



Assessment of the implementation of Directive 2000/53/EU on end-of-life vehicles (the ELV Directive) with emphasis on the end of life vehicles of unknown whereabouts

*Under the Framework Contract: Assistance
to the Commission on technical, socio-
economic and cost benefit assessments
related to the implementation and
further development of EU waste
legislation*

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December 2017

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EUROPEAN COMMISSION

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www.europa.eu). Luxembourg: Publications Office of the European Union, 2018

PDF ISBN 978-92-79-81311-5 doi: 10.2779/446025 KH-01-18-291-EN-N

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Abbreviations / Glossary

ACEA	European Automobile Manufacturers' Association
ATF	Authorized Treatment Facility
CMI	Car Manufacturers/ Importers
CoD	Certificate of Destruction
EC	European Commission
ELV	End-of-life vehicle
EPA	Environmental Protection Agency
EUCARIS	European CAR and driving license Information System
Extra EU trade	Trade of EU MS with third countries
Extra EU export	Export from EU MS to third countries
Extra EU import	Import to EU MS from third countries
FCHC	Fluorinated and chlorinated hydrocarbons
FTS	Foreign Trade Statistics
IDIS	International Dismantling Information System
IMPEL	European Union Network for the Implementation and Enforcement of Environmental Law
Intra EU trade	Trade between EU MS.
Intra EU export	Export from EU MS to another EU MS
Intra EU import	Import to EU MS from another EU MS
ISORN	Indefinite Statutory Off Road Notification
MS	Member State(s)
POP	persistent organic pollutants
POLK	For the purpose of this study Oeko-Institut purchased a data license from R.L. POLK Germany GmbH for number of registered vehicles by the end of the of the year for the following characteristics: <ul style="list-style-type: none"> ▪ 25 of EU-28 MS (excluding MT, CY, BG). ▪ 2 Registration types: Passenger car, light commercial vehicles ▪ 22 fuel types ▪ 7 year (2008 - 2014) ▪ 15 age classes (≤ 1; $>1\leq 2$; $>2\leq 3$; ... ; $>13\leq 14$; >14)
SORN	Statutory Off Road Notification
UNODC	United Nations Office on Drugs and Crime

Abbreviations for Countries

AT	Austria	IE	Ireland
BA	Bosnia and Herzegovina	IS	Iceland
BE	Belgium	IT	Italy
BG	Bulgaria	LT	Lithuania
CH	Switzerland	LU	Luxembourg
CY	Cyprus	LV	Latvia
CZ	Czech Republic	MT	Malta
DE	Germany	NL	Netherlands
DK	Denmark	NO	Norway
EE	Estonia	PL	Poland
EL	Greece	PT	Portugal
ES	Spain	RO	Romania
FI	Finland	RS	Serbia
FR	France	SE	Sweden
HR	Croatia	SI	Slovenia
HU	Hungary	SK	Slovakia
		UK	United Kingdom

Legal Acts mentioned in the report

As referred in the report	Detailed legal reference
ELV-Directive	Directive 2000/53/EU on end-of life vehicles, OJ L 269, 21.10.2000, p. 34
Commission Decision 2005/293/EC	Commission Decision 2005/293/EC laying down detailed rules on the monitoring of the reuse/recovery and reuse/recycling targets set out in Directive 2000/53/EC of the European Parliament and of the Council on end-of life vehicles, OJ L 94, 13.4.2005, p. 30
Eurostat's guidance to the Commission Decision 2005/293/EC	Eurostat: How to report on end-of-life vehicles according to Commission Decision 2005/293/EC ¹
Waste Shipment Regulation (EC/1013/2006)	Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste OJ L 190, 12.7.2006, p. 1–98
Correspondents Guidelines No 9	Correspondents' Guidelines No 9 on shipment of waste vehicles ² Correspondents' guidelines represent the common understanding of all MS on how the Waste Shipment Regulation (EC/1013/2006) should be interpreted. The guidelines were agreed by the correspondents at a meeting on 8 July 2011 organised pursuant to Article 57 of Regulation (EC) No 1013/2006. They are not legally binding.
Battery Directive	Directive 2006/66/EC of the European Parliament and of the Council of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC (OJ L 266, 26.9.2006, p. 1)
Directive on the registration documents for vehicles (1999/37/EC)	Council Directive 1999/37/EC of 29 April 1999 on the registration documents for vehicles (OJ L 138/57, p. 57-65 from 1.6.1999)
Waste Framework Directive	Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (OJ L 312/3, 22.11.2008)

¹ <http://ec.europa.eu/eurostat/documents/342366/351811/ELV-Guidance/57d66ed3-dec2-4e93-8dbc-4084a89a0fd8>

² <http://ec.europa.eu/environment/waste/shipments/guidance.htm>

1. Executive Summary

1.1. Background and objectives

Vehicles of 'unknown whereabouts' are vehicles that are deregistered but without a Certificate of Destruction (CoD) issued or available to the authorities and also with no information available indicating that the vehicle has been treated in an ATF or has been exported. It is known from previous studies that the number of vehicles of unknown whereabouts is about 3 to 4 million vehicles per year, compared to around 6 to 7 million ELVs treated in compliance with the ELV Directive and reported to Eurostat.

The Commission has received complaints that raise concerns as to the environmental impact of vehicles of unknown whereabouts as well as in relation to distortions of the fair business practices for the commercial ELV management across Europe.

ELVs, when not depolluted or treated, are classified as hazardous waste. Spilled or burned engine oil and unsafe FCHC handling from air conditioners can cause particular environmental and human health concerns. In result each year between 20 and 55 million litres of hazardous non-fuel liquids³ are unaccounted for. Unsafe handling of the acid from lead-acid batteries and unsafe treatment, e.g. burning of plastics from ELVs, also pose grave concerns.

