CHAPTER 3

Current challenges and considerations in automobile recycling laws and institutional systems in vehicle recycling

This chapter describes the current challenges and considerations in automobile recycling laws and institutional systems in vehicle recycling in Cambodia, Lao PDR, Indonesia, Malaysia, Myanmar, Philippines, South Korea, Taiwan, Thailand, Viet Nam, and India.

The challenges in the vehicle recycling system in each country, such as illegal dumping, inappropriate processing of wastes, stringent situations of final disposal sites, dismantling technology, safety, efficiency, and recycling rates are briefly presented. The challenges that need to be addressed in the institutional system include improper processing of designated recovery items such as fluorocarbons, airbags, and Automobile Shredder Residues (ASRs); roles, obligations and economic burdens among production officers (manufacturers and importers), related operators, vehicle users and government agencies including local governments; and the presence or absence of environmental regulations such as landfill and incineration bans and heavy metals use bans.

1. Cambodia

All vehicles in Cambodia are required by law to be registered. The Department of Transport, Ministry of Public Works and Transport, is responsible for issuing the vehicle licence, registration certificate, and any authorisation concerning transport. Cambodia does not have an adequate legal system or equipment for the treatment of hazardous wastes. In Cambodia, car trading is mostly done through the unofficial 'grey market' due to the expensive import tax, especially for new cars. This means that the importation of used cars through unofficial routes is far cheaper. Cars imported include accident salvage cars, most of which are imported from Japan. Some report the emission of hazardous wastes from components such as batteries and crankcase oils. Tires, which are also imported as used parts mainly from Japan, generate environmental problems such as waste accumulation and fire hazards, where tires in disposal sites catch fire[1].

[1]Biopolitics International Organisation. http://biopolitics.gr/biowp/wp-content/uploads/2013/04/VOL-V-Phyrun.pdf
http://www.thaiscience.info/Article%20for%20ThaiScience/Article/4/Ts-4%20is%20importing%20second-hand%20products%20a%20good%20thing%20the%20cases%20of%20computers%20and%20tires%20in%20cambodia.pdf

As for challenges, it is difficult to obtain the correct number of ELVs. Using old cars threatens people's safety and the environment.

There is no specific registration scheme for vehicle dismantling facilities and there is difficulty in the effective regulation of the industry. The capacity of formal governmental waste collection/treatment service is insufficient. The gap is filled by the informal sector, that is, the waste pickers. As dismantling is done by the informal sector, the components and scraps are circulated through the informal route. Vehicle dismantling is mainly conducted by small low-technology units with low yield and capacity. Environmental measures such as prohibition on illegal dumping of waste and collection of chlorofluorocarbons (CFCs) and the like are insufficient. Metallic component recycling is done manually. This causes labour safety issues.

The volume of automotive scrap required to promote ELV recycling is insufficient. Used parts are illegally imported from other countries. Imported used parts cause environmental pollution due to the lack of environmental measures from import dealers.

- Rebuilt parts are not popular due to the lack of awareness of parts dealers and their low quality.
- Non-valuable resources are not properly collected and, in some cases, illegally dumped.
- Metallic component recycling is done manually. This causes labour safety issues.

With respect to the downstream recycling and treatment facilities, there is no adequate legal system or equipment for the treatment of hazardous wastes. The emission of hazardous wastes from components, such as batteries, crankcase oils, and tires, causes environmental problems such as waste accumulation and fire hazards where tires in disposal sites catch fire. Due to the lack of processing facilities, CFCs are released into the atmosphere without being properly recovered. Metallic component recycling is done manually. This causes labour safety issues.

2. Lao People's Democratic Republic

In Lao People's Democratic Republic (PDR), only diplomats may import vehicles, and they may do so by obtaining a letter from the Ministry of Foreign Affairs verifying their status and requesting a customs permit to import duty free.

The procedure to import a vehicle for a non-diplomat is time consuming and tedious. Vehicles are subject to duties assessed on the type, age, and engine size of the vehicle and can be as high as 300 percent of the new purchase value of the vehicle.

All types of imported mechanised vehicles that need to be registered and used permanently in Lao PDR are required to have structures in accordance with the technical standards of the production factories, steering wheels on the left hand side, and qualities in accordance with the technical standards issued by the Ministry of Communication, Transport, Post and Construction.

