

Conclusions from S_LIFE Final Report.

Consumer goods are the biggest material resource in Europe at the moment. Our underground resources are insufficient to satisfy the local production and consumption needs. Other countries have also understood and anticipated this for their own soil and are already trying to exploit our waste as a resource for themselves. We cannot let this value escape from our hands.

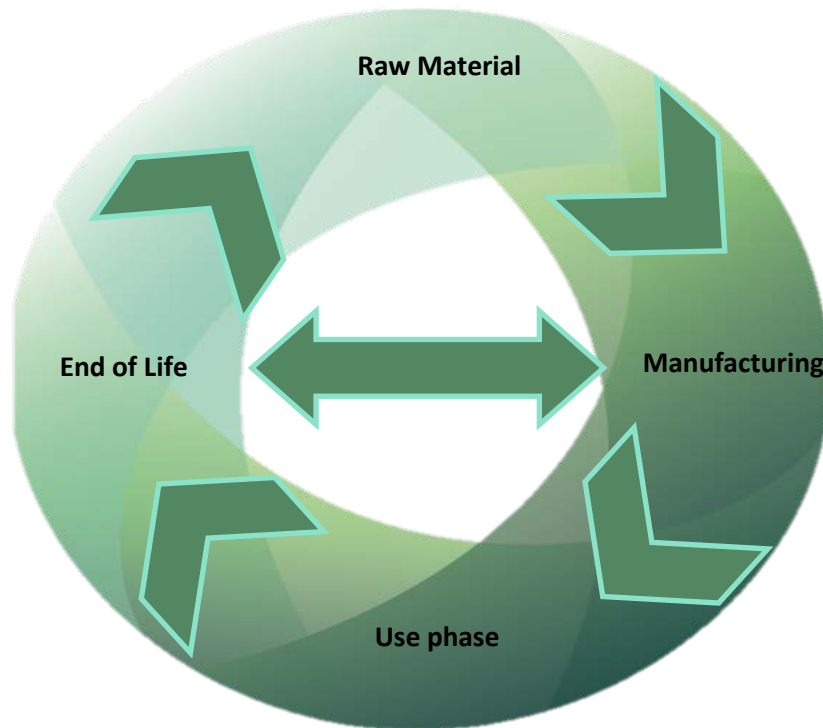
In a Region of the world where 16 million cars are being manufactured each year and about 280 million are being used, we cannot go ignoring the challenges that arise from the usage of resources that automotive represents. Of course, a passenger car has a longer life time than most of the goods that turn to waste every year. However, it is the most complex object that any of us will personally own. Our vehicles are made of countless different materials, and with few natural resources on (or under) the European soil, we face the risk of letting ourselves become more and more dependent from other countries or continents. So can we let over 6 million tons of material go to waste?

Phases of the Life Cycle

Lightweight vehicles, along with price competition among manufacturers and tier suppliers, already drive the innovation in terms of material design and material savings. Once considered as a sign of lower range, poor quality, and cheapness, the use of recycled materials has started to become a well perceived feature. It now bares an environmentally friendly image and bio based materials are following the same path. This enthusiasm pulls the use of these materials in just about all consumer goods, and the automotive industry is neither the last nor the least of them.

It therefore seems that, in the **Manufacturing phase**, only the design for recycling remains an area for significant improvement. Just as design for maintenance was a topic in the 90's, design for recycling is one of the challenges that the industry will have to embrace in the 2010's and it represents a considerable investment of time and efforts. But it is not the only one: fuel consumption, security, comfort and connectivity of the vehicle are also very hot topics at the moment, and unlike the first one, they impact each brand's market positioning. So yes, design for recycling is being looked into, but can it be the hottest topic of the decade?

During the **Use phase** of the automotive life cycle, parts and fluids are regularly replaced from your vehicle. Fluids and Tires are generally being collected and treated in Europe, however other parts, although they sometimes are subject to clear sorting and collection rules, are not always treated correctly. Utilisation of parts issued from re-use or re-manufacturing can still be strengthened. With the costs of repairs constantly moving up as the financial capacities of the owners are decreasing, it is likely that these practises will spread. Several National and European organisations are already pursuing this aim. Two factors will clearly contribute to the development and democratisation of these practises:



ICTs¹ which will give accessibility and flexibility, and the support of the insurance sector which alone is in a position to massively inform their customers of the available benefits.

The **End of Life** phase is the one which is evolving the most: it is a dynamic sector for which a lot of rules have recently changed and is in the process of adapting to its new role. In

fact, the development of this particular know-how seems to be key: recovering parts and materials in the most efficient manner. The first equilibrium to be found is the one between dismantling and shredding. It is this very competence that will allow us establishing an economically steady balance between several ways of turning ELVS into new resources:

1. Dismantling:
 - a. part re-use
 - b. part remanufacturing
 - c. material sorting & recycling
2. Shredding
 - a. material sorting & recycling
 - b. energy recovery
 - c. minimum landfill

Dismantle too much and your costs will be too high, shred too early and you may be destroying potentially valuable items. Finding the right balance is the only way to ensure the sustainability of the industry involved in the automotive life cycle. Of course, it will need to be constantly readjusted due to scientific and technological progress such as development of sorting methods, new recycling processes or new applications.

Polymer example: Efficiently separating the numerous grades of polymers present in an ELV² at a reasonable cost is an objective that is still to be reached.

Automotive Shredding Residue example: After the shredding and sorting process, Residues remain which are composed of tiny pieces of just about anything (copper to fibres to rubber and plastics) This is generally the fraction nobody wants, yet there are ways to either separate it further or use it as it is.

¹ Information and Communication Technologies

² End of Life Vehicle

But there is no secret to it: if we want such cases to be solved, it must be a sound investment with market-potential.

Closing the loop

The collaboration between the end of life sector, still artisanal in most of cases, and the European automotive giants, needs to be reinforced. To date, direct collaboration is still difficult. However, bringing them together would break the practical barriers. They need to understand each other as they are set to become “end-customers” of one another to a certain extent.

By developing a sustainable secondary materials value chain, not only the automotive industry, but the European industry as a whole will benefit from two complementary effects:

- High standard regular supply of materials drastically decreasing the effects of transport costs and potential geo-political risks. This will strengthen the industry sector which tends to weaken in some countries.
- Developing new supply chains on the European soil which cannot be relocated and generates value

A huge potential remains to be uncovered here, the work has already started but there is still so much to be done. We have to keep in mind that, to make things happen, it is mandatory to have profitable economics. We bear in our hand a unique opportunity to recreate an economic and industrial dynamic by relocating well needed added value and well needed jobs within our borders.

Final Conference, 6th November 2014, Brussels

http://www.s-life-project.eu/final_conference