Because of the high number of EU vehicles of unknown whereabouts, whose materials and content may be valuable and can potentially cause significant environmental harm without proper treatment, and to reduce the distortion of the legal market by illegal activities, the Commission aims to further investigate the reasons for missing ELVs within the EU.

Against this background the EC requested a study to assess the implementation of the ELV Directive with emphasis on the ELVs of unknown whereabouts, aiming:

- to identify the causes for the 'unknown whereabouts';
- to identify options to overcome the incomplete implementation of the ELV Directive; and
- to assess if the actions of the MS are sufficient to fully enforce the ELV Directive in order to achieve its objectives.

For this purpose the current situation was assessed and concepts for improvement were developed. A public consultation was held from 29 June to 21 September 2016 and the contractor prepared a questionnaire addressed to the registration authorities of all EU MS and a stakeholder workshop in November 2016.

³ About 6 to 12 litres of liquids (other than fuels) are normally separated during the ELV depollution process per vehicle. Multiplied 3.4 to 4.6 million vehicles of unknown whereabouts results in 20 to 55 million litres.

1.2. Key findings / current situation

1.2.1. Vehicles of unknown whereabouts within the EU

The situation of vehicles of unknown whereabouts for the EU-28 did not improve compared to 2008, as displayed in Table 1-1 below.

Table 1-1: Results of the calculations for unknown whereabouts of vehicles for EU-28

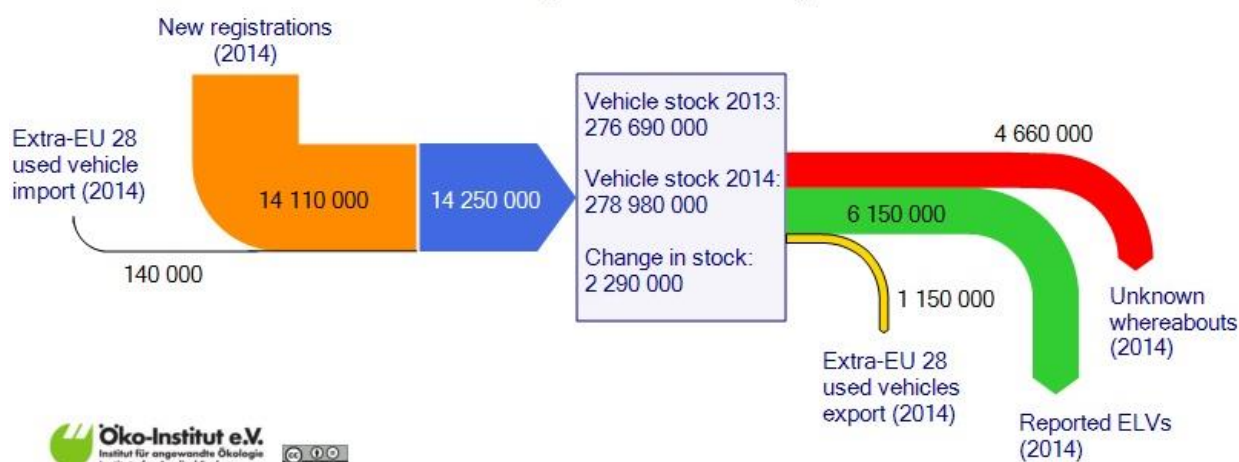
	2008	2009	2010	2011	2012	2013	2014
Unknown whereabouts (million vehicles)	4.1	3.4	3.4	3.82	3.51	3.69	4.66

Source: Oeko-Institut

In fact, for 2014 the number of unknown whereabouts peaked with 4.66 million vehicles. Figure 1-1 below displays the evaluation of the number of vehicles of unknown whereabouts for the EU-28 in 2014 by comparing the new registrations and imports, the change in the vehicle stock and the number of reported ELVs and the exports.

Data on ELVs for 2015 was not submitted by all countries at the date of the final compilation of this report. However, the data already published show no significant changes in the number of reported ELVs to Eurostat; thus, a similar amount of vehicles of unknown whereabouts might also be expected in 2015.

Figure 1-1: EU-28 balance for registration of new and import of used vehicles, the change in the vehicle stock and the whereabouts of the vehicles



Vehicles stolen and not found again might represent 4% to 5% of all vehicles of unknown whereabouts within the EU-28. Such a high amount makes vehicle theft a relevant crime and contributes with a limited share to the number of unknown whereabouts of vehicles in the EU. The relevance of stolen vehicles not found again might differ between individual MS.

Various aspects of **illegal export of ELVs** to third countries must be regarded as a relevant crime as well. Since for the balance in Figure 1-1 it does not matter if an ELV is fraudulently declared or not as a used vehicle as long as it is reported to the customs services, the question rather becomes whether there is more extra EU-28 export of used vehicles or ELVs compared to the reported number of 1.15 million in 2014, for example.

1.2.2. Number of ELVs and vehicles of unknown whereabouts in the Member States

Data on vehicle stock, new registrations and import and export for MS are not of the same robustness and completeness as the data for the EU-28 aggregate. In particular, the data on intra-EU trade of used vehicles is weak.

By combining detailed data on the national vehicle stock with the average European vehicle scrappage rate model, we calculated a proxy for the number of ELVs generated in the MS. The results are plausible in principle: for countries with net import of used vehicles and a vehicle stock with higher average age, we expect a higher rate of ELVs per registered vehicle.

However, the robustness and plausibility of the results are not sufficient to establish strict monitoring of enforcement at a national level. In case of conflicts, as for instance infringement proceedings, the data might not be defensible. In particular, the data gap on intra-EU trade of used vehicles and to some extent also data on the national vehicle stock poses difficulties in providing valid data.