On the other hand, specific regulations are issued to define the conditions and technical standards of vehicle that are authorised to be imported for registration and use in Lao PDR, including the importation of vehicle accessories for assembling, in compliance with the relevant laws and regulations of Lao PDR. (More details can be found in http://www.laotradeportal.gov.la/index.php?r=site/display&id=45).

The Law on Land Transport in Lao PDR distinguishes between vehicles owned by a transport company and those owned and used by individuals and organisations. Different regulations apply according to how a vehicle is classified.

Vehicles used for transport enterprises and specialised transport require the following items:

- Registration as a transport vehicle;
- Valid licence plates;
- Compliance with the technical requirements for transport;
- Relevant insurance (Law on Insurance No. 11/90/PSA dated 18 December 1990, Article 37);
- Payment of annual road usage fees; and
- Technical inspection as required by rules and regulations (Law on Land Transport No. 03-97/NA dated 12 April 1997, Article 16.).

All types of mechanised vehicles of civilians, including heavy machinery, such as bulldozers, excavators, motor graders, compactors, and other heavy machinery, shall be registered and shall have licence plates in accordance with the regulations issued by the Ministry of Communication, Transport, Post and Construction. Only authorised state organisations have the authority to produce and issue driving licences, vehicle registrations, and licence plates[2].

3. Indonesia

There are currently no provisions on automobile recycling and/or the management of ELVs in Indonesia. In addition, the following issues surrounding the waste management sector in general could also indicate potential challenges for vehicle recycling in Indonesia (Chaerul, Tanaka, and Shekdar, 2007):

- lack of national policy and legal framework for municipal solid waste (MSW) management;

[2] References:
http://thailand.nlambassade.org/binaries/content/assets/postenweb/t/thailand/nederlandse-ambassade-in-bangkok/import/landeninformatie/laos/met-de-auto-naar-laos

- low coverage service for waste transportation;
- use of improper waste storage at generation points; and
- lack of appropriate final disposal practices.

In addition to current regulatory deficit on ELV management and challenges surrounding the waste management, the system for the processing of the three designated recovery items (fluorocarbons, airbags, and ASRs) has not been institutionalised so far.

Private vehicle companies in Indonesia implement their own ELV recycling to comply with laws abroad such as the European Union (EU) Directive 2000/53/EC or the Japan Automobile Recycling Law of 2005. These companies practice a take-back scheme, which gives users the option to return their used ELVs upon meeting the following requirements:

- The vehicle must be free from additional waste.
- All key components such as drive systems (engine, transmission, and so on), chassis, body, catalytic converter or electronic control units are in the vehicle.
- The vehicle is or at least it was before storage.
- The registration documents are handed over at the same time.
- In order to deregister old vehicles, a 'disposal certificate' is needed. This certificate proves that the vehicle has been disposed in accordance with the regulations.
- Only certified dismantling facilities, certified and authorised recycling workshops, or collection points, which have been nominated by the manufacturer, are permitted to issue these certificates.

After the old vehicle is returned to that manufacturer, recycling is done as follows:

- As legally required, the vehicle is drained of all fluids such as oil, brake fluid, and the like, which are then recycled.
- All reusable parts as well as recyclable materials are then removed. Recyclable materials such as glass, tires, large plastic parts, and others are processed using separate recycling techniques.
- The rest of the bodywork is shredded and separated into its different components. As far as possible, these are then recovered and reused.
- The structural framework of the automotive industry in Indonesia consists of the following players:
    - Regulators: Ministry of Industry (main), Ministry of Trade, Ministry of Transportation, State Ministry for the Environment, Ministry of Finance, Ministry of Energy and Mineral Resources, and Ministry of Home Affairs

- Financing: Banks and Multi-Finance Companies
- Automotive Industry: Principals, Brand Holding Sole Agents ('ATPMs'), Sole Distributors, and Main Dealers/Dealers
- Automotive Aftermarket: Component/Parts, Maintenance, Insurance
- Customers: Individual Users and Corporations
- Association of Indonesian Automotive Industries ('GAIKINDO').

- Importers/manufacturers: subject to tariffs and taxes, vehicle type approval, registration.
- Users: compliance to road transport regulations, including licences and periodic inspection.
- Government agencies:
  - Directorate General of Land Transport – certification for vehicle type approval.
  - National Police – in charge of vehicle and driver registration/identification.

