monitor the implementation of these bans, a landfill diversion target of respectively 25% and 5% corresponding broadly to the implementation of these bans on the basis of the average EU municipal waste composition would be proposed.

Introducing progressive landfill bans seems to be the most appropriate way of giving a clear signal to all actors involved in waste management in the European Union – which – according to the public consultation – is a clear demand from the vast majority of stakeholder. In addition, this approach might limit the risks of increased shipments of waste for disposal to MS where landfilling continues to be allowed for longer. As experienced in the most advanced MS, in order to move progressively in the direction of landfill bans which would be

the final aim, landfill taxes were introduced and progressively increased so that landfilling was more and more discouraged until it was reduced to few percentages.

As mentioned in the 7th EAP and during the stakeholder consultation, realistic targets should be defined in order to take into account variations between MS in terms of waste management. The experience of the most advanced MS⁶⁰ indicates that an average 3-5% annual landfill reduction could be met. Therefore in order to take into account the large differences between MS in terms of landfilling rates, it is proposed to fix realistic deadlines for the introduction of these bans: around 2025 (4 waste streams ban) and 2030 - wider ban. These targets and these deadlines are considered as realistic as already 5 MS are landfilling less than 5% of their municipal waste today, one MS (Estonia – see Box 3) has shown that dramatic reduction of landfilling could be met with the use of some ad-hoc economic instruments and as the time needed to reduce landfilling in the most advanced MS has been taken into account to extrapolate the proposed deadlines. This approach was also supported by all categories of stakeholders.

This new target to limit landfilling should progressively replace the existing landfill reduction target on biodegradable waste for which the latest deadline is 2020. Prolonging and reinforcing this 1995 based target on biodegradable waste will therefore be redundant and not justified also recognizing that its enforcement remains difficult to monitor due to the absence of an agreed definition of biodegradable waste.

Combination of measures

Under **Option 3.4**, a combination of options is considered. Options 3.1, 3.2 and 3.3 interacts indeed directly together: increasing the overall recycling/reuse rate for municipal waste can be achieved by increasing recycling of both the ‘dry’ fraction of the municipal waste – which includes a large share of packaging waste (between 30 and 40%) and the ‘wet’ fraction of the municipal waste – mainly organic waste (food waste, garden waste other organics). At the same time, increasing reuse/recycling rates of municipal waste up to 60 or 70% will mechanically have an influence on the landfilling rates of municipal waste. It therefore makes sense to combine these options into a package of measure and to assess their potential synergies. A summary of Option 3.4 is provided in Table 10.

As explained above in Section 4.4, these targets were fixed on the basis of what is currently (in 2010) achieved in the most advanced MS or regions thereof. Following this, on the basis of the past experience of the most advanced MS, the time needed to meet these targets by all MS was calculated to fix the deadlines. Therefore **no time derogation** is proposed in the initial Option 3.4.

Combination of measures, more stringent deadlines and differentiated approach

Fixing non uniform recycling targets for Member States taking into account the difference in terms of waste generation and composition, the current waste management performances or the potential contribution in terms of potential amounts of waste which could be recycled are options which was rejected for the following reasons:

- Even though there are differences in terms of municipal waste composition between Member States, the potential for recycling remain broadly equivalent and independent from waste composition: available recycling techniques cover a large spectrum of waste (from organic/wet to dry waste). Therefore there are no objective reasons to introduce different recycling targets based waste composition. In addition, this option would dramatically complicate the legislation and its enforcement;

⁶⁰ See references 1 and 7 in **Error! Reference source not found.**

- Waste generation is expected to increase in the coming years in several MS (albeit not necessarily coupled to GDP increases) particularly in those MS with lower levels of per capita income (past experience shows that stabilisation of waste per capita may be expected after a certain level of GDP/capita has been attained);
- During the stakeholder consultation, there was a broad consensus on the ‘destination’ to reach in terms of waste management (aligned to the objectives of the 7th EAP) but several stakeholder – including MS - insisted for having enough time to meet these objectives;
- Resource efficiency is an EU policy flagship of EU 2020 and should be promoted in all MS – there are no objective reasons to allow some MS to not make efforts to improve EU resource efficiency.

Nevertheless, as MS are not starting from the same level in terms of waste management – see notably Figure 3, it is proposed to consider **differentiated deadlines for MS** to assess the possible impacts of alternative trajectories to implement option 3.4 in a realistic way:

- Option 3.5: differentiated deadlines per group of MS based on their current level of performance
- Option 3.6: more stringent deadlines for all MS with the possibility of a 5 year maximum time derogation for some MS

To illustrate the possible impacts of a differentiated approach, a tentative grouping of the MS according to their level of performance is provided in Table 9 below. These options – summarized in Table 10 - will allow the possible benefits of improved waste management to be harnessed more rapidly in the MS where accelerated deadlines are achievable.

Group 1	Group 2	Group 3
7 MS landfilling less than 10% of municipal waste and recycling more than 40% (2010) AT, BE, DE, SE, DK, NL, LU	7 MS landfilling between 10 and 60% of municipal waste and recycling between 30 and 40% (2010) IE, SP, SI, IT, FR, FI, UK	14 remaining MS

Table 9: Tentative grouping of the MS according to their performances

An alternative to Option 3.4 (Option 3.7) extending the landfill ban on all waste similar to municipal waste has also been tested. This extension might be easier to enforce at landfill gates and bring additional benefits in terms of recycling.

	2015	2020	2025	2030
Municipal overall recycling target				
Option 3.4 and 3.7	n/a	50% - all any method	60% - all one method	70%
Option 3.5- Differentiated deadlines	n/a	50% - Groups 1 & 2 one method only	60% - all one method	70%
Option 3.6 - Same deadlines + time derogations	n/a	50% one method Group 3 derogated to 2025	60% - all one method	70%
Landfilling				
Option 3.4			All - 25% <i>max landfilling</i>	All - 5% <i>max landfilling</i>
Option 3.5 - Differentiated deadlines	Group 1 5% <i>max landfilling</i>	Group 2 - 25% <i>max landfilling</i>	Group 3 - 25% <i>max landfilling</i>	Groups 2/3 - 5% <i>max landfilling</i>
Option 3.6 - Same deadlines + time derogations		All - 25% <i>max landfilling</i> <i>Derogations for Group 3 to 2025</i>	All - 5% <i>max landfilling</i> <i>Derogations for Groups 2 & 3 to 2030</i>	
Option 3.7 – landfill ban extended to all similar waste			All - 25% <i>max landfilling</i>	All - 5% <i>max landfilling</i>
Ban on plastic, paper, glass and metals = (25% <i>max landfilling</i>) Global ban = (5% <i>max landfilling</i>)				

Table 10: Summary of Options 3.4, 3.5, 3.6 and 3.7

Actual and projected future performance rates in recycling are also important in light of the development of the **marine litter reduction target**, since recycling directly reduces the volume of waste which has the potential to escape into the (marine) environment.