Several MS reported on activities addressing the unknown whereabouts or the illegal treatment in facilities not regarded as ATF. However, such measures have not changed the number of ELVs reported by the MS to the EC.

1.3. Proposed measures to address the aspects of unknown whereabouts

The main fields for action to improve monitoring and tracking the whereabouts of the vehicles identified in the study are:

1. Improvement of registration and de-registration procedures.
2. Incentives and / or penalties for issuing and presenting CoDs.
3. Combating treatment of ELVs in non-authorised facilities including inspections of workshops and garages and spare part dealers that are not ATFs to identify illegal operations.
4. Improving data on vehicle stock and import / export to enable better monitoring of enforcement.

There is no hierarchical order for the different fields of action; each can be addressed by independent processes. There is no need for perfect coherence, but addressing more than one field ensures better success.

As expressed before, strict monitoring of the enforcement of the ELV Directive is not possible due to data gaps. As a consequence, some proposed measures address aspects to overcome this gap. However, even the best monitoring does not overcome deficits in implementation and enforcement. Other proposed measures therefore address aspects which support overcoming deficits in enforcement at the national level.

A short exemplary description of the proposal, including a preliminary assessment of the relevance and burden and the relevant actors, is given below. The full rationale and more details for the proposed measures are elaborated in Chapter 9.

1.3.1. Improvement of registration and de-registration systems

Relevance: Incoherence between ELV Directive and Directive on the registration documents for vehicles (1999/37/EC); as a consequence, different understandings of key terms increase the risk that the competent authorities have no information if the vehicle

- is suspended for the use on public roads or
- temporarily de-registered or
- its registration is cancelled or permanently cancelled or
- is exported or
- is depolluted / dismantled or shredded in an ATF or an illegal operating facility.

The aim of the proposals is to ensure that vehicles (including those not in use on public roads) are tracked until their registration is permanently cancelled and to ensure that national registration systems are linked up in a more effective way.

Proposals:

- a) Alignment of the terms used in the ELV Directive and Directive on the registration documents for vehicles (1999/37/EC): define clear and common definitions for 'registration', 'de-registration', 'temporary de-registration', 'suspension', 'cancellation of the registration' and 'permanent cancellation of the registration'.
- b) Establishment of a conclusive list of conditions for permanent cancellation of registration should strengthen the need to present a CoD and enable the competent authorities to keep track of the vehicles' whereabouts. This conclusive list should include: i) presentation of a CoD, ii) proven export of a vehicle, iii) proven theft of a vehicle and iv) official statement/ document from owner that the vehicle is no longer available for re-registration.
- c) To improve the efficiency of the notifications on CoDs we recommend establishing the obligation to ATFs and collection points to submit electronic notifications to the registration authorities if a CoD is issued.
- d) Currently the MS where a vehicle is dismantled (and a CoD is issued) is not obliged to inform the MS of registration (where that vehicle was last registered) on that occurrence. The contractor recommends adding to Article 5(5) of the ELV Directive the following obligation 'Relevant authorities receiving a notification that a CoD has been issued by a national ATF (or collection point) for a vehicle which has not been registered in the country must notify the corresponding authority of the MS where the vehicle was last registered'⁴.

⁴ During the public consultation in September 2016, the Association of European Vehicle and Driver Registration Authorities (EReg) provided the information that 'The existing EUCARIS functionality offers a solution for electronic cross border CoD notification'. EUCARIS is a governmental organisation financed by national governments and it is based on the EUCARIS treaty or on Memorandum of Understanding. The European Union is not contracting party of the EUCARIS treaty. MS should agree among themselves to use the functionality of EUCARIS.

Burden:

- A) The effort to establish the alignment of legal acts at the EU and national levels is time-consuming but the financial burden is of limited relevance.
- B) Limited burden to the ATFs, by managing more CoDs to be issued and managed. However, the increased number of ELVs directed to ATFs will compensate for the burden to the (legal) private sector.
- C) National authorities must manage more information on the status of the vehicle. The national efforts / costs for changing the national registration systems for the new definitions are not known. However, when considering the implementation of internet-based administrative procedures, the burden might even decrease.
- D) Vehicle owners must follow more strict administrative procedures. However, when considering the implementation of internet-based administrative procedures, the burden might be compensated.

Relevant actors: The European legislator should ideally be the first mover. MS should ensure harmonisation between the national transposition of the ELV Directive and Directive on registration documents for vehicles (1999/37/EC). However, as long as the European legislator does not succeed in making progress on this issue, the MS can take legal measures as long as they do not contradict the current EU legislation.

1.3.2. Incentives and / or penalties to make use of CoDs

Relevance: Incentives or penalties can strengthen the willingness to follow the legal obligations.

Proposal: Options for economic incentives are:

- a) Premium payment when a CoD is issued, funded by public budget. Such scrappage schemes have been applied during the financial crisis in 2008 / 2009 in several EU MS.
- b) Premium payment when a CoD is issued, funded by a deposit system. Such a deposit system is established in Denmark.
- c) Recycling fees (collected from the manufacturer / importer) used for research on ELV recycling and support of the ATFs, shredders and post shredder technologies to comply with the legal obligations. Such a system is applied in the Netherlands.

Options for penalties are:

- a) A continuous (yearly) fee remains in place (even if the vehicle is not used on public roads) until evidence is provided by the last owner for the whereabouts of a vehicle (by demonstrating a CoD, a contract of purchase, export document or police statement that the vehicle is stolen).
- b) Fines for illegal dismantling or for selling an ELV to illegal dismantlers.
- c) Fines for dealers dealing with dismantled (used) spare parts from non-authorised facilities.

Burden: The burdens to authorities, the recycling sector and car owners depend on the details of the established scheme. A good reasoning and a fair level of incentives and penalties are essential to gain acceptance of such schemes. An effective system of incentives and penalties, in combination with a good system for the vehicle registration (see above), might generate less economic burden for the national authorities rather than repeating comprehensive inspection campaigns.

