

OICA position on Recyclability within the EFV concept

The current proposal for the development of an EFV-concept under Indian leadership is based on four independent parameters: CO₂/GHG emissions, regulated pollutants, noise and recyclability.

As per discussion of 7th and 8th EFV Informal Group meeting held in Geneva there was a commitment that the parameter recyclability needs to be further explored (see meeting minutes No. EFV-07-07-Rev1). Particularly, when looking at the environmental relevance, the parameter recyclability is in the end not the most important item and often more an infrastructural question. Therefore OICA recommends to exclude the parameter from the definition of an EFV.

This document should serve as a background paper for the further discussion by providing additional information on the strategy of the automotive industry for end-of-life vehicle treatment and explaining OICA's arguments on that specific topic.

1: Process and Strategy on ELV-Recovery:

ELV recovery is a business which has a long history starting in the 20ies of the last century. In general the process chain can be described as followed:

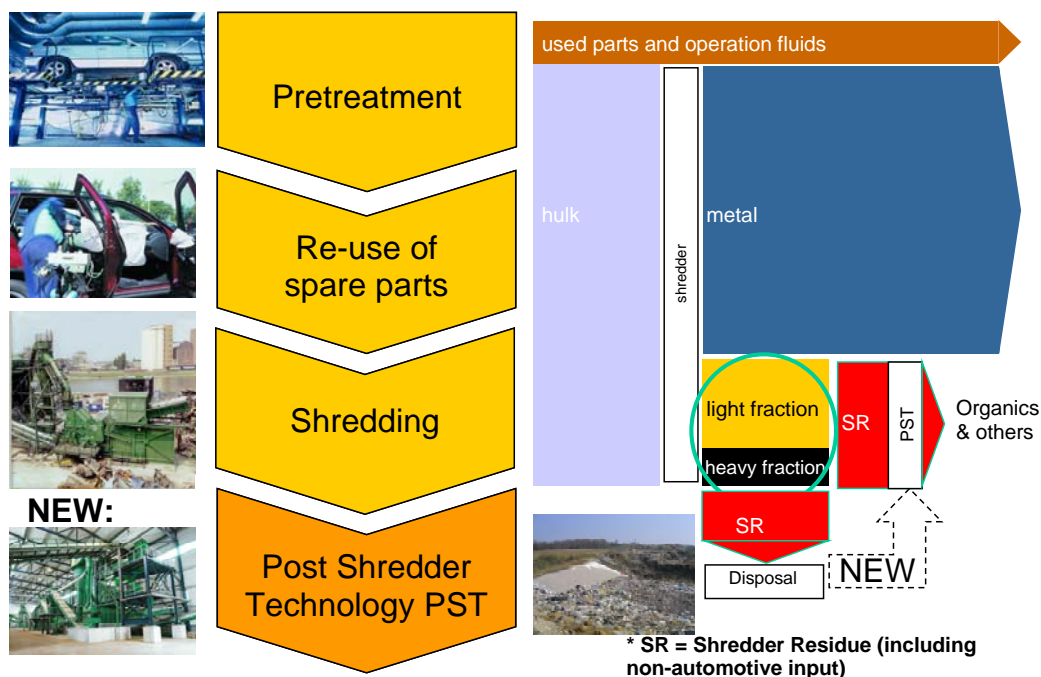
After arrival of the ELVs at authorized treatment facilities the pretreatment is done (most environmentally important step is the removal of all fluids, batteries and the neutralization of pyrotechnical devices). However, the core business of the dismantlers is the sale of used spare parts – a very profitable business done without the need for any regulation.

The following step is the shredder, where ELVs are smashed in fist-sized pieces for easy separation of the valuable metallic fraction (due to process and volume reasons together

with other metallic waste streams as e.g. white and brown goods) – again a profitable business. Depending on the national available technology and landfill fees the remaining shredder residue is separated via post-shredder technologies (PST) in marketable fractions for recycling, recovery or disposal (see picture 1).

