



## **The Society of Motor Manufacturers and Traders Limited**

### **Evidence on Automotive Waste and ELV**

1. The Society of Motor Manufacturers and Traders (SMMT) is the leading trade association for the UK automotive industry, providing expert advice and information to its members as well as to external organisations. It represents more than 500 member companies ranging from vehicle manufacturers, component and material suppliers to power-train providers and design engineers. The motor industry is a crucial sector of the UK economy, generating a manufacturing turnover of £47 billion, contributing well over 10 per cent of the UK's total exports and supporting around 850,000 jobs.
2. SMMT members are regulated in many areas that require them to be resource efficient such as IPPC, packaging waste and have producer responsibility for End of Life Vehicles which requires them to meet demanding material recovery targets. SMMT members are also acutely aware of the need to reduce CO<sub>2</sub> emissions from all sources, and therefore seek to be efficient in manufacturing, operation and recovery of their products.

### **Better design and the use of materials**

*What role can better design and materials play in minimising the creation of waste? Are there any barriers to how knowledge in this area can best be translated and applied?*

The automotive product development activity establishes the key features required for a new vehicle programme. This could include marketing clinics to gauge consumer opinion and benchmarking current market leaders in the segment. An important consideration at this stage is the production cost and weight of the final vehicle. It follows that every component design will undergo an evaluation which will include manufacturing and material efficiency before sign off for prototype production. Computer aided design packages have given engineers the capability to evaluate component performance on screen and optimise material usage. The End of Life Vehicle Directive required manufacturers to eliminate certain heavy metals from their products; this required the component supply industry to inform their vehicle manufacturer clients what materials and quantities were used. This led to the formation of The International Materials Database System IMDS widely used today. ELV legislation also required the creation of a new ISO standard 22628 Road Vehicles-Recyclability and Recoverability-Calculation method. This was followed by another EU Directive for Type Approval for Reusability, Recoverability and Recyclability. This Directive requires that from 15 December

2008 Manufacturers must demonstrate using the ISO standard that a new vehicle can be reused or recycled to 85 per cent within an overall 95 per cent recovery target. Manufacturers have developed lists of proven recovery processes to satisfy the heavily regulated material streams generated at end of life. This demonstrates that good design, avoidance of waste and recovery at end of life are important considerations in the development phase.

*What factors influence the use of materials? In what way do considerations of sustainability feature in the selection of most commonly used materials?*

The modern motor vehicle is required to meet many legislative requirements, crash protection, material recovery, and the need to reduce weight to achieve CO<sub>2</sub> targets. These requirements often conflict with each other. Looking at the whole life cycle of a vehicle it is evident that the use phase in terms of CO<sub>2</sub> has the most significant environmental impact at around 85 per cent. Production of the vehicle uses around 10 per cent and end of life 5 per cent. So materials that offer weight saving offer the most environmental benefit. This has led to an increase in the use of light alloys for some applications and total aluminium body structures in others. High strength steels are used in place of mild steel in some areas to gain a weight reduction. Metals are highly sustainable and readily recycled back into new product. Between 10 and 12 per cent by weight of a car is plastic of some description. All manufacturers provide dismantling information for all of their products through the International Dismantling Information System IDIS this allows a dismantler to identify what type of plastic a component is made of and how to remove it. The logistics and economics of this approach are variable. The Plastic Reprocessing Validation Exercise PROVE demonstrated that polypropylene could be extracted from shredder residue and processed with virgin material into a Nissan air cleaner unit. This post shredder recovery of material is the most efficient and cost effective method of reaching recovery targets.

*To what extent do product designers and engineers take into account the availability and the end of life impacts of raw materials?*

As mentioned above Type Approval requires manufacturers to demonstrate 95 per cent recovery at end of life. Lack of availability of materials would impact on cost and would promote the search for more sustainable alternatives. Manufacturers are also concerned that robust processes exist to reach the high recovery targets. One example developed by Volkswagen the VW-Sicon process is now successfully installed in several European countries. The proposed new Waste Framework Directive changes the definition of recycling and could affect the viability of this new technology. Only a broad and consistent recycling definition as proposed by the EU Commission will create legal certainty and ensure the continued development and investment in innovative and eco-efficient recycling plants.

*What impact does the development of new materials have on design? How much interaction is there between material scientists and designers?*

The automotive industry requires materials and components to undergo accelerated durability testing before incorporating new materials into production. Our Research and Development centres in collaboration with the supply chain are

continuously evaluating materials and processes to meet improved product specification in areas of weight, performance, NVH, safety, durability, assembly and disassembly. Some of our R&D facilities have access to patent facilities on site.

*Can better designed products offset the increase in consumption?*

Vehicles are more robust and durable than ever before, with the effect that average vehicle life is increasing. Consumption remains high because consumers judge that the alternative options for mobility and transport of goods as not viable or less attractive.