Relevant actors: For the time being, such (economic) incentives are not considered under European legislation.

MS have the choice of establishing such schemes in compliance with the general rules of the European single market. Until now only few MS (e.g. Denmark and the Netherlands) have established essential components.

The EC might encourage the MS to establish measures as described above and support such action with a study or guideline on best practice examples.

1.3.3. Combating illegal treatment and export of ELVs

Relevance: Illegal treatment of vehicles in non-authorized treatment facilities in the EU causes environmental harm if hazardous liquids or other hazardous leak into the environment and causes relevant injury to health for the people handling such materials in an inadequate manner.

ELVs might be illegally exported to non-OECD countries causing there potentially environmental harm and injury to health as well. The EC has detected also a risk of losing secondary raw materials. With regard to the question of 'unknown whereabouts', it is relevant if the export is not reported at all (also not reported as export of used vehicle) and not included in the files of the customs services.

Proposal: The following actions might support identifying and combatting illegal activities:

- a) Inspection campaigns for the vehicle maintenance/ repair/ dismantling and shredding sector;
- b) Establishment of an obligation to display the origin of used spare parts, as illegal dismantling of valuable components makes legally operating ATFs less (or not) profitable;
- c) Establishment of legally binding definitions on how to distinguish used vehicles from ELVs. Several stakeholders, in particular customs authorities, claim that the current Correspondents' Guidelines No 9 on shipment of waste vehicles are not practical for application by the competent authorities and adjustments are needed before making it legally binding.

Burden:

- A) According to experiences in the UK and France, inspection campaigns are quite time-consuming for the involved national authorities. Some stakeholders have proposed to assess the option if such effort might be compensated by registration fees or covered by producer responsibility organisations.
- B) Spain intended to establish a certificate on the origin and functionality of used spare parts dismantled by ATFs from ELVs. However, it is premature to estimate the effort to maintain and control such a system. Internet-based documentation might reduce effort compared to paper-based solutions.
- C) Considering the huge number of exported used vehicles (1.15 Million in 2014), it would easily take 1000 full-time inspectors to assess if each single used vehicle is a used vehicle or waste. So a more efficient method might be intelligent spot checks / inspection days with strict follow up.

Relevant actors: The EC might support the three proposed aspects above by establishing minimum requirements for inspections⁵ and establishing the legal conditions for trade with used spare parts and the distinction of ELVs and used vehicles for export. However, the actors for inspection campaigns and enforcement are the national and regional authorities.

1.3.4. Better statistics on vehicle stock and import / export

Relevance: Better data do not necessarily change the situation of illegal treatment but make it more obvious where illegal treatment must be expected and where the need to fight such illegal treatment is necessary.

Proposal: As demonstrated in Chapter 3.2, with the data currently provided by the MS, it is not possible to calculate the number of vehicles of unknown whereabouts for single MS. Voluntary reporting on the vehicle stock, as proposed in Eurostat's guidance to the Commission Decision 2005/293/EC, proved not to be sufficient relevant for the MS to close the data gap. In consequence, it is necessary to establish additional data sources to monitor the performance of the MS. The following aspects might contribute to better data and monitoring:

- a) Report on cross border trade of used vehicles within the EU, referring a) to the first registration in the national register (for imports of used vehicles) and b) for exports to other MS to notifications of re-registration according to the Directive on the registration documents for vehicles (1999/37/EC), Article 5(2).
- b) Extra-EU trade: referring a) to Eurostat trade data and b) establish notification of re-registration with additional third countries (non EU).
- c) More detailed information (by age) on vehicle stocks to enable assessments of the imports and exports of vehicles.

Burden:

- A) Notifications / data on re-registration in another EU MS (as a proxy for the export of used vehicles) and data on (first) registration of a vehicle previously registered in another MS are in principle available but most MS do not record these data⁶. German experience indicates that the additional administrative burden is marginal.
- B) Some third countries (non EU) already contribute to the data notification on re-registration on bilateral agreements e.g. with Germany. The effort for such extended procedures is unknown.⁷
- C) With regard to the more detailed data on the vehicle stock: the data is in principle available to the national authorities. The only burden would be to transfer the data in the (more detailed) manner and to conduct validation on EU level.

⁵ To some extent this is established for extra-EU export in the Waste Shipment Regulation (EC/1013/2006), establishing the need to submit inspection plans to the Commission, the first by 1 January 2017 and in the IMPEL Project 'Waste Shipment Inspection Planning' (WSIP): Guidance on Effective Waste Shipment Inspection Planning; date of report: 9 November 2016. More experience is necessary to make the inspection plans more effective. Something similar should be established for garages, repair shops and used spare part dealers in the ELV Directive.

⁶ See footnote No 4

⁷ It would be favourable if the Association of European Vehicle and Driver Registration Authorities (EReg) and/or the European car and driving license information system (EUCARIS) discuss how to contribute to efficient procedures and a joint approach of the relevant national authorities in the MS.

Relevant actor: Based on a decision of the Expert Meeting / TAC on ELVs, the reporting on import / export of used vehicles might be compulsory for the future.

1.4. Other

The contract with the EC includes the provision of a report on the implementation of the ELV Directive for the periods 2008-2011 and 2011-2014. The report is published on the home page of DG Environment⁸.

The contract also requires the 'drafting of a Commission Decision 2005/293/EC, including the Annexes with the tables for reporting, for the annual reporting of ELV reuse/recovery and reuse/recycling targets, including reporting on the registered/deregistered vehicles and CoDs.'

The last two deliverables are provided in separate files to the EC and are not included in this report.

