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**REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE
COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE
COMMITTEE OF THE REGIONS**

on the Thematic Strategy on the Prevention and Recycling of Waste

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1. INTRODUCTION

EU waste policy contributes to increasing the EU's resource-efficiency and reducing the negative environmental and health impacts over the life-cycle of resources. The Thematic Strategy on the Prevention and Recycling of Waste ("Strategy")¹ adopted in 2005 sets as long-term goal for the EU to become a recycling society that seeks to avoid waste and uses waste as a resource. To this end, the Strategy sets out key actions to modernize the existing legal framework and to promote waste prevention, reuse and recycling, with waste disposal only as last resort.

This Communication reviews progress towards achieving the Strategy's objectives and will feed into the evaluation of the 6th Environment Action Programme².

It is accompanied by a Staff Working Document which provides further background information on the key actions of Section 2 and detailed references to the data used in section 3 and to the pieces of legislation mentioned below. It also includes a summary the key findings of the stakeholder consultation.

2. PROGRESS ON THE STRATEGY'S KEY ACTIONS

The Strategy identified 7 key actions to achieve its objectives. This section assesses the progress made with implementing these actions.

Implementation and enforcement of existing EU waste legislation

Since 2005, the Commission has stepped up supporting actions to improve implementation and enforcement of the EU waste acquis at national level. It has organised more than 60 meetings, over 40 awareness raising and information exchange events in all Member States. 5 EU guidelines on the interpretation and implementation of key concepts of the waste legislation were published, to resolve disputed interpretation problems.

More than 10.000 joint inspections on waste shipments were carried out in cooperation with national inspectorate bodies, involving 22 Member States and neighbouring countries, demonstrating that about 19% of transfrontier shipments of waste were in violation of the waste legislation. Financial support to improve waste management has been made available through Cohesion policy. Between 2005 and 2006 around 4.1 billion € were spent to support the closure or rehabilitation of unauthorised landfills, develop waste management infrastructure and support separate collection and recycling schemes.

¹ COM (2005) 666

² Decision 1600/2002/EC

A recent Commission report confirms that the lack of proper implementation continues to cause widespread failure in achieving the agreed environmental protection objectives in practice and shows significant disparities between Member States. At the end of 2009, waste represented on average 20% of all environmental infringement cases.

Simplification and Modernisation

Since the adoption of the Strategy, the Commission has taken continuous action to make the EU waste legislation more cost-effective in order to provide the basis of sustainable growth.

The revised Waste Shipment Regulation³ came into force in 2007, reinforcing and simplifying the existing procedures for controlling waste shipments and improving cooperation between Member States. The Directives on waste from the titanium dioxide industry were included in the new Directive on Industrial Emissions⁴ which reduces administrative burden at an EU level by €32 million for the activities within its scope.

In 2008, the Commission proposed to further modernize and streamline the Directives on electronic waste (WEEE⁵ and RoHS⁶) and to ensure coherence with more recent legislation such as REACH⁷ and the revised Waste Framework Directive⁸, (WFD). The Commission proposal on the registration requirements under WEEE could lead to administrative burden reductions up to €66 million.

The WFD has further modernized and simplified the waste acquis. For example the Hazardous Waste and the Waste Oils Directives were incorporated in the WFD and the requirements for national waste management plans were streamlined. The Commission will further assess the possibility of improving consistency of the EU waste acquis through an ex-post evaluation to be launched in 2011. Finally, many of the recommendations of the High Level Group on Administrative Burden were taken into account.

Introducing life-cycle thinking in waste policy

Life-cycling thinking looks at environmental impacts throughout the entire life cycle of a product, from extraction of resources to their disposal phase. The waste hierarchy favours prevention of waste, followed by reuse, recycling, recovery, with disposal of waste being the last resort. However, since different waste treatment methods can have different environmental and health outcomes, Member States can deviate from the waste hierarchy if justified by life-cycle thinking. The Commission will use this tool when assessing the national waste management plans and will publish in 2011 a set of guidance documents on how to use this tool in waste policies.

