



COMMISSION OF THE EUROPEAN COMMUNITIES

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**REPORT FROM THE COMMISSION TO THE COUNCIL AND THE EUROPEAN  
PARLIAMENT**

**ON THE TARGETS CONTAINED IN ARTICLE 7(2)(b) OF DIRECTIVE 2000/53/EC  
ON END-OF-LIFE VEHICLE**

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{SEC(2007)15}

## 1. INTRODUCTION

Directive 2000/53/EC on end-of-life vehicles (ELV Directive) sets out the following targets for reuse, recycling and recovery of end-of-life vehicles:

- 85% of reuse and recovery and 80% of reuse and recycling by 1 January 2006 ("2006 targets"),
- 95% of reuse and recovery and 85% of reuse and recycling by 1 January 2015 ("2015 targets").

The Directive provides that the European Parliament and the Council shall re-examine the 2015 targets on the basis of a report of the Commission. In its report the Commission shall take into account the development of the material composition of vehicles and any other relevant environmental aspects related to vehicles.

Following the above mandate, the Commission has prepared this report. An essential element of the elaboration of this report was the assessment of the environmental, economic and social impacts of the targets and alternative options. The Executive Summary of the Impact Assessment Report, which outlines the implications of a possible modification of the targets set in the Directive, is contained in the Annex to this Communication.

## 2. ASSESSMENT PROCESS

The impact assessment included the analysis of available information from a study on the costs and benefits of the ELV Directive carried out for the Commission by an external consultant, formal and informal stakeholder consultation in a multi-stakeholder working group and an electronic consultation on the final report of the study, meetings with the experts of the Member States and in-house scenario-building of economic and environmental impacts of options.

The assessment was complicated by the fact that the ELV Directive is at an early stage of implementation by the Member States and information as to the currently attained recycling and recovery levels in the Member States is limited. The first reports on the targets are due by the Member States in 2008 and will contain information for 2006.

However, information available to the Commission has allowed a fair evaluation of the current situation and the future prospects in vehicle recovery and recycling and to conclude on whether or not the targets set by the ELV Directive for 2015 should be amended<sup>1</sup>.

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<sup>1</sup> The average weight of vehicles covered by the ELV Directive is increasing, and the data as to the actual ELV weight differ. An average weight of a 2015 ELV used in this Report is 1,025 kg. However, weighted averages for all car manufacturers show higher weight of ELVs of approximately 1,280 kg by 2019. If this higher weight was used, the direction of impacts would be the same, but the magnitude of impacts would be greater. A difference resulting from weight assumption is described in detail in the Impact Assessment and its Annexes.

### 3. OUTCOMES OF THE ASSESSMENT

The assessment shows that the targets set by the ELV Directive generate both substantial environmental and economic benefits and that repealing or reducing the targets would reduce these benefits. The magnitude of the benefits generated is intimately linked to eco-innovation, without which the spreading of existing technology will generate low economic and environmental benefits whilst eco-innovation would lead to significantly amplified benefits.

These benefits come from increasing the fraction of the materials (mainly certain plastics) that are recycled and recovered and reducing the fraction of landfilled end-of-life vehicles.

#### *Environmental Impacts of the Targets*

For any set of targets, metals will continue to be recycled at high levels due to the high value of metal. However, higher recycling targets would make it possible to increase the recycling of those metals which are currently lost in landfills due to poor separation of shredder residue.

Recycling and recovery of plastics from shredder residue will be needed to meet the existing 2015 targets. The environmental performance of recycling and recovery of different plastics from shredder residue is also the key determinant of the environmental impacts of recycling and recovery targets.

Based on a scenario that the existing 2015 targets drive technological progress to allow greater separation of plastics from shredder residue<sup>2</sup>, the 2015 targets can bring about several environmental benefits, including estimated savings between 280,000 and 980,000 tonnes of CO<sub>2</sub> equivalent a year, reductions in photochemical oxidation, air acidification, water pollution and eutrophication and reductions in waste generated. The actual environmental benefit will, however, depend on the technological development that the targets stimulate.

Overall, the environmental impacts of any set of decreased targets will be worse than those of the current 2015 targets. The ELV Directive has triggered technological development in the area of ELV treatment, but new techniques have not yet diffused across the European recycling market. Continued development of treatment technologies to recycle some types of plastics would bring substantial environmental benefits from recycling those plastics. Further support for the technological development is still necessary to overcome market failures, and changing the instruments or lowering the targets of the ELV Directive is likely to slow down or even stop this development, also endangering planning reliability.

#### *Economic Impacts of the Targets*

The eventual economic impacts of different targets will depend on the state of technological development in 2015. With the current targets, under best case scenario the net added value from the treatment of an average ELV would be between €120 and €90, with a total maximum value of the ELV treatment process for the estimated number of ELVs arising in 2015 of approx. €1.6 bn annually. Without any technological development, there would still be an economic gain of €55 to €80 per ELV.