The national implementation of the ELV process can only be met with an integrated approach. This means that all stakeholders, in particular national authorities, last owners, dismantlers, recycling industry, and car manufacturer have to fulfil their specific tasks:

- Authorities: Licence shredder operators and dismantlers, enforce standards for proper treatment, install deregistration system.
- Last owner: Deliver ELV at take back site, vehicle is complete and free of waste
- Treatment operators: Take back ELV's, ensure environmentally sound treatment
- Car manufacturers: Comply with heavy metal ban, provide dismantling information, set up a market specific take back network



Picture 1: Process and strategy on End of life vehicle recovery

2: OICA's arguments to exclude recyclability from the definition of an EFV concept:

Argument #1: Recycling is not a question of the vehicle design

Automobiles are the most recycled consumer product. By weight, the typical passenger car consists of about 75 percent metals that are 100% recyclable. Another 10% by vehicle weight are reused or recycled during pretreatment and dismantling process. Depending on the available technology in the market the remaining non-metallic content (shredder residue) is separated and partly recycled, recovered or landfilled.

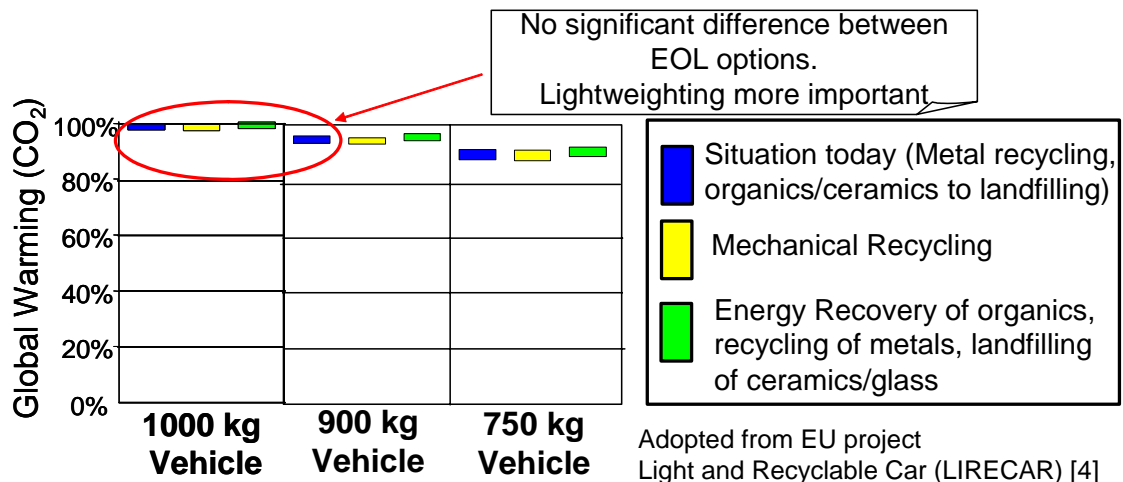
Thus recycling is not so much a question of the vehicle design but of the functioning of the market and the available infrastructure. This is best influenced by the end-of-life economic operators and where necessary the governments (e.g. by closing alternatives landfilling and by ensuring a functioning vehicle de-registration process linked to a proper end-of-life treatment / sales contract).

Argument #2: No environmental difference between End of life options.

In the past, re-use and recycling of products have been seen as a fundamental pre-requisite of a sustainable approach for products. This was thought to apply also to the non-metallic content of vehicles. Without closing the material loops the danger of limiting growth has been seen by some.

A series of independently reviewed and conducted studies have been finalised since that time. From a purely environmental perspective, when only focusing on the end-of-life phase there is no evidence that recycling is environmentally favorable compared to other ELV treatment options for plastic waste/shredder residue.

From a purely environmental perspective - when taking the whole vehicles life cycle into account - the end-of-life phase of certain kind of non-metals does not play any significant role in terms of potential environmental impacts or recycling credits, i.e. all these efforts result in no remarkable improvement for the environment.



Picture 2: Environmental impacts of different EOL strategies

Argument # 3 Recycling-driven changes to the product design can even jeopardize the overall environmental vehicle performance

The intensified use of lightweight construction materials such as light alloys (e.g. aluminum, magnesium) is indispensable for reaching the goals of CO₂ reduction. Lightweight construction concepts are however disadvantaged by fixed recycling quotas.

Example: Assumed a vehicle with a total weight of 1000 kg consists to 75% of metals and to 25% of operating fluids and nonmetals. In order to achieve the goal of 85% recycling quota by weight, additionally 100 kg of nonmetals must be reused or recycled. An appropriate lightweight construction concept from 500 kg metals with the same 250 kg of nonmetals would only achieve a material ratio of 80% by weight. However, when looking on the aspect of CO₂ reduction, the fictitious lightweight concept would save appr. 18g CO₂/km.