⁸ Home page: http://ec.europa.eu/environment/waste/elv/implementation_en.htm
Direct access: http://ec.europa.eu/environment/waste/elv/pdf/elv_implementation_2011_2014.pdf

2. Introduction

Article 5 (3) of ELV Directive provides for MS to set up a system according to which the certificate of destruction (CoD) is a condition for deregistration. This CoD shall be issued to the holder or owner of the ELV when this is transferred to an Authorised Treatment Facility (ATF). MS may permit producers, dealers and collectors on behalf of an ATF to issue CoDs under certain conditions.

Article 3 of Commission Decision 2005/293/EC laying down detailed rules on the monitoring of the reuse/ recovery and reuse/ recycling targets set out in the ELV Directive requires MS to provide the annual breakdown of the current national vehicle market and the ELVs on their territory.

Vehicles of 'unknown whereabouts' are vehicles that are deregistered but without a CoD issued or available to the authorities for this vehicle and also with no information available indicating that the vehicle has been treated in an ATF or has been exported legally as a second hand vehicle (or ELV if legally applicable). The EC's study on European second-hand car market analysis⁹ showed that in 2008 there were 4.1 million vehicles with 'unknown whereabouts' in the EU. The same study also states that the majority of the 'unknown whereabouts' should be considered scrapped or hoarded within EU 27 and that only a minority is exported as used vehicles or as ELV used for spare parts.

Following these findings, the EC has taken the following steps to tackle the problem:

- Eurostat's guidance to the Commission Decision 2005/293/EC for the annual monitoring of the reuse/ recovery and reuse/ recycling targets set out in the ELV Directive and now also requests MS to report vehicles registered and de-registered in the national market on annual basis, in addition to the reporting of the number of Certificates of Destruction required according to Article 5(3) of the ELV Directive. A number of MS have reported substantial gaps between the CoDs issued and the number of ELVs as displayed in Figure 3-6.
- The EC also sent formal inquiries to all MS in May 2012. In these inquiries the EC asked MS to provide data on their national vehicle market for the years 2008-2009-2011 to enable the EC having an accurate picture of the implementation of the ELV Directive (number of registrations, final deregistration, CoDs issued, exports of second-hand vehicles to other EU and non-EU countries). Some of the MS admitted substantial gaps between the ELVs arising in the country and the CoDs issued as well as the number of the legal exports of second-hand vehicles, confirming that a high number of ELVs is of unknown whereabouts. A number of MS initiated studies or announced their intention to take measures, however the general situation did not improve by the End of 2015.
- The Ex-post evaluation of certain waste stream Directives¹⁰ published by EC by the 18 April 2014 confirmed the high number of unknown whereabouts.
- The EC has published the Guidelines for Waste Vehicles¹¹ that have been agreed in July 2011 by the Waste Shipment Correspondents ('Correspondents Guidelines No

⁹ Mehlhart, G.; Merz, C.; Akkermans, L.; Jordal-Jørgensen, J.: European second-hand car market analysis, Study funded by the EC, DG Climate, Final report 24.2.2011; <https://www.oeko.de/oekodoc/1114/2011-005-en.pdf>

¹⁰ http://ec.europa.eu/environment/waste/pdf/target_review/Final%20Report%20Ex-Post.pdf

9´) and are in use since 1 September 2011. These Guidelines represent the common understanding of all MS on how Regulation 1013/2006 on shipments of waste should be interpreted for the waste vehicles in providing criteria to differentiate between waste vehicles and used vehicles.

- Under the Waste Shipments Regulation¹², MS are required by 1 January 2017 to establish inspection plans, targeting exports of high-risk waste streams. Moreover, a correlation table between customs and waste codes was adopted in 2016 (Commission Implementing Regulation (EU) 2016/1245) to assist customs officials in identifying more easily waste streams crossing EU borders. The table is believed to serve as a tool to assist in curbing illegal exports of waste out of the EU. However the last two measures, addressing illegal extra EU export, do not change the issue of unknown whereabouts as for the unknown whereabouts it does not matter if it is a used vehicle or a (illegally) exported ELV. As long as it is reported and contributes to the balance it is not unknown any more.

However, some issues still remain challenging and risk compromising the achievement of certain ELV Directive objectives, in particular the dismantling of ELVs by illegal facilities. The Commission has received complaints raising concerns as to the environmental impact of ‘missing vehicles’ as well as in relation to distortions of the level playing field for the commercial ELV management across Europe.

ELVs, when not depolluted or treated, are classified as hazardous waste for various reasons. Firstly, spilled or burned engine oil and unsafe FCHC handling from air conditioners can cause particular environmental and human health concerns. About 6 to 12 litres of liquids (other than fuels) are normally separated during the ELV depollution process per vehicle. Calculated from the EU’s 3.4 to 4.6 million vehicles of unknown whereabouts, between 20 and 55.2 million litres of hazardous non-fuel liquids are unaccounted for. Furthermore, unsafe handling of the acid from lead-acid batteries and unsafe treatment, e.g. burning of plastics from ELVs, also pose grave concerns.

Because of the high number of EU vehicles of unknown whereabouts, whose materials and content may be valuable and can potentially cause significant environmental harm without proper treatment, the Commission aims to further investigate the reasons for missing ELVs within the EU.

Against this background the EC requested by 17 November 2015 a study to assess the implementation of the ELV Directive with emphasis on the ELVs with unknown whereabouts with the aim

- to identify the causes for the ‘unknown whereabouts’;
- to identify options to overcome this incomplete implementation of the ELV Directive; and
- to assess if the (envisaged) changes of the MS are sufficient to fully enforce the intention of the ELV Directive.

