

Foresight Summary For Magnesium 2005

Business Drivers	Issues	Technology & Innovation need
Market Competitiveness	Cost of conversion to product Corrosion resistance	Optimised casting processes Wrought alloys with faster extrudability, easier formability, etc. High volume production technique development. More corrosion resistant alloys. Techniques to eliminate galvanic corrosion. Low cost surface treatment for protection and aesthetics
Superior product characteristics/Brand differentiation	Application of Mg for lightest weight solutions Increased knowledge base for cost effective product design in Mg Light weighting in automotive Light weighting in aerospace Improved medical devices Mg in consumer products/electronics	Improve public awareness and perceptions of Mg. Education of potential users Lower cost alloys with improved properties and performance. Application of state of the art forming processes. Material and performance data for effective modelling and design of components. High temperature alloys for transmissions. Alloys with better crash deformation characteristics. Improved joining techniques. Improved components by rheoforming/casting. Lower cost corrosion resistant alloys. Demonstrators for use in airframes/interiors. Exploit light weight and biocompatibility to develop new implant devices Exploit EMR shielding and damping advantages. Cost effective decorative coatings.
Material sustainability	Recycleability Use of hydrogen as a non-polluting transport energy source	Identification, segregation of EOL vehicle scrap. Efficient recycling of EOL scrap to high purity standard. Special Mg alloys to utilise high hydrogen storage capacity in portable storage systems
Environmental concerns	Minimising automotive engine pollution. Reduced energy consumption Elimination of greenhouse gas emissions in manufacturing processes	Use of lightweight Mg engine and transmission components. Use of Mg for weight reduction in automotive bodies/chassis. Minimum weight Mg components in road/rail transport bodies. Replacement of CFC, HFC protective gases with cost effective alternatives
Changing Demographics and lifestyles.	Supporting an ageing population Sporting and leisure equipment	Lightweight Mg appliances for elderly and disabled. Lightweight robotic aids. Disseminate relevant material and performance data to manufacturers