AFRICA RISE | Reform for Investment & Sustainable Economies

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Feasibility study for the development of an End-of-Life Vehicle Facility in Mauritius

Africa RISE (Reform for Investment and Sustainable Economies) is a technical assistance facility funded by the European Union and implemented by a consortium led by Landell Mills, with support from Adam Smith Europe, Imani Development and International Economics Consulting. Its aim is to promote business development and improve the investment climate in eastern Africa, southern Africa and the Indian Ocean in support of inclusive and sustainable growth, job creation and decent work.

Introduction

In the summer of 2021, the Solid Waste Management Division of the Ministry of Environment, Solid Waste Management and Climate Change of Mauritius requested the assistance of Africa RISE to conduct a comprehensive technical and economic feasibility study for the establishment, operation and management of an end-of-life vehicle dismantling and parts recycling facility.
The study was also to consider other options for end-of-life vehicles, and assess the changes that might be required in existing legislation and regulations.

The Situation

A survey carried out in January 2018 by the 12 local authorities on the island had revealed that scrap vehicles were dumped on unused land, roadsides and public places. The Ministry of Land Transport and Light Rail reported that several seriously damaged vehicles, commonly known as “total loss”, were finding their way back onto the roads after they had been repaired. This is considered to be a threat to public safety. The absence of any specific legal provision creates the opportunity for unscrupulous businesses to repair dangerously damaged vehicles, which are subsequently put back onto public roads. This represents a potential danger to road users if not properly managed.

Within Mauritius there is an existing formal system for scrap metal dealers and recyclers who export metal. Stakeholder consultations and observation showed that the current system is not efficient. There are two foundries on the island able to produce steel products, and a number of scrap metal dealers who can produce non-ferrous goods. However, there is a preference for the metal dealers to containerise the metal and send the metal abroad.
There is currently no official disposal site or management system for scrap vehicles in Mauritius and the dumping of scrap vehicles provides a danger to public health. Therefore, a sustainable solution to this problem is required, including a specific legal regulation in the Road Traffic Act under the Ministry of Land Transport and Light Rail for total loss vehicles.

Study findings

The study identified several issues with setting up an End-of-Life Vehicle (ELV) facility that will be sustainable:

- **THE SUPPLY OF MATERIAL**
- **THE COST OF TRANSPORT**
- **THE EXISTING SYSTEM OF CLASSIFYING ELVS**
- **THE VALUE OF SCRAP STEEL**
- **THE CURRENT PRACTICE OF ILLEGALLY DUMPING LIQUID OR SOLID WASTE ON LAND OR IN A WATER COURSE (FLY-TIPPING)**

The study has shown that an ELV recycling facility is feasible, sustainable and practical for the next beyond and that it can provide a means to resolve some issues associated with the disposal of solid waste on Mauritius.Three options were considered for the realisation of the ELV facility

1.Multiple Recycling Centres
2.Use of Existing Facilities
3.Dedicated Recycling Centre

The preferred option was option 2 i.e. use of an existing facility.

Environmental Impact

Setting the scene for this feasibility study, as with similar policy investigations by governments around the world, is the European Parliament directive 2000/53/EC on end-of-life vehicles.
Potential environmental impacts of ELVs fall into two main categories – pollution and resource loss. The possible sources of impacts within these categories are:

1.landfilling waste or "flock" from metal shredders;
2.poor environmental practices at auto dismantlers and other ELV treatment facilities;
3.vehicles abandoned in the environment.

ELV environmental impacts

Key Issues	Releases to the Environment	Resource Loss/Waste
• Dumped vehicles	• Releases of fluids, etc., disturbed water flows, pollution, vermin habitat, etc.	• ELVs not entering the recycling stream
• Poor practices at ELV recyclers	• Releases to ground, air and water of ELV fluids, air-conditioning gases, etc	• ELV fluids etc not recycled
• Landfill contamination – fluids etc	• Leaching of potentially polluting fluids etc in shredder flock at landfill sites	• ELV fluids etc not recycled
• Landfill contamination – heavy metals etc	• Potential leaching of heavy metals, PCBs, PVC, etc., which may be contained in landfilled shredder flock	• A small proportion of metals are not recycled through the shredders
• Recycling of components		• Limited reuse of ELV components
• Waste volume and lack of material recycling	• Release of potentially polluting substances • Use of land for waste disposal	• Waste volumes generated by shredder flock • Limited recycling of non-metal portion of ELV materials

A set of minimum requirements could be readily developed to ensure minimal environmental pollution at auto dismantling and recycling facilities. Such requirements could include appropriate removal, storage and disposal of polluting materials, and operational standards that are proposed for the ELV from handling, to bunding and site. The licensing conditions placed upon the proposed shredder facility may also be a useful guide to measure the current practices of auto recyclers.