¹¹ <http://ec.europa.eu/environment/waste/shipments/guidance.htm>

¹² See ; <http://ec.europa.eu/environment/waste/shipments/legis.htm>

3. Current Situation

3.1. Vehicles of unknown whereabouts within EU

An analysis of the European second-hand vehicle market⁹, prepared for the EC in 2011, showed that there were more than 4.1 million missing vehicles within the EU in 2008. In 2009 this dropped to an estimated 3.4 million vehicles of unknown whereabouts¹³.

The subsequent sections present the results of the calculations for the number of vehicles of unknown whereabouts within EU-28 as the total for 2010 to 2014.

All given values refer to passenger vehicles (M1) and light commercial vehicles (N1).

3.1.1. Methodology

In order to estimate the number of missing vehicles (M1+N1) in the EU the *material balance method* is applied:

$$\text{INPUT}_{\text{EU}-28} = \text{OUTPUT}_{\text{EU}-28} \pm \Delta \text{STOCK}_{\text{EU}-28} \quad (1)$$

The system boundaries are the EU 28 borders:

$\text{INPUT}_{\text{EU}-28}$ refers to extra EU imports of used vehicles and registrations of new vehicles within EU;

$\text{OUTPUT}_{\text{EU}-28}$ refers to extra EU exports of used vehicles and ELVs arising within EU 28;

$\Delta \text{STOCK}_{\text{EU}-28}$ refers to the change in stock, which, in the case of this study, corresponds to the change in vehicle stock within the EU 28.

The evaluation of vehicles of unknown whereabouts within the EU is done on the basis of the following equation:

$$\text{UNKNOWN}_n = N_{n-1} - N_n + \text{IMPORTS}_n + \text{NEW Reg}_n - \text{EXPORTS}_n - \text{ELV}_n \quad (2)$$

Where:

UNKNOWN Number of vehicles with unknown whereabouts (positive value = stock exit, negative value = stock entry);

N Number of vehicles in the vehicle stock;

IMPORTS Extra EU imports;

NewReg Registration of new vehicles within EU 28;

EXPORTS Extra EU exports;

ELV End-of life vehicles (published by Eurostat);

$\text{Index } n$ Reporting year.

¹³ Merz, C.; Mehlhart, G.: Import und Export von Gebrauchtfahrzeugen in Europa, in: Recycling und Rohstoffe - Band 5, Hrsg: K. J. Thomé-Kozmiensky, D. Goldmann, TK Verlag Karl Thomé-Kozmiensky; 2012, p. 639-658

3.1.2. Results

The results of the analysis are visualized in the following diagrams (Figure 3-1 to Figure 3-5) for 2010 to 2014. On the input side there are registrations of new vehicles in the EU and import of used vehicles into the EU-28. The ELVs reported by MS and export of used vehicles outside the EU are outputs. The positive value of stock change states for the accumulation of vehicles in a stock. Its negative quantity would express depletion of vehicles in a stock.

Figure 3-1: Vehicles entries and exits of the EU-28 vehicle stock and its rise within one year – 2010

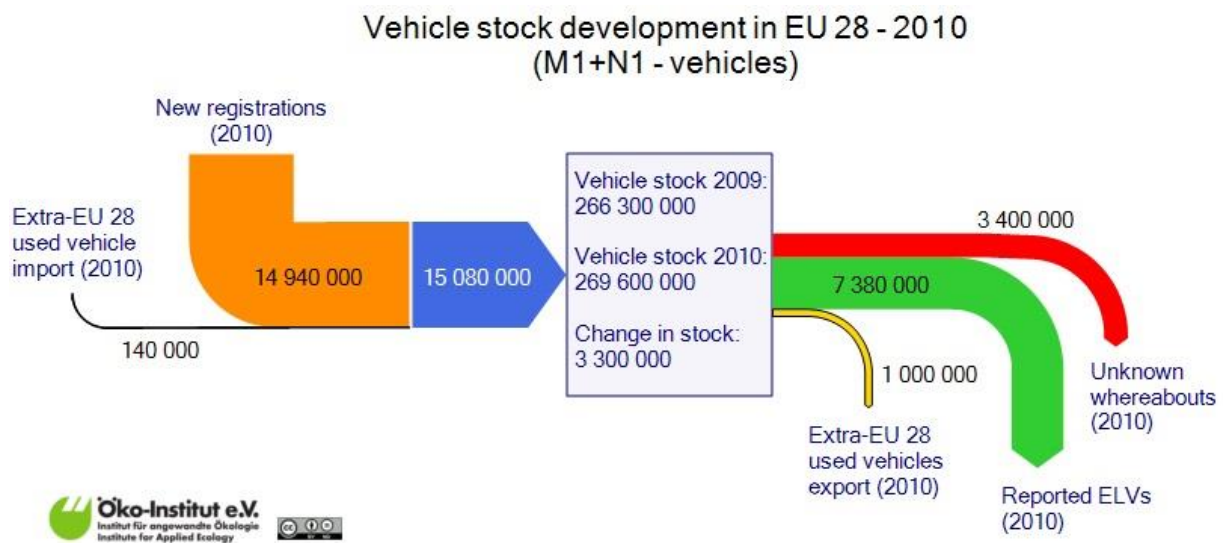


Figure 3-2: Vehicles entries and exits of the EU-28 vehicle stock and its rise within one year – 2011