There is a myriad of regulations and legislations present in Indonesia that are related to or directly govern the environmental management and protection of the country. These can be classified into five categories, namely:

1. General Environmental Legislation – legislation accompanied by implementing regulations governing environmental management in general and covers all sectors such as Law No. 32/2009.
2. Environmental Legislation for waste management – legislation accompanied by implementing regulations governing certain sectors closely related to environmental management such as Law No. 18/2008 for Municipal Solid Waste (MSW).
3. Ratified Environmental Convention – including international treaties such as:
   a. Basel Convention (hazardous wastes);
   b. Convention on Climate Change;
4. Provincial Environmental Legislation; and
5. Local Environmental Legislation.

4. Malaysia

The Government of Malaysia reviewed National Automotive Policy 2014 (NAP 2014) and many solutions to challenges related to ELV recycling were proposed. The gradual introduction of an ELV policy is one of the issues raised in the review. According to the Ministry of International Trade and Industry (MITI) website, at present, 2.7 million passenger

vehicles are 10 years old or older on the road. Compared to other countries, Malaysia presents a very low vehicle scrap rate and a relatively high average vehicle age.

As a first step towards the implementation of a full ELV policy, the NAP review introduced mandatory annual inspections as a requirement for road tax renewal for all vehicles aged 15 years or older. At present, obligatory inspection is imposed only on commercial vehicles. Expanding this obligatory inspection to private vehicles has been discussed several times and is still under discussion among stakeholders in Malaysia.

Safety and environmental concerns from the practice of importing used parts and components without any restrictions or mandatory tests were raised. The NAP review introduced a mechanism to prohibit the importation of used parts and components effective from June 2011. The Malaysia Automotive Recyclers Association (MAARA) raised the importance of utilising used parts. However, the importation of used parts is not introduced. Safety and environmental issues related to used parts are still subject to discussion.

Some ELV recyclers do not adhere to environmental laws or guidelines. This causes the inappropriate processing of wastes. For example, engine coolants are being discharged freely into the drains, and air-conditioning gas is being freely released into the air. This will lead to a serious impact on the environment.

The occupational health of ELV recyclers during the dismantling process and downstreaming recycling is also a challenge. Some workers in some ELV recycling sites are working in bad conditions.

According to the Malaysia Automotive Institute (MAI), the development of appropriate infrastructures for promoting ELV recycling is also challenge. The lack of standards covering the whole life of the vehicle, e.g. design, parts, dismantling process, and so on, is also challenge. The enhancement of collaboration among ministries related to ELV recycling is also expected.

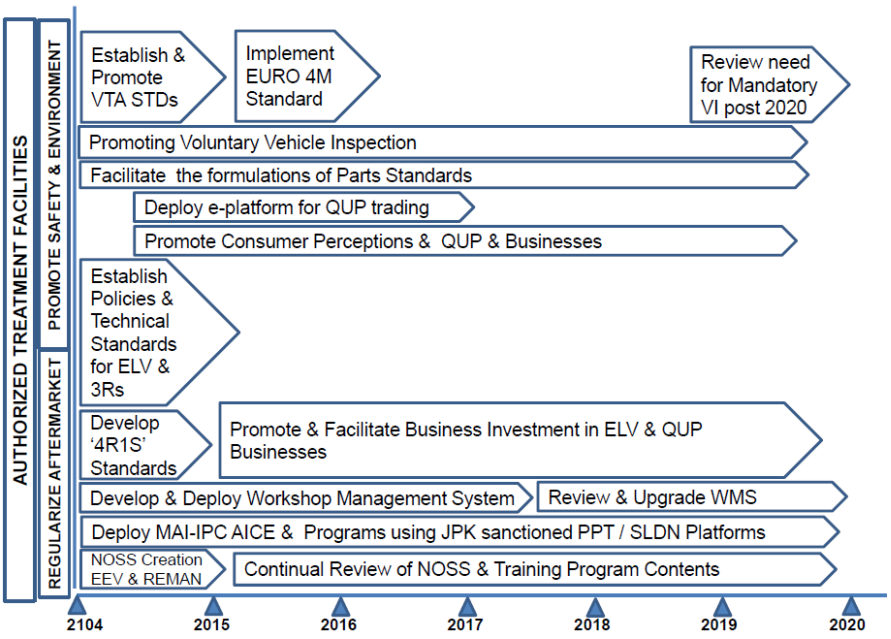
Malaysia is in its early stages of starting the ELV recycling system and considering ELV recycling regulations. Many environmental regulations are related to ELV recycling. Environmental Quality Act 1974 is a basic law for environmental issues. Waste management is also mentioned in the law. The law was revised in 1985, 1996, 2000, and 2001.