The WFD also modernised the concept of 'waste' to encourage a life cycle approach, for example, by clarifying the distinction between wastes and 'by-products' and introducing 'end-of-waste criteria' clarifying when waste ceases to be waste. The definition of 'energy recovery' was simplified and modernized with the introduction of a clear energy-efficiency threshold

³ Regulation 1013/2006.

⁴ COM(2007) 843.

⁵ 2002/96/EC.

⁶ 2002/95/EC.

⁷ Regulation 1907/2006.

⁸ 2008/98/EC.

which facilitates the functioning of the internal market. The Eco-design Directive⁹ applies life-cycle thinking when establishing eco-design measures to improve the environmental performance of products.

Waste Prevention

Waste prevention remains a clear priority in waste management. Since the adoption of the Strategy, the WFD introduces a number of new provisions aiming to maximise prevention efforts, in particular, through national waste prevention programmes. The Commission will publish prevention guidelines and update its set of best practice examples from across the EU.

Other legislation such as the Batteries Directive¹⁰ and the Directive on the management of extractive waste¹¹ - both adopted in 2006 - REACH, the Industrial Emission and the Ecodesign Directive also has the potential to improve waste prevention. Additional initiatives that address design, production and consumption aspects were launched through the adoption of the Sustainable Consumption and Production Action Plan¹² in 2008.

In 2009, the European Waste Prevention Week was launched in the EU with the support of the Commission.

Improving the knowledge base

Evidence-based policy making remains one of the principles of the Commission, including in a complex area of waste management policies. Required expertise in life-cycle thinking and assessment is being provided by a specific platform hosted by the Joint Research Centre (JRC). The Commission also cooperates with Eurostat, the European Environment Agency (EEA), and International Organisations. Eurostat hosts a Waste Data Centre as the central entry point for reporting and access to waste data. EEA regularly publishes on developments in waste and recycling, supported by its Topic Centre.

To improve the quality of national reporting, the Commission launched an exercise in 2010 focusing on the Directive on end-of-life vehicles¹³. Similar exercises could be launched in the future for reporting obligations under other pieces of waste legislation.

Development of recycling standards

The Strategy proposes a number of measures setting minimum EU standards for recycling activities in order to ensure the proper functioning of the internal market for recycling and spreading good practices across the EU, particularly for bio-waste derived products.

A reference document on the best available techniques for the Waste Treatments Industries was published in 2006¹⁴. The Commission's proposal on the Directive on Industrial

⁹ 2009/125/EC.

¹⁰ 2006/66/EC.

¹¹ 2006/21/EC.

¹² COM/2008/0397.

¹³ 2000/53/EC.

¹⁴ See: <http://eippcb.jrc.es/reference/wt.html>

Emissions¹⁵ of 2007 includes detailed specifications on permitting of waste treatment installations.

The Commission has started to develop “end-of-waste criteria” for waste which – after recovery – has ceased to be waste, starting with steel and aluminium scrap to be followed by copper, glass, paper, and compost.

Further elaboration of the EU's recycling policy

Since 2005, new or revised collection and recycling targets at EU level have further fostered the internal market for recycling.

The 85% reuse, recycling and recovery targets of the Directive on end-of-life vehicles, which are complemented with legislative design requirements on recyclability and reusability of vehicles placed on the market¹⁶, have been examined in 2006 and maintained at their ambitious levels. The Batteries Directive adopted in 2006 included collection and recycling targets for all batteries types.

In 2008, the revised WFD introduced a 50% target for recycling of municipal waste comprising at least paper, metal, plastic and glass; and a 70% target for construction and demolition waste (both to be met by 2020). In the same year, the Commission proposed to revise the collection and recycling targets for electronic waste, including a target for reuse.

The application of targets of the Landfill Directive¹⁷ has helped promoting the recovery of resources from waste by progressively diverting certain wastes from landfills: by 2006 (or 4 years later for some Member States having a derogation), the amount of biodegradable waste going to landfills had to be reduced to 75% of 1995 levels and to 50% by 2009. Bio-waste management in the EU still has not realised its full potential. Therefore, the 2010 Communication on bio-waste management in the EU¹⁸ proposes further action and notably the production of a guideline on bio-waste prevention and on applying life-cycling thinking to bio-waste management. A study to further analyse the possibility of setting EU bio-waste collection and/or recycling objectives has been launched. Next initiatives include compost standards through end-of-waste criteria and quality standards for applying compost on land through a revision of the Sewage Sludge Directive¹⁹.

