

End of Life Vehicles (ELV's)

There are various changes being proposed as regards ELV handling in Australia. With this in mind, here is how things are operating in Korea:

Since 2008 new recycling regulations came into force in Korea, and the country's largest car maker Hyundai Motor Company (HMC) is on target to meet the new rules.

KOREA'S Waste Electrical and Electronic Equipment (WEEE) and End-of-Life Vehicle (ELV) recycling regulations came into force in January this is part of the Hyundai Motor Company group.

"HMC is already meeting its targets under these disposal regulations.

More than 85 per cent of all WEEE and ELVs must be recycled and we are already doing that." says Dr. Yim senior research engineer at Hyundai motor recycling centre, Dr yim works together with a team of research engineers in the advanced technology centre next to the H-KELVRC.

All Korean auto manufacturers must declare the potential recycling rate of all new vehicles on their website. When manufacturing new cars in Korea, we must know the exact content of any material used and have to mark its material identity on parts that weigh more than 100 grams. Then, when the material is ready for disposal/recycling, we already know which processes are required.

"For example, if there is lead in the vehicle paint, this has to be removed before the part is recycled," Dr. Yim said.

As the European Union (EU) is one of HMC's leading export markets, compliance with the Directive 2000/53/EC of the European Parliament on ELVs is essential.

The Korean Act for Resource Recycling of Electrical and Electronic Equipment and Vehicles is modeled on the EU's comparable initiative.

Dr. Yim said the key components of the Korean ELV Legislation include: - Research and Development (R&D) production stage - restriction on the use of hazardous material and new vehicles must be compliant with the annual recyclable rate, currently set at 85 per cent through the improvement of materials and structure.

ELV Recycling Stage - compliant with recycling target rate of 85 per cent and recovery rate of 95 per cent by 2015.

Auto owners can return their ELV, free of charge, to the manufacturer for recycling."The new law applies the three R's - re-use, recycle and recovery - to manufacturing." advised Dr. Yim.

"Re-use means any operation by which component parts of end-of-life vehicles are used for the same purpose for which they were conceived. Recycle is by reprocessing in a production process, the waste materials for the original purpose, or for other purposes, excluding the processing, as a means of generating energy.

Recovery is reprocessing in a production process the waste materials for the original purpose, or for other purposes, and the processing as a means of generating energy."

Dr. Yim explained that the main difference between recycle and recovery is whether the process includes or excludes reprocessing the waste material to generate energy.

Last year HMC recycled 2,116 vehicles at its 10,000 square meter ELV recycling centre. These vehicles came from the company's R&D centre and included passenger, commercial, teaching and test crash cars. The 2008 recycling quota is currently 16 vehicles a day, 352 per month with an estimated 4,224 vehicles to be recycled this year derived mainly from the R&D crash test vehicles.

The treatment operations for de-pollution of ELVs include: Removing batteries and liquefied gas tanks; Neutralizing or removing potential explosive components (e.g. air bags); Taking away and separating the collection/storage of fluids.

Other handling conducted to promote recycling includes the removal of catalysts, like all metal components containing non-ferrous materials, such as copper, magnesium and aluminum. Tires, plastic components (bumpers, dashboard, fluid containers, etc.) and glass taken out of the ELVs, are recycled.

In the disposal/recycling process, workers in the recycling centre manually check each vehicle, treat and remove the airbag, drain any fuels and oils, remove batteries, then dismantle the car and engine. They place recycled auto parts in boxes clearly labeled in both English and Korean.

Before squashing the vehicle in the body press, doors, interior parts, tires, seats and glass are removed for recycling.

More than 85 per cent of the vehicle is recycled, in line with the new laws.

The recycling centre currently works in partnership with around 20 dismantling and shredding companies with plans to expand to 100 companies in coming years.

"We are developing new technology to make the recycling rate higher," she said.

In the Centre's exhibition room, Dr. Yim proudly displays some recycled materials from the ELVs converted for use in new vehicles - auto parts made from crushed metal, sparkling new bumper bars from recycled bumpers and new floor mats made from recycled carpet and head rests.

By Matthew Perfrement,

MTA NSW Auto Parts Recyclers Chairman (Just Japanese Auto Parts, Lansvale)