Study on for vehicle recycling centre

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A technoeconomic feasibility study is nearing closure for a Germany-owned steel-to-steel vehicle centre, which could potentially dismantle 80,000 end-of-life and reuse the entire plastic, rubber and metal material out of which cars are made.

If viable, the Falcon project will be the first such recycling centre in Africa, and may lead to the establishment of other similar centres in areas with high vehicle densities.

University of Pretoria life-cycle engineering chair Alan Brent hopes that the feasibility study will validate the costs of the proposed recycling modules and the dismantling unit.

The dismantling unit, which is at the heart of the project, will provide equipment for dismantling cars — including the safe, environment- friendly removal of fluids, cast iron, and other shredding technologies for separating the different materials for recycling, he says.

Combined, the rubber, plastic, metal and disassembly modules are likely to cost more than R1.5 billion, with additional operating expenses.

The project is intended to take advantage of environment-friendly European Union legislation, which currently insists on a recyclable content of 95% in each car by 2006, and will require that 9% recyclable loads be reached by 2015.

While original equipment manufacturers (OEMs) are not required to create the support industries which can extract material and parts from cars, many OEMs are considering the recycling of their products.

This is in line with the current product stewardship, which states that manufacturers are responsible for a product once it leaves the factory. Hence, South African OEMs are likely to be compulsory of the initiative, as is BMW, for example, which has been testing the project with technical expertise, states Brent.

Preliminary indications are that the project could be profitable and sustainable in South Africa. The chief disadvantage of the location is the lack of a support industry to buy the recycled materials.

However, the most significant advantages are the low cost of labour, which might allow the facility to process imported vehicles, as well as the large potential source of vehicles and the significant number of consumers of reusable and manufactured parts.

Funding is being considered for the project's location in a Rustenburg site, which is also able to be financed, Brent reports.

The funding includes the transfer of the required technologies from Europe and the training of low-skilled labour.

The dismantling project will be housed in a facility of at least 3 000 m², much of which will be used for storage, he says.

However, there will be space to expand the facility to incorporate some of the material-specific recycling and reprocessing manufacturing modules.

It is suggested that these modules will be managed by separate small, medium and micro enterprises.

Some of the OEMs were concerned that the project would result in an expropriation of the secondary parts market, which would compete with parts which they still, describes Brent.

However, discussions continue through with OEMs about creating OEM-compliant and -guaranteed parts, he says, acknowledging that the refurbishing and sales of parts are likely to be important parts of the project's success.

In addition, the entire industry will be serviced by delivering vehicles to the facility.

This will create a need to claim a major automotive components import and export market.

A further advantage is that the scrap industry will not have to store their own vehicles, he says.

The University of Pretoria, with support from the Automotive Industry Development Centre, is collaborating with provincial and local governments who will manage the facility.

The university will be responsible for environmental issues through the Chair of Life Cycle Engineering in the Department of Engineering and Technology Management, and for the co-ordination of the facility layout and other manufacturing issues through the Chair of Automotive Manufacturing in the Department of Industrial and Systems Engineering.

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Brent believes that the facility will be ready to five years of its existence, but telephone is expected to be able to generate its own revenue.

It has been shown in recycling plastic elsewhere that projects of this nature need to be able to process between five and ten vehicles a day.

While Brent believes that the project could be increased significantly, he will be satisfied if the facility can process between 3 000 and 6 000 vehicles a year.

He hopes that this facility will be established by the end of this year, and will be operating efficiently by the middle of next year.

The project is foreseen to be operational by the end of 2023.