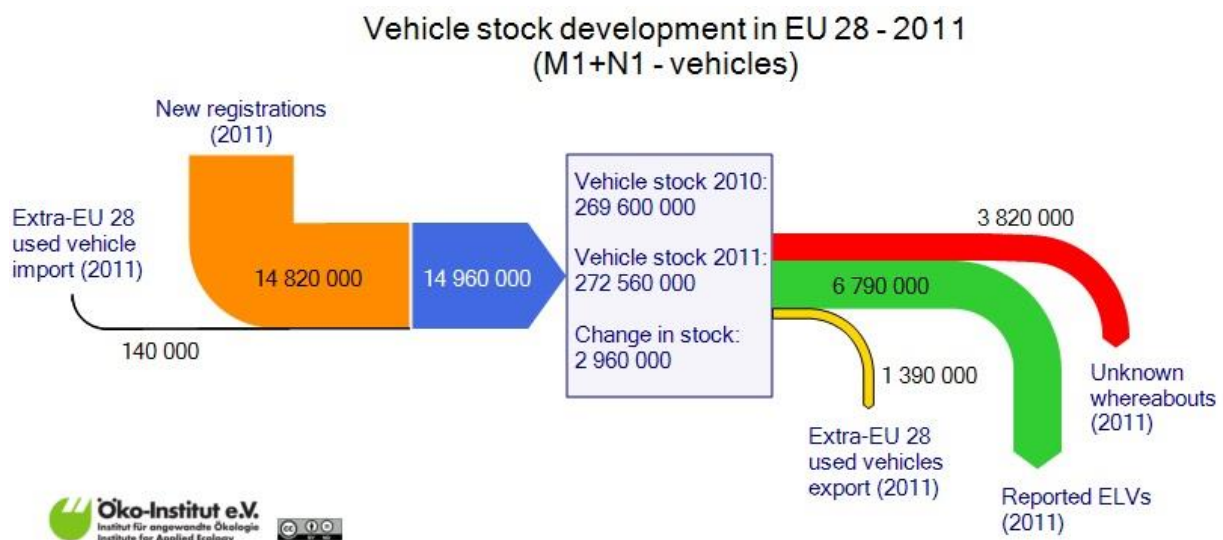


Figure 3-3: Vehicles entries and exits of the EU-28 vehicle stock and its rise within one year – 2012

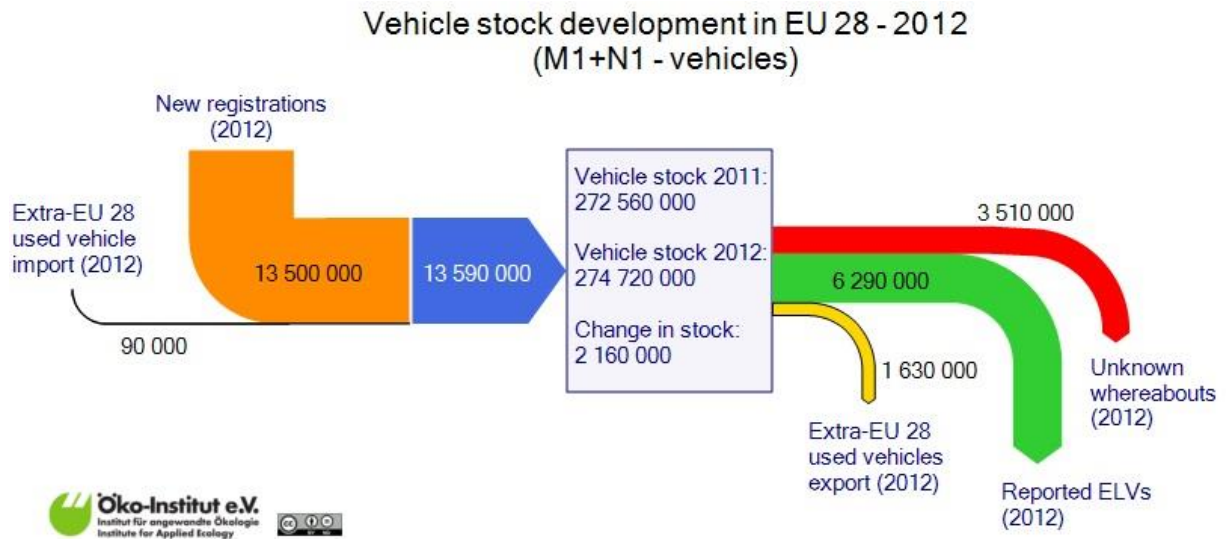


Figure 3-4: Vehicles entries and exits of the EU-28 vehicle stock and its rise within one year – 2013