NAP 2014 focuses on the objectives of enhancing the competitive advantage of the local automotive industry and developing an environmentally friendly automotive manufacturing ecosystem and their outputs. The main objectives are to:

- Promote a competitive and sustainable local automotive industry, including national car companies;
- Develop Malaysia as the regional automotive hub in energy efficient vehicles;
- Promote the increase of value-added activities in a sustainable manner while continuously developing the local capabilities;
- Promote increase in exports for vehicles and automotive components;

- Promote participation of Bumiputera companies in the total value chain of the local automotive industry; and
- Safeguard consumers' interest by offering safer and better quality products at competitive price.

Figure10. Developing automotive authorised treatment facilities Framework



AICE = Automotive Industry Certification Engineering, EEV = Energy Efficient Vehicle, ELV = end-of-life vehicle, MAI-IPC = Malaysia Automotive Institute- Industry lead Professional Certification, PPT = Pentauliahan Pencapaian Terdahulu, QUP = Quality Used Parts , SLDN = Sistem Latihan Dual Nasional, STDs = Standards , VTA = Vehicle Type Approval, WMS = Workshop Management System , 3R = Reduce, Reuse and Recycle.
Source: Malaysia Automotive Institute (MAI).

To complement the execution of NAP 2014, there are six road maps and implementation plans that have been developed. The road maps will be under the supervision of MITI. MAI shall act as the agency to coordinate, implement, and monitor the programs. These road maps will serve as guidelines to achieve the transformation objectives of the local automotive industry. These road maps are as follows:

1) Malaysia Automotive Technology Road Map

2) Malaysia Automotive Supply Chain Development Road Map

3) Malaysia Automotive Human Capital Development Road Map

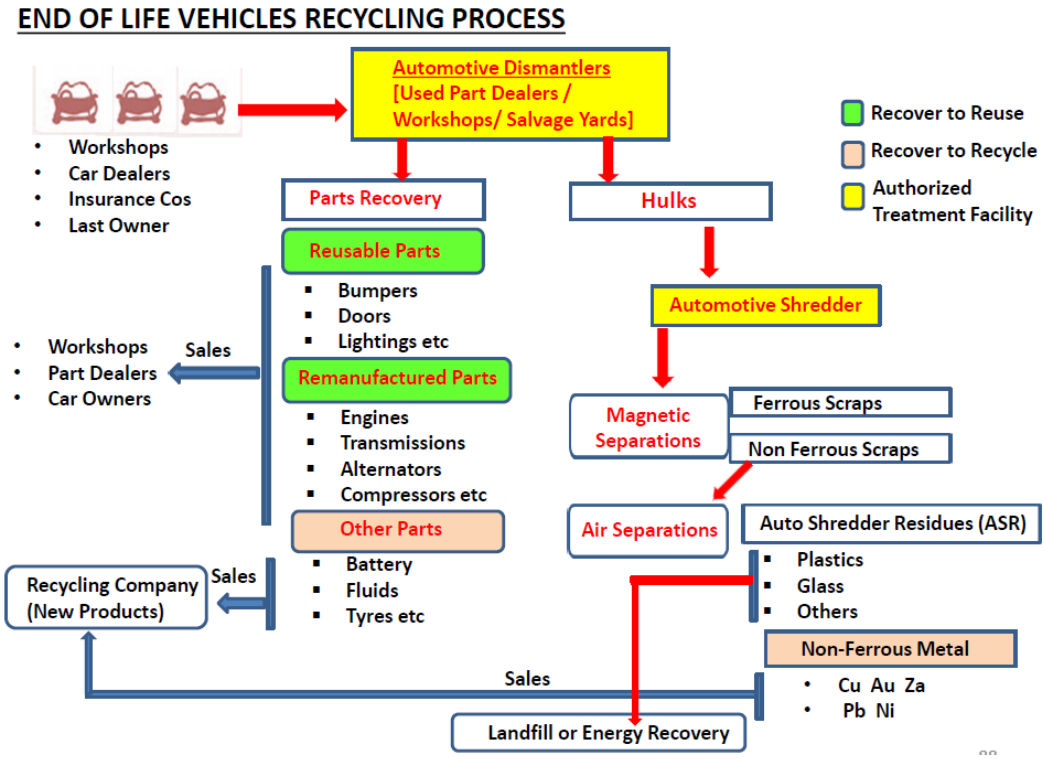
4) Malaysia Automotive Remanufacturing Road Map