3. PROGRESS TOWARDS THE LONG-TERM OBJECTIVES

One of the main expected achievements of the Strategy was to make progress towards an EU recycling society seeking to avoid waste and use waste as resource. More and better recycling, less waste going to landfills and more compost and energy recovery from waste were expected leading to significant environmental, economic and social benefits. This section assesses the progress made towards these long term objectives of the strategy.

¹⁵ COM/2007/0844.

¹⁶ Directive 2005/64/EC.

¹⁷ 99/31/EC.

¹⁸ COM/2010/235.

¹⁹ 86/278/EC.

In most Member States, waste generation seems to increase, or at best, stabilize. However, due to a strong decrease in 4 Member States, for the EU-27, **total annual waste generation** decreased with 10% between 2006 and 2008. . Additional analysis is needed to verify to what extent these decreases are due to the impacts of the economic crisis, to modified reporting methods and/or to progress in term of prevention. **Municipal solid waste (MSW) generation** (7% of total waste) has now stabilised around 524 kg per year and per capita (2008) in the EU-27. There is a relative decoupling between waste generation and consumption (which increased by 16.3 % between 1999 and in 2007). Large differences exist between Member States - from around 400 to 800 kg per capita. This compares to 750kg in the USA, and 400kg in Japan. .

If little tangible progress can be seen in **quantitative waste prevention**, some results have been obtained in **qualitative waste prevention**. For instance, the application of the substance ban of the RoHS Directive since 2006 has reduced the amount of potentially harmful substances in electronics placed on the EU market by about 110.000 tonnes annually.

Hazardous waste (3% of total waste) continues to decrease in the EU-12, notably due to the introduction of cleaner technology and mine closures although at EU-27 level an annual increase of 0.5% can still be observed. This also represents a relative decoupling with GDP growth.

Generation of **manufacturing waste** (12% of total waste) decreased by 5.4% between 2004 and 2006. Waste from **mining and quarrying** (25% of total waste) decreased by 14% over the same period. This is probably a consequence of efficiency measures in industry or as a result of changing economics within the EU favouring service industries rather than industrial activities such as manufacturing and mining. In the same time, waste from other economic sectors (**services**) increased by 6.2%.

In a number of areas, **re-use** markets are supported by public authorities. A clear definition of "re-use" has been introduced in the WFD, as well as new re-use targets in the proposal on the WEEE Directive recast. Therefore, data should become available in the coming years. Re-use also generates other benefits in terms of job creation, reduction of over consumption and providing second hand products at accessible prices.

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 38%, a progress of 5% compared to 2005 and 18 % compared to 1995. 40% of municipal waste was recycled or composted in 2008, a progress of 11.4 % between 2005 and 2008, with significant disparities between Member States (from few percent to 70%).

Energy recovery from waste has increased (from 96 kg per capita in 2005 to 102kg in 2008), having led to an increase in energy production: around at 1.3% of the EU 27 total energy production comes from incineration of MSW. It has been estimated that 50 to 60% of municipal waste incinerators in the EU will meet the new energy efficiency criteria of the WFD.

Since the adoption of the Strategy, less waste was sent to **landfill**: roughly 40% in 2008, compared to 49% in 2005, and 65% in 1995. The modernisation and simplification of the waste acquis makes it more cost-efficient. However, **large implementation and enforcement differences** persist between Member States. Depending on the targets and the waste streams, some Member States have gone far beyond achieving the minimum European

recycling or landfill diversion targets although others will have to make additional efforts to respect the EU requirements. In addition to good governance and a strong political will, the advanced Member States have created better conditions for the recycling markets by optimally using legal and economic instruments such as landfill bans, applying taxes and charges consistent with the waste hierarchy and applying the producer responsibility concept to various waste streams. This had led to a progressive internalisation of the waste management costs into the price of products and services.

