

## **Recyclability of M1/N1 vehicles Development of a UN Regulation**

### 1. Background for Europe

In Europe during the 1990s the number of end-of life vehicles was increasing and several European member states established national legislation to regulate the environmental friendly treatment of these vehicles.

The European Commission decided to lift this topic from national to European level and in the year 2000 the European Directive 2000/53/EC on end-of life vehicles of categories M1 and N1 was published<sup>1</sup>.

This Directive for example regulates the establishment of take-back systems and minimum requirements for treatment facilities. It also introduced recycling- and recovery-rates, which have to be achieved by the member states when ELV's are actually recycled at the end of their life.

In addition 2000/53/EC requires an amendment of directive 70/156/EC, "so that M1/N1 vehicles type-approved in accordance with that Directive [...] are re-usable, and/or recyclable to a minimum of 85 % by weight per vehicle and are re-usable and/or recoverable to a minimum of 95 % by weight per vehicle".

This requirement led to Directive 2005/64/EC on the type approval of motor-vehicles with regard to their reusability, recyclability and recoverability<sup>2</sup>. The technical requirements laid down in this directive – the reusability, recyclability and recoverability of a vehicle type – are evaluated in a virtual process on the basis of the ISO-standard ISO 22628<sup>3</sup>.

### 2. Globalization trends in this area

In parallel to the European legislative process also Japan introduced similar legislation<sup>4</sup>. In the following years further Asian countries have introduced ELV-legislation or started political and technical discussions on this issue. Recently China, India and Russia have started working on such regulations and also Canada, Mexico and Brazil are now looking into this issue.

### 3. Proposal

Whereas some aspects of ELV-recycling – for example the minimum requirements for dismantling companies – depend on the regional or even local situation, all those elements which deal with the design of the vehicle

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<sup>1</sup> Directive 2000/53/EC of the European Parliament and the Council of 18 September 2000 on end-of life vehicles.

<sup>2</sup> Directive 2005/64/EC of the European Parliament and the Council of 26 October 2005 on the type-approval of motor vehicles with regard to their reusability, recyclability and recoverability and amending Council Directive 70/156/EEC.

<sup>3</sup> ISO 22628, First edition 2002-02-15, Road vehicles – Recyclability and recoverability – Calculation method.

<sup>4</sup> The Act on Recycling etc. of End- of-Life Vehicles (The Act No. 87 of July 12, 2002)

should be globally harmonized. This counts especially for the requirements laid down in EU Directive 2005/64/EC for the type approval recyclability.

As the calculation of the potential mass fraction of a vehicle which can be recycled (= recyclability) and/or can be recovered (=recoverability) is defined in ISO 22628, the core method has already been harmonized on a global level via the ISO standardization process. Other characteristics of this regulation are the potential use of virtual material data to calculate the vehicle recyclability/recoverability and processed based audits to verify compliance to material and substance related requirements.

The current development of an international Whole Vehicle Type Approval (WVTA) system under the UNECE 58 Agreement will be based on the European Type Approval regulations. In line with this process it is appropriate to harmonize also the relevant vehicle requirements out of the Directive 2005/64/EC by shifting this on an ECE-level. The Working Party on Pollution and Energy (GRPE) might be the right group to deal with this item.

Conclusion:

A formal proposal for a UN Regulation on the type-approval of motor vehicles of categories M1/N1 with regard to their reusability, recyclability and recoverability will be made available for the March 2012 WP 29 meeting.

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