5) Development of Automotive Authorized Treatment Facilities (ATF) Framework

6) Malaysia Automotive Bumiputera Development Road Map.

The development of the Automotive Authorised Treatment Facilities Framework was established for ELV recycling. NAP 2014 will promulgate policies to introduce an ELV regime, which will be supported by authorised treatment facilities to enable ELV processing. NAP 2014 will promote regulations that drive 'Extended Producer Responsibility' and the '4R' practices (Reduce, Reuse, Recycle and Remanufacture) that substantially decrease the final 'waste' of a product by improving product design. SIRIM is also currently developing ELV standards. The ELV standards will relate to general matters, hazardous wastes, dismantling, and the 3Rs. Details of the ELV recycling scheme are under discussion at MITI.

Figure 11. ELV recycling process



Au = Gold, Cu = Copper, ELV= End-of-life vehicle, Ni = Nickel, Pb = Plumbum,. Zn = Zinc.
Source: Malaysia Automotive Institute (MAI).

5. Myanmar

Inspection systems are installed in Myanmar but they are not strictly managed. Consequently, very old cars can be used and they threaten the safety and the environment. These systems should be strictly implemented.

Dismantling is being done by the informal sector and components and scraps are circulated through the informal route. Vehicle dismantling is mainly conducted by small low-technology units with low yield and capacity. Capacity building is required for the proper operation of facilities. The automotive scrap volume required to promote ELV recycling is insufficient. Because of insufficient and unstable electricity, there is difficulty in steel production. Appropriate infrastructure like stable electricity is required for sustainable operation. In addition, environmental measures such as prohibition on illegal dumping of waste and collection of CFCs and the like are insufficient.

Used parts are illegally imported from other countries. Imported used parts cause environmental pollution due to the lack of environmental measures from import dealers. Remanufacturing parts are not popular due to the lack of awareness of parts dealers and their low quality.

Non-valuable resources are not properly collected and, in some cases, illegally dumped. Metallic component recycling is done manually. This causes labour safety issues. The quality control of steel production is required to promote metal recycling by separating the plastic during the burning. Valuable metals such as copper and aluminium are not utilised due to the lack of government-related facilities for copper and aluminium recycling.

The emission of hazardous wastes from components such as batteries, plastics, and waste oils causes environmental problems such as waste accumulation. Metallic component recycling is done manually, which causes labour safety issues.

The Myanmar Government does not hold a recycling facility for valuable metals such as rare metals, coals, and aluminium, which might turn out as an enormous loss in the future.

Furthermore, as mentioned in 4.2 (2), the replacement programme for scrapped cars was released by the government in 2011 and since then, people have been rushing to get their scrapped car certificate as well as their car importing licence. Two scrapped car plants in the country are unable to handle the excessive number of used cars waiting in lines.

Currently, there are no regulations on ELV recovery targets.

6. Philippines

The Philippine regulation relating to import and export is the Tariff and Customs Code of the Philippines 1991, amended in 2001. The code regulates the practice of evaluation and collection of duties in import and export as well as Customs supervision. The Philippine Tariff Commission makes tariff policies including tariff concessions, modifications, and rebates. The Commission also holds public hearings on anti-dumping and countervailing cases, and conducts investigations on safeguard measures. The Bureau of Customs, under the Philippine Department of Finance, is the sole agency that administers tariff laws and collects value-added tax and other additional taxes.

The regulations relating to vehicle registration are follows:

1) Motor vehicle inspection system

All motor vehicles shall be subjected to mandatory inspection prior to registration as per Memorandum Order No. 86-003 dated 3 June 1986. No motor vehicle of any classification shall be accepted for registration unless fully inspected in accordance with the standards and procedures for motor vehicle inspection. The three venues of inspection are the Land Transportation Office (LTO) District Office, the Motor Vehicle Inspection Stations (MVIS), and the Private Emission Testing Centres (PETC).