Improved waste management **reduces negative environmental and health impacts** due to emissions to air, soil and water as well as greenhouse gas (GHG) emissions from waste disposal. Direct GHG emissions from the waste sector in the EU-27 – representing 2.8% of the total emissions in 2007, have decreased by more than 30% between 1995 and 2007.

Since the adoption of the Strategy, the closure of sub-standard landfills and incinerators has led to significant reduction of water, soil and air pollution. A high number of sub-standard landfills have been closed down (around 3.300 closures between 2004 and 2006). Nevertheless, approximately 1000 substandard landfills have been identified by the Commission as sub-standard landfills to be upgraded or closed as soon as possible.

Recycling provides new **economic opportunities**. It contributes to varying degrees to increasing the supply of valuable raw materials required for the EU economy. For example, scrap now contributes between 40% and 56% of input into EU bulk metal production. However, the EU's recycling of specific metals which are essential for some key applications remains low. It was estimated in 2009 that waste management and recycling industries in the EU have a turnover of €5 billion. The sector provides between 1,2 and 1,5 million jobs contributing to meet the EU 2020 objective of 75% employment rate and representing around 1% of GDP. Apart from waste avoidance, re-use generates other benefits in terms of job creation, reduction of overconsumption and providing second hand products at accessible prices.

4. INTERNATIONAL ASPECTS

The international context has become more and more important. Increased globalization and changes of the EU economy had led to increased imports of raw materials and semi-manufactured materials. At the same time, exports of waste which can be transformed into valuable secondary raw materials, and would thus reduce our raw material demand, also increased. This raises questions on the raw materials supply for the EU and the potential export of environmental problems to third countries in cases where resources or semi-manufactured materials are imported from sub-standard production facilities or exported waste ends up in substandard waste management facilities.

The Commission has taken several initiatives to promote sound waste management notably through the Environment and Natural Resources Thematic Programme. Several actions to support approximation to the EU acquis related to waste have also been financed in the European Neighbours.

The Commission is also addressing these issues through the Raw Materials Initiative²⁰, in which recycling policies play an important role, as well as through support for better

²⁰ COM/2008/699.

enforcement of the EU Waste Shipment Regulation. Despite these efforts, illegal export of waste is a continuous problem which is by essence difficult to quantify. The Commission also actively participates in the international discussions on the Basel ban which prohibits the export of hazardous waste to non-OECD countries.

Since the adoption of the Strategy, third countries are introducing similar waste and recycling policies to those of the EU, which creates frontrunner advantages for EU industry. For instance China, the US and India have introduced similar provisions on the restriction of the use of hazardous substances in electronic equipment.

5. FUTURE TRENDS

With continued growth of the world population combined with stronger emerging economies, **total consumption** is expected to **increase significantly**. This will lead to increased pressure on resource use with associated environmental and health impacts, in particular related to biotic materials, minerals and metals. As the demand for raw materials in the EU continues to grow, and given the EU's dependence on the importation of many raw materials, the role of recycling will become increasingly important.

Projections into **future trends in waste generation and treatment** indicate that without additional waste prevention policies, waste generation is expected to increase by 7% from 2008 to 2020. The application of REACH combined with national prevention policies is expected to contribute to reducing the generation of hazardous waste. With full implementation of existing acquis, **recycling** would increase from 40% in 2008 to 49% in 2020. **Landfilling** would decrease by 10% and stabilize at 28%. More bio-waste should be diverted from landfilling over the coming years offering new growth perspectives for composting and gas production.

On top of the expected effects of the Landfill Directive, more prevention and recycling could lead to additional significant benefits. Full implementation of EU waste legislation and increased prevention and recycling could lead to **additional GHG emission reduction** corresponding to a significant part of the European climate reduction targets by 2020. Recycling will continue to offer economic opportunities whilst contributing to the resource-efficiency of the EU economy. **It is estimated that the job creation in the waste recycling sector could amount up to half a million jobs.**

Large **implementation** and enforcement **differences** are expected to continue persist between Member States, unless additional measures are taken at EU level to support Member States and to ensure a level playing field, in particular in the field of national inspections. Compliance with EU targets on collection, recycling and landfill diversion will remain a priority and some Member States will have to make serious efforts to meet those EU targets.