*Are there any other gaps in knowledge and how are they being addressed?*

The automotive industry operates on a global scale and there are many alliances between companies on power train or body components. Very often they have a common supply base. Companies work in close co-operation with academia and chartered institutes. There is in the UK Government sponsored Knowledge Transfer Networks, including SMMT Foresight Vehicle programme, a collaboration between industry, academia and Government. More than 100 research projects have benefited.

## **Business framework**

*Does the current policy, regulatory and legal framework support and incentivise the development of better, more sustainable products and processes? How is the framework communicated to businesses and what is the level of awareness and understanding among businesses?*

Existing and new proposed EU legislation is not always coherent and is sometimes contradictory. New legislation should be based on good impact assessments with a life cycle perspective. The ELV Directive provided in article 7.2 that by the end of 2005 there would be a review of the targets set for 2015 of 85 per cent reuse and recycling within an overall 95 per cent recovery target. A multi stakeholder group provided a report that gave several options but that concluded that targets would not be as effective in reducing waste from vehicles as restricting landfill. This would stimulate investment in innovative post shredder technologies.

*How central is sustainable design to business thinking? What initiatives are in place to encourage this and are they meeting business needs?*

Vehicle Manufactures all have environmental policies that promote sustainable thinking from the top of the organisation. At the detailed level there are specific internal processes that ensure the consideration of sustainability in design and other business areas.

## **Government policy**

*What is and should be the role of Government in addressing the issue of waste reduction?*

Government as the regulator and its agencies as enforcers should first ensure that waste laws are practical in application and simple to understand. Industry views should be listened to and UK competitiveness protected. Like manufacturers good design, legislation should be tested for unintended consequences. Once laws are passed they must be correctly enforced, those who comply often have to invest heavily whilst those who do not comply escape both investment and too often enforcement.

Looking at ELV enforcement Government agencies are failing to enforce correctly in the ELV recovery network and non compliant businesses are making the compliant sector un competitive. DVLA have failed to implement a foolproof Certificate of Destruction system, an essential component of ELV legislation. For 2006 this led to only recording around 600,000 vehicles as depolluted and recycled against an expected 2,000,000. For 2007 this has reached around 1,000,000 but still represents less than 50 per cent of the forecast for scrapped vehicles.

*How does Government policy link up with European strategies and action plans?*

Vehicle manufacturers must have consistent harmonised legislation in all member states. It is impossible to design and build vehicles for specific national material requirements. It is also important that duplication of legislation is avoided, ELV, WEEE, and the batteries directive all require collection systems and recycling targets to be met. It is essential that there is no product overlap and that vehicle manufacturers meet their obligations through the ELV regulations.

## **Consumer behaviour**

*How can better product design be used to effect a change in consumption patterns and behaviour?*

CO<sub>2</sub> emissions from the UK passenger car fleet are now below 1990 levels, linked to a 13 per cent reduction in average new car CO<sub>2</sub> emissions in the last ten years. This has been achieved partly by improved design and technology and partly by market shift. As smaller cars have become as highly specified as larger cars the option to down size is more attractive. Diesel engines are quieter and more efficient as well as meeting demanding regulated emission standards. Government is hindering further CO<sub>2</sub> progress by not encouraging dieselisation. In 1997 there were no cars below 120gm/km of CO<sub>2</sub> now that is 5.4 per cent under 120 and 23.5 per cent under 140.

*What role do marketing strategies play in influencing more sustainable design?*

Evidence from the King report, LowCVP Car buyer research report and DfT 2004 found that the most important factors in car purchase are, in order price, size, reliability, comfort, safety, running costs, fuel consumption, appearance. Least important are Environment and emissions. If the consumer was buying the lowest emitter in any VM model range then new car CO<sub>2</sub> emissions would be 139gm/km.(i.e.16 per cent lower than today) The consumer wants choice and diversity, manufactures have to deliver that and build in environmental performance as standard.

*The Committee would also be interested to hear about any other issues not already covered by this call for evidence that are relevant to the scope of the inquiry.*

The SMMT 8<sup>th</sup> report “Towards Sustainability” examines production, consumption and recovery of vehicles and examines CO<sub>2</sub> emitted through the vehicle life cycle. Based on LIRECAR 2004 study less than 5 per cent of a vehicle’s total life energy is consumed in recovery/disposal. This 5 per cent can be mitigated by efficient post shredder recovery operations.

#### *Recovery and Disposal*

SMMT is of the opinion that only waste recovery that is environmentally sound should be undertaken. The energy consumed and consequent CO<sub>2</sub> emissions produced can only be justified where worthwhile substitution or efficiency levels are reached.

#### *End of Waste*

SMMT consider that the reclassification of waste as a secondary raw material once it reaches a standardised specification is correct. This has been achieved with the PROVE project for recycled plastics. Whether a market exists or not does not affect the product, and should not be a criterion for deciding whether it is still waste or secondary raw material, markets for recycled materials have to compete economically with virgin material. The incentive to recycle efficiently to reduce cost and the fluctuation of virgin material price will impact markets differently over time.

SMMT would prefer that existing engineering standard processes and bodies determine the quality criteria required rather than use the comitology procedure.