The existing institutional frameworks on certification and regulation are follows:

- Department of Transportation and Communications (DOTC) - LTO (Republic Act (RA) 4136) - for whole motor vehicle units;
- Department of Trade and Industry (DTI) - Bureau of Product Standards (BPS) (RA 4109) - for motor vehicle parts and components;
- Department of Environment and Natural Resources (DENR) - Environmental Management Bureau (EMB) (RA 8749) – for emission Standards;
- Department of Energy (DOE) - Oil Industry Management Bureau (OIMB) - for fuel quality; and
- Department of the Interior and Local Government (DILG) - Philippine National Police (PNP) - for anti-car napping/theft.

A proposed framework of Whole Vehicle Type Approval System is being developed.

2) Clean Air Act of the Philippines, RA No. 8749, was passed in 1998. The Act:

- provides for air quality management
- sets the ambient air quality guidelines and standards for monitoring
- sets emission limits for motor vehicles effective by 2003 (linked to registration).

The regulation of the importation of motor vehicles and engines should comply with emission limits.

The Philippines has an existing regulation known as the Ecological Solid Waste Management or RA 9003. However, there are no provisions on automobile recycling, even on the management of ELVs. The existing institutional frameworks on certification and regulation are follows.

- DOTC-LTO (RA 4136) – for whole motor vehicle unit;

- DTI-BPS (RA 4109) – for motor vehicle parts and components;
- DENR-EMB (RA 8749) – for emission standards;
- DOE-OIMB – for fuel quality; and
- DILG-PNP – for anti-car napping/theft.

The Philippines has no regulations on ELV recovery targets. The Philippines has environmental regulations on landfill, incineration ban, and heavy metals use ban.

7. South Korea

In South Korea, car manufacturers such as Hyundai and Kia have sophisticated recycling factories partly due to the high demand for recycle ratio in export destinations. A dismantling factory of Kia can systematically break up cars on conveyors. They first take out fluid then take out parts, and finally press the body. In 2010, it was estimated that 684,000 ELVs were generated each year in South Korea.

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

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

Korean cars that are more than three years old cannot be sold in the used car market. Therefore, they must be dismantled.

The recycling ratio for ASRs in South Korea is not high because recycling activity is governed by the principle of economics; that is, less valuable materials tend not to be recovered during the dismantling process.

Korea is governed by the 2007 Act for Resource Recycling of Electrical and Electronic Equipment and Vehicles, which creates a framework to hold producers and importers responsible for their use of resources. The law addresses the use of hazardous substances, recyclability of materials, collection of ELVs, recycling rates, and information exchange through an online data base.

Korea's Waste Electrical and Electronic Equipment (WEEE) and ELV recycling regulations came into force in January 2008.

Key components of the Korean ELV legislation include:

- Research and Development production stage; and
- Restriction on the use of hazardous materials.

New vehicles must be compliant with the annual recyclable rate, currently set at 85 percent through the improvement of materials and structure.

8. Taiwan

Taiwan has more than 200 scrap car dismantling yards and five crushing plants. ELVs are collected through the public, police, and car repair shops. In the yards, battery, oil and tires are taken out first to avoid pollution. These materials are separately treated. The remaining body would be pressed to take out valuable metals. The ASR generated is then sent to separation factories where iron and non-ferrous metals are recovered.

Taiwan has put in place a 'car recycling incentive' scheme which is similar to the 'cash for clunkers' programmes practised in other countries. The collection of ELVs is conducted in an organised way, equipped with web-based reporting system for recycling businesses. According to the Environmental Protection Administration, about 125,000 cars were recycled in 2013. The resource collection rate of waste motor vehicles in 2013 was about 65.39 percent.

Around 100,000 tons of tires have been recycled each year from 1999 to 2013. In 2013, the collection rate of waste tires was 62.26 percent. The recycling of lead-acid batteries has increased in Taipei, reaching more than 50,000 tons in 2011 to 2013. Resource collection rate for waste lead-acid batteries in 2013 was 81.72 percent.

Though quantities are unknown, the recovery of steel and non-ferrous metals in Taiwan is advanced. Taiwan uses a metal separation equipment. Pressed car scraps are crushed by crushers. The metal dust is separated by wind and then later by a magnetic separation process. Recovered metals would be sent to respective metal plants.