6. CONCLUSIONS

The Strategy has played an important role in guiding policy development. Significant progress has been achieved on a number of fronts, particularly in the improvement and simplification of legislation, the establishment and diffusion of key concepts such as the waste hierarchy and life-cycle thinking, on setting focus on waste prevention, on coordination of efforts to improve knowledge, and on setting new European collection and recycling targets.

Overall, recycling rates have improved, the amount of waste going to landfill has decreased and the use of hazardous substances in some waste streams has been reduced. Current policies have led to a decrease of the relative environmental impacts per ton of waste treated. However, this is offset by the negative environmental impacts caused by the expected increase in waste generation.

Without further and complementary initiatives, opportunities will be missed to reduce greenhouse gas emissions and environmental impacts in general, create jobs and meet the future demands for resources.

Continuous efforts are needed to **improve the knowledge-base**: new indicators are needed to measure progress towards a recycling society and to map waste and material streams and resource flows. Better information and forecasts of life cycle based environmental and health impacts of the waste policies with a specific focus on resource and climate policies should be developed.

Proper implementation and enforcement of the existing EU waste acquis must remain a priority notably by ensuring compliance with key EU targets and to the full implementation of the WFD and the WSR. In this context, a proactive verification procedure combined with an early warning system on compliance with key EU targets will be developed based on the national waste management plans. The Commission will adopt measures to further support national waste prevention policies, including bio-waste prevention and reduced food wastage.

The Commission will explore new tools to support implementation and enforcement activities notably in the light of the recent accident in Hungary. A particular focus will be set on the EU coordination of national inspection activities to be based on result-oriented strategies and on the promotion of peer-review inspections and independent auditing schemes notably for facilities with a potential transboundary impact.

Significant margin for progress still exist beyond the current EU minimum collection and recycling targets. To this end, the introduction of instruments used by well performing Member States should be strongly encouraged particularly in worse performing Member States. Optimal combination of **economic and legal instruments** should be promoted notably through landfill bans and by applying the producer responsibility concept to additional waste streams on the basis of a common European approach.

Improving the competitiveness of EU recycling industries is essential for the generation of jobs in the EU. In that context, ensuring that competition takes place within a framework maintaining high levels of environmental protection is a key priority for the Commission. In addition, the Commission will look into how to better **prevent illegal exports of waste** and ensuring that waste exported to third countries is treated in high standard facilities, particularly for ship dismantling.

Waste policies can help develop the **markets of secondary raw materials** and strengthen their supply in the EU, thus improving the resource-efficiency of the EU economy. New market mechanisms favouring secondary raw materials should be explored, including economic incentives, notably to better take into account the significant potential in terms of GHG emission reduction conferred by recycling. Defining new and more ambitious prevention and recycling targets as well as moving towards material-specific targets can directly contribute to meet the **Europe 2020 objective** of "promoting a resource efficient economy" and to the related **Flagship Initiative**. In that sense, materials having negative

environment and health impacts over their entire life cycle, including on energy use and climate change should be better targeted. These targets could be incorporated into monitoring of Member States' progress towards resource efficient growth in the national reporting for Europe 2020. As meeting ambitious recycling and prevention targets requires the participation of the whole civil society, continuous efforts will be achieved to improve **stakeholder** participation and **raising public awareness**.

New initiatives to support innovation through Framework Programme and Innovation Partnerships and better incorporate life-cycle thinking in policy development will deserve particular attention. This would imply more consistency between **waste and product design** policies, including considering rules on the uptake of minimum content of recycled materials in priority products, the recyclability and durability of products and reducing the use of hazardous substances. The use of **structural and cohesion funds** will be encouraged along the lines of the waste hierarchy and for adoption of best available technologies.

After 5 years, the Strategy's main objectives remain valid. Intervention has focussed on better implementation and enforcement, moving up the waste hierarchy, promoting prevention in all its aspects and shifting to more holistic and consolidated resource policies which encompass waste management as an essential element of a wider picture. The Commission sees a need for further consolidation of its waste policies and will make further proposals in 2012, including concrete steps it intends to take in order to further move towards an EU resource-efficient recycling society.