The study reviewed the laws and proposed a number of legislative and regulatory changes that would be required. Existing legislation is robust and does not require extensive amendment. The adoption of a regulation (a draft of which is contained in the report) setting out the definition of a total loss vehicle is the major gap in the current framework. A more significant issue is the enforcement of the current legislation and regulations.

Legal Framework

Legislation on ELV recycling exists in the EU, Japan, Korea, China, Taiwan and Dubai, but in many countries and regions where automobile ownership is rapidly increasing, recycling systems and policies are not yet established. Developing countries are lagging in the establishment of legislation due to economic and social circumstances, but environmental awareness and depletion of natural resources have driven many of these countries in adapting strategies towards more sustainable management of ELVs.

The European Union "End of Life Vehicles Regulations 2003" requires producers of vehicles to set up collection treatment and disposal systems to make sure that components in vehicles can be recovered, reused and recycled at the end of their life.

Vehicles are now designed to limit the environmental impact at disposal, by reducing the amount of waste created when they are scrapped. This is done through various measures to encourage the recovery, reuse and recycling of metals, plastics and rubber.

Proposals were made on revising the Road Traffic Act of Mauritius to require that owners be made responsible for removing abandoned vehicles and giving authorities the right to remove such vehicles if necessary. There was a need to review road traffic regulations to designate end-of-life vehicles (ELVs) that would be categorised as waste, generally due to age or accident.

Proposals were also made to review the legislation regarding scrap metal dealers to reverse the upward trend in levels of metal theft through stricter regulation of the metal recycling sector and to make it more difficult to dispose of stolen metal.

Conclusions

The headline conclusion of the study is that an ELV recycling facility is feasible, sustainable and practical for the next 20 years beyond in Mauritius.

There are currently sufficient scrap vehicles being stored around the island to make an ELV plant commercially viable.

The existing system of recording and keeping track of vehicles that are not roadworthy needs to be reviewed to ensure that they are correctly handled and, if necessary, disposed of.

Mauritius has a functioning metal recycling infrastructure but in spite of this, most metal currently being collected is being exported directly overseas.

There are a number of small non-ferrous foundries that are not operating due to the cost of compliance with legislation on air.

There are companies already located on the island to support an ELV facility in supplying and disposing of their products and by-products. However, the existing system is not commercially viable as it currently stands.

The introduction of a system of competency and training for motor surveyors and personnel at vehicle testing stations is required as combustion engine technology changes and the uptake of electric and hybrid vehicles increases.

Every aspect of the ELV supply chain requires addressing to ensure the sustainability of the facility and the de-registration of the vehicles that are unroadworthy or declared total loss.

Recommendations

The report recommends that the revised the environmental regulation should clarify key concepts such as the definitions of waste, recovery and disposal. It further recommends that the Government of Mauritius should:

- Strengthen the measures to prevent waste from fly tipping.
- Impose proportionate and dissuasive penalties on perpetrators caught fly tipping where they infringe the provisions of the regulations
- Introduce an approach that takes into account the whole life-cycle of products and materials and not only the waste phase.
- Focus on reducing the environmental impacts of waste generation and waste management.
- Encourage the realisation of the economic value of waste (circular economy) in order to conserve natural resources.

Legislation needs to be updated to include hybrid and electric vehicles in the definition of a motor vehicles (and allow for further expansions of the definition in future).

Note that the consultants proposed a PPP model for the setting up of the end of life vehicle treatment facility. This recommendation was adopted by the government and included in the 2022-2023 Budget.

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For more information about this learning brief and the full study behind this paper, or if you want to learn more about the EU Africa RISE facility, please contact us at info@eu-africa-rise.com.

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