9. Thailand

Although there is an inspection system in Thailand, the rigorous implementation of the system is not assured and this leads to the circulation of old used cars. Using old cars threatens people's safety and the environment.

Dismantling operators have to acquire a licence (Department of Industrial Works Code-105 and 106) under the Notification of Ministry of Industry (MOI) No.15 B.E.2544 (2001). Under the regulation, they are required to introduce appropriate pollution prevention measures. The municipalities regularly monitor the implementation of the above-mentioned measures. In reality, in Thailand, dismantling businesses in urban areas are not expected to expand because the generation of ELVs is centred on rural areas. Vehicle dismantling is mainly conducted by small low-technology units with low yield and capacity. Environmental measures such as prohibition on illegal dumping of waste and collection of CFCs, among others are insufficient. For the dismantling process and downstream recycling, the occupational health of ELV recyclers is also challenge. Some workers in some ELV recyclers are working in bad conditions.

For recycling technology and dismantling infrastructure, there are some local companies that have shredding facilities that shred automobile scrap. There is room for improvement or sophistication of recycling technology in Thailand.

Currently, there is no specific legislation on ELVs. Various environmental regulations are imposed for controlling ELV recycling. These include:

- The Enhancement and Conservation of National Environmental Quality Act, B.E. 2535 (1992);
- Pollution Prevention and Mitigation Policy (1997-2016), which includes management, investment, legal, and supporting guidelines to address:
    - Water Pollution
    - Air Pollution
    - Noise and Vibration Pollution
    - Pollution from Solid Waste and Night Soil
    - Pollution from Hazardous Materials
    - Pollution from Hazardous Waste; and
- Environmental Standards:
    - Water Quality (2009)
    - Air Quality and Noise (2007)
    - Soil Quality (2004).

Most ELVs generated in Thailand are exported to neighbouring countries such as Myanmar, Lao PDR, and Cambodia. The current roles of the stakeholders under the current regulations related to ELV recycling are as follows.

- Importers – subject to Customs formalities (e.g. required documents, fees, re-export, registration), depending on type of vehicle importation (temporary or permanent);
- Manufacturers – subject to design/technical standards and regulations, vehicle registration, and taxes;
- Users – must comply with transport regulations and standards (e.g. emission standards, periodic inspection); and
- Government agencies – must comply with requirements of the following agencies:
    - Ministry of Commerce – issuance of permit for vehicle importation
    - Department of Land Transport – registration and inspection of vehicles
    - Pollution Control Department – emission testing

- Department of Energy – guidelines on fuels for vehicles
- Police – inspection of in-use vehicles.

10. Viet Nam

While the Environmental Protection Law of 2005 broadly delegates the responsibility of recovering expired or discarded means of transportation to owners (Article 67, 1.a/), there is no existing regulation specific to the management of ELVs and/or vehicle recycling.

Other related challenges include:

- No legal document dedicated to e-waste;
- Poor separation at source;
- Lack of large-scale centralised treatment complexes for industrial solid wastes and hazardous wastes; and
- Recycling is small-scale, spontaneous, difficult to control, and technologically unsophisticated.

The following are the demarcation of roles in the vehicle type approval/conformity system in Viet Nam:

- Manufacturers (applying for Type Approval Certificate)
  - Preparation of sample motor vehicles for technical service testing;
  - Submission of information package (information folder and test report); and
  - Sales, pre-delivery inspection, and mass production (upon certification).

- Importers (applying for Certificate of Conformity)
  - Securing required documents for import of vehicles;
  - Submission of imported vehicles for testing; and
  - Finishing the Customs formalities (upon certification).
- Users
  - Compliance to road transport regulations (licence, periodic inspection for technical safety, environmental protection, and roadworthiness).

- Government agencies
  - Ministry of Transport (MOT) – approving authority, checking of documents, carrying out the vehicle test, and issuance of certificates;

- Vietnam Register (VR) – approving authority, periodic vehicle inspection;
- Vietnam Motor Test Centre (VMTC) – vehicle test for motorcycles;
- National Emission Testing Centre (NETC) – vehicle test for motorcycles; and
- Police – inspection of licence plates.

Viet Nam is in the process of introducing legislation to control ELV recycling and making preparations for the introduction of an ELV legislative management system.