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<sup>2</sup> An example of a PP/EPDM bumper was used, chosen because polypropylene is likely to be the polymer most recycled, and which has environmental impacts broadly representative of the impacts of most of the other polymers likely to be recycled.

The loss of economic benefit to the ELV treatment process from a 5% lowering of the 85% recycling target would be a maximum of €1.1bn a year.

A recovery target lower than current 95% will have impacts on the economic costs only if 2015 landfill prices are below €80 and €100 per tonne. Otherwise, a reduction in the recovery target would not make any difference to treatment costs.

Overall, the ELV treatment under the 85% recycling and 95% recovery targets has substantial net economic benefits compared to lower targets. In addition, higher targets can prompt the development and commercialisation of already existing and new treatment technologies which would provide greater resource efficiency by facilitating the recycling of increased shares of waste plastics, and production of quality secondary materials at lower prices than virgin materials. This will reduce the costs of the EU economy in terms of energy costs (plastics are substituted for fuels or electricity generation) and of plastics processing feedstock. Even with low innovation, the best technologies currently available offer cost advantages over the use of current practices.

### ***Other options discarded at an early stage***

Some stakeholders proposed options such as repealing the recycling target or replacing the targets by a full or partial landfill ban.

These options were not assessed in depth as the assessment of the 2015 targets currently established in the Directive was sufficient to indicate that removal of the targets or an introduction of a landfill ban would significantly reduce economic and environmental benefits, notably due to the loss of the economic and environmental benefits of recycling. In addition, such options would likely go beyond the task as defined in the Directive, leading to its fundamental review. That process could easily jeopardize the current progress in innovation in waste management.

## **4. MAIN ISSUE**

The main driver for amplifying the economic and environmental benefits of increased recycling and recovery of end-of-life vehicles is eco-innovation.

There is evidence that the ELV Directive has stimulated technological development in ELV treatment; however, the new waste treatment techniques have not yet been sufficiently commercialised in the European recycling market. Innovation in technological development of advanced technologies for shredder residue treatment is held back by several market failures, some common to industrial innovation as a whole, some relating to eco-innovation, and some specific to the post-shredder and plastics recyclates markets, enhanced by uncertainty about future ELV targets.

Maintaining the targets currently set in the Directive for the year 2015 could remedy some of these market failures and bring about relatively important environmental and economic benefits. The level of the targets will determine the pace of the technological progress in the ELV treatment sector. As the 85% recycling target would create certain markets for advanced post-shredder and polymer recycling technologies, it would substantially increase R&D investment in new technologies. Seven years for commercialisation and further R&D and two years for commercial installation of the technologies are available to meet the targets by 2015.

R&D investment is very likely to result in further commercial development of the existing or the development of new treatment technologies. Even without further technology development, the 85% recycling and 95% recovery targets would boost the diffusion of the existing most efficient technologies.

Stimulation of R&D in the waste treatment area can make the EU the world leader in a technology market with great potential and strengthen its position as technology exporter. The resource from ELV waste is growing across the world and many countries are developing recycling policies for ELVs. Moreover, the same technologies can be used to treat other waste streams, such as waste electronics. Technologies that offer products from these waste streams that can substitute currently used virgin materials at lower prices have a vast global potential.

## 5. CONCLUSIONS

The targets set by the ELV Directive for 2015 can generate substantial environmental and economic benefits. Repealing or reducing these targets would reduce both types of benefits.

Whilst any estimation looking 9 years into the future must involve a degree of uncertainty, the Commission concludes that the 85% reuse/recycling and 95% reuse/recovery targets for 2015 are optimal both in terms of environmental and economic performance.

These targets should remain stable in order to guarantee investment security into more cost-efficient waste treatment technologies. Therefore, the Commission shall not propose revising the targets.

However, account should be taken of the central finding that the magnitude of the environmental and economic benefits generated will be intimately linked to the pace of eco-innovation. Importantly, the dissipation of uncertainty concerning the maintaining of targets set by the Directive for 2015 will in itself reduce the importance of the observed market imperfections and barriers to eco-innovation. To foster eco-innovation in this field and to further the promotion and uptake of advanced technologies, the Commission will:

- Co-fund research initiatives under the European Regional Development Fund and Cohesion Fund as well as fund integrative research through the upcoming 7th Research Framework Programme;
- Develop projects and initiatives under the Competitiveness and Innovation Framework programme;
- Pro-actively promote innovative shredder technologies and plastic recycling.

The Commission will report back on the implementation of the ELV Directive in the Member States in 2009. This report will, *inter alia*, evaluate the need to address the issue of non-harmonised implementation of the Directive. In particular, it shall evaluate the implementation costs and the movement of goods between Member States and assess whether certain provisions of the Directive should come under Article 95 of the Treaty. The report will also assess the progress of eco-innovation and will take into account related developments such as the outcome of the current review of the Waste Framework Directive and the outcome of the CARS 21 project.