FORD OF LAND ROVER ON CAR DESIGN FOR RECYCLING

THE END OF LIFE VEHICLE (ELV) DIRECTIVES

Peter Ford, the Product Environmental Manager at Land Rover, gave a fascinating talk at a recent meeting of the Telford Polymer Association. His talk covered the rapidly changing European directives relating to end of life vehicles and the impact on car design.

The Vehicle Directives on ELV's is part of the European Commission's strategy on the management of waste. Other Directives cover tyres, construction materials, packaging, electrical products and healthcare waste streams. Vehicle disposal legislation must be implemented by all EU member states by October 2003. Of particular interest to car designers is how to handle the increasing use of plastics in cars.

The average family saloon has 10% of its weight as plastics; the majority of the rest is metal. For many years most end-of-life vehicles have been sent to a dismantler/scrap yard where engines and other easily removed parts are removed for re-sale or recovery of aluminium, copper alloys and iron/steel. The remaining car body is then sent to a shredder, a giant hammer mill that turned the whole car body into a mixture of metal fragments and 'fluff'. The 'fluff' containing the plastic content of the car is contaminated in the fragmenting process and thus recovery of the plastics is virtually impossible and certainly uneconomic. The only viable way of recovering plastics materials from cars is to remove parts at the dismantling stage.

Everything including the kitchen sink! This shows the diversity of the scrap pile that the End of Life Vehicles join for recycling aimed at the recovery of metals. Large recoverable plastic parts and pollutants having been removed prior to this stage.

This waste stream is after removal of metals and higher density "dirt". The Fluff contains amongst others; shredded PU Foam, plastics, rubber, fabrics , wood and wood fibre products. This has a good califoric value and, subject to stringent environmental controls, may be used on its own, or in admixture with other fuels, to recover the energy in cement kilns or incinerators providing steam for heating or electricity generation.

Ultimately a 'certificate of destruction' will be required to prove that the vehicle has been disposed on in line with the directives. The car manufacturer

will incur a significant part of cost free take back on cars built from July 2002 and on all cars scrapped from January 2007. The cost to car manufacturers such as Ford in Europe could be as much as $2 billion!

Recycling quotas will be applied for the re-use of parts and the recovery of materials from those not suitable for re-use. By 2003 all new parts over 50g in weight must be marked with material identification codes. All new cars designed from January 2005 must have a minimum 95% re-use or recovery of materials. A minimum of 85% must be in place for all cars being scrapped from January 2006 with a maximum 5% energy recovery. This will rise to 95% in 2015 with a maximum 10% energy recovery.

This places major demands on car designers and parts suppliers who must use an increasing quantity of recycled materials in new parts to meet the directives. Dismantling information must be available within six months of a car being put on the market. All of this is likely to lead to radical changes to car design and the scrap recovery industries.

For further information on the TPA contact the membership secretary, Mark Edwards on 01939 291677 or see www.the-tpa.org.uk or The Institute of Vehicle Engineers www.ivehe.org