Viet Nam has quite a number of existing environmental regulations such as the following:

Environmental Protection

- Decree No. 59/2007/NĐ-CP dated 9 April 2007, promulgating the regulation on solid waste management activities, and the right and duty of the person related to solid waste management.
- Decree No. 81/2006/NĐ-CP dated 9 August 2006, promulgating the regulation on sanctions against administrative violations in the field of protection of the environment (replacing Decree No. 121/2004/NĐ-CP).
- Decree No. 80/2006/NĐ-CP dated 9 August 2006, detailing the implementation of the law on environmental protection.
- Law on Environmental protection dated 29 November 2005 (took into effect from July 1, 2006), replacing the Environmental Protection Law 1993.
- Decision No. 64/2003/QĐ-TTg of the Prime Minister dated 22 April 2003, approving the plan for managing the establishments causing seriously environmental pollution.

Solid and Hazardous Waste

- Decision No. 23/2006/QĐ-BTNMT of the Ministry of Natural Resource and Environment (MONRE) dated 26 December 2006, promulgating the list of hazardous wastes.
- Circular No. 12/2006/TT-BTNMT of MONRE dated 26 December 2006, promulgating the instructions on the condition, documentation, registration, and code of hazardous waste management.
- Decree No. 23/2005/CT-TTg of the Prime Minister dated 21 June 2005, strengthening the activities on solid waste management in urban areas and industrial zones.
- Decree No. 13/2003/NĐ-CP dated 19 February 2003, providing for the commodities prescribed as being dangerous/toxic and their transportation via roads.

- Decision No. 60/2002/QĐ-BKHCNMT of the Ministry of Science, Technology and Environment (MOSTE) dated 08 August 2002, guiding the implementation of the hazardous waste burying technique.
- Circular No. 02/2001/TT-BKHCNMT of MOSTE, dated 15 February 2001, instruction on the treatment of special wastes that encourage investments.
- Decision No. 155/1999/QĐ-TTg of the Prime Minister dated 16 July 1999, promulgating the regulation on hazardous waste management.
- Inter-Ministerial Circular No. 1590/1997/TTLT/BKHCNMT-BXD of the Ministry of Construction and MOSTE dated 17 October 1997, giving instructions to implement directive 199/TTg urgent management solid wastes in urban areas and industrial zones.

Recycling

- Decision No. 03/2004/QĐ-BTNMT of MONRE dated 02 April 2004, importing waste as materials for domestic production.
- Official Letter No. 1146/BKHCNMT-MTg of MOSTE dated 06 May 2002, approving the national action plan for cleaner production.

More details: http://www.asian-energy-journal.info/Abstract/Legal%20and%20institutional%20framework%20for%20solid%20waste%20management%20in%20vietnam..pdf)

11. India

It is difficult to grasp correctly the number of end-of-life/service vehicles. The use of old cars threatens the safety and the environment. Due to the lack of a car inspection system and deregistration (which is under consideration), it is difficult to trace the flow of vehicles after ending their life.

As for ELV dismantling, although the ELV rule is under consideration, there is currently no specific registration scheme for vehicle dismantling and no effective regulation on the industry. Dismantling is being done by the informal sector, and components and scraps are circulated through the informal route. Vehicle dismantling is mainly conducted by small low-technology units with low yield and capacity. Environmental measures such as prohibition on illegal dumping of wastes and collection of CFCs, among others, are insufficient. The working condition is very severe for the estimated 100,000 recycling workers who face severe health threats. Metallic component recycling is done manually. This causes labour safety issues. There is not enough space for facilities and the facilities are located in residential areas/city centres.

There is no regulation that governs the used components/parts but this is under consideration. The automotive scrap volume required to promote ELV recycling is insufficient. Used parts are illegally imported from other countries. Imported used parts cause environmental pollution due to the lack of environmental measures from import dealers. Rebuilt parts are not popular due to the lack of awareness of parts dealers and their low quality. Non-valuable resources are not properly collected and, in some cases, illegally dumped. Metallic component recycling is done manually. This causes labour safety issues.

As for the downstream recycling and treatment facilities, little treatment is done for hazardous materials. This results in air, water, and soil pollution in recycling facilities. Although the ELV rule is under consideration, there is currently no specific registration scheme for hazardous wastes. Metallic component recycling is done manually and this causes labour safety issues.