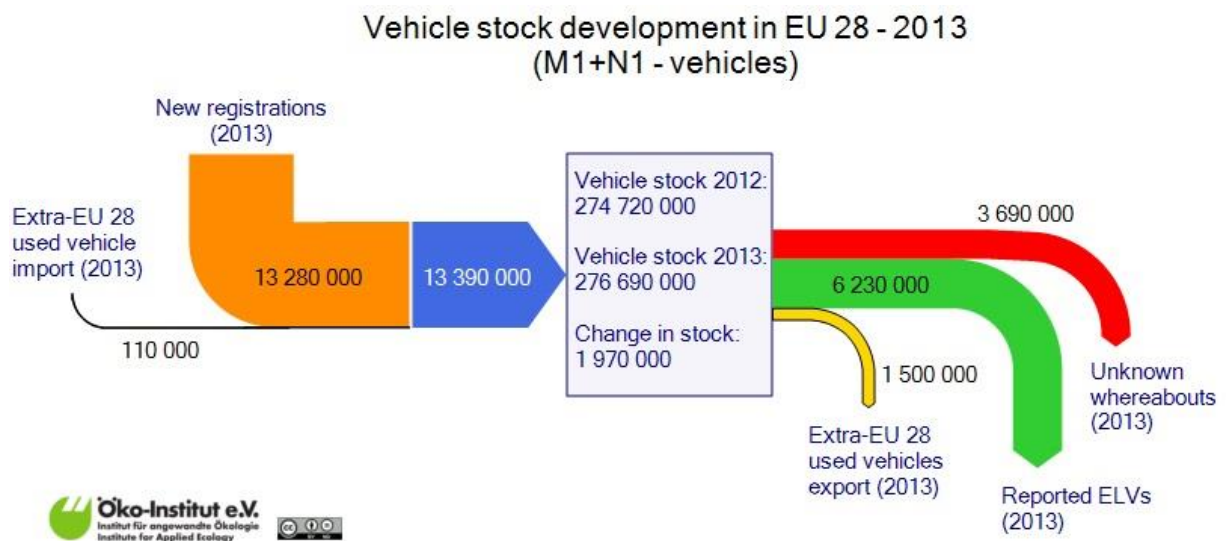
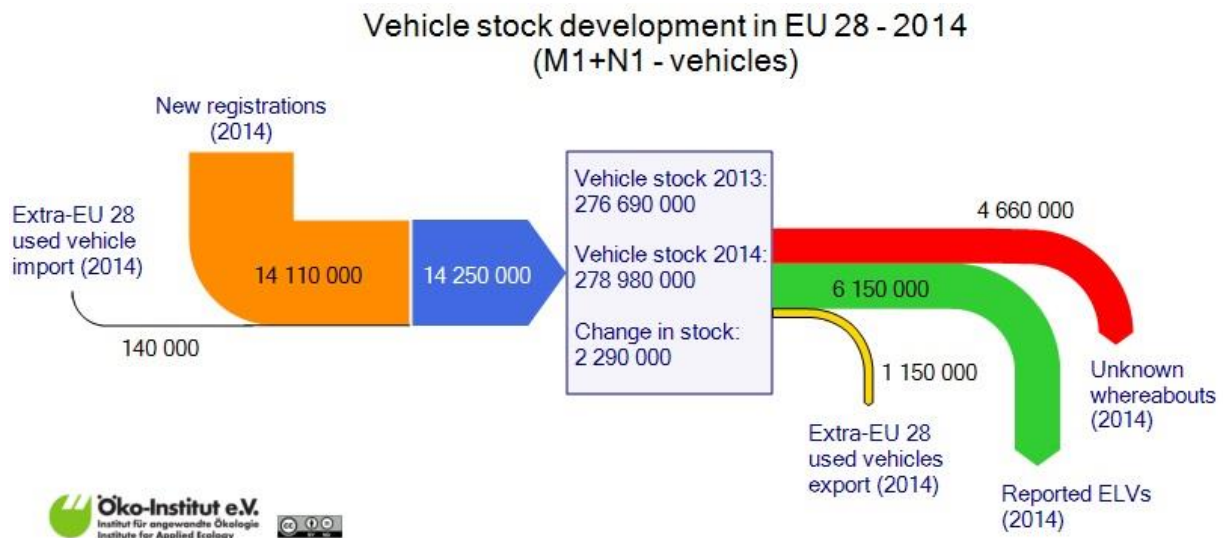


Figure 3-5: Vehicles entries and exits of the EU-28 vehicle stock and its rise within one year – 2014



3.1.3. Data Sources

For the purpose of the calculations of vehicles' entries and exits of the EU 28 stock, data from different sources were collected:

- Data on extra EU trade of used vehicle, i.e. data on import and export of used vehicles to and from the European Union (EU-28):
 - Eurostat, Foreign Trade Statistics (FTS)
- Data on new registrations and vehicles stock:
 - European Automobile Manufacturers' Association (ACEA)
 - Minor gaps were added from other sources (Eurostat (Data set: road_eqs; road_eqr); POLK).
- Data on ELVs: Eurostat (Data set: env_waselvt).

3.1.4. Data Quality and Robustness

When assessing in detail the quality of data used, we observed some incoherence with regard to:

- a) Overestimations of the stock (e.g. for PL and PT): we assume that these countries report more vehicles for the stock than available for transport on public roads. This assumption is based on the observation that a relevant number of these vehicles do not have an indemnity insurance and/ or technical inspection. For instance for Poland approximately 7 million vehicles are suspected not being accounted for registration any more, as these vehicles have no valid indemnity insurance. This would result in less growth of European stock and consequently more unknown whereabouts. For more detailed data on the vehicle stock please refer to Chapter 3.2.4.
- b) Some countries (e.g. FI, IE and HR) report more ELVs than CoDs issued (see, Figure 3-6). The intention is to report about all ELVs generated on their territory. However there is no evidence that all these vehicles (without CoDs) were treated

in legal facilities. If for FI, IE and HR only the CoDs would be taken into account for the calculation of the unknown whereabouts (instead the ELVs reported to Eurostat) the number of unknown whereabouts would increase by 50 000 to 60 000 vehicles.

Considering these observations regarding the data quality we can assume that the results of the calculations about unknown whereabouts are quite robust and represent even minimum volume as the quality concerns give reasons to assume that even more vehicles are missing:

- a) Less growth of vehicle stock (compared to the reported) will increase the unknown whereabouts.
- b) Less ELVs treated according the requirements (with CoD) will increase the number of unknown whereabouts.

3.1.5. Conclusions

The results of the calculations about unknown whereabouts for EU 28 are displayed in Table 3-1 below. The situation for EU-28 did not improve compared to 2008. In fact, for 2014 the number of unknown whereabouts peaked with 4.66 million vehicles. These results are quite robust and represent minimum volumes, as explained in the previous chapter.

Table 3-1: Results of the calculations for unknown whereabouts of vehicles for EU-28

	2008	2009	2010	2011	2012	2013	2014
Unknown whereabouts (million vehicles)	4.1	3.4	3.4	3.82	3.51	3.69	4.66

Source: Oeko-Institut

3.2. Vehicles of unknown whereabouts per Member State (MS)

3.2.1. Methodology

The calculation of the number of unknown whereabouts per MS is different to the calculations for the EU-28 aggregate as the trade between the MS needs to be considered.

In principle the equation for a single MS is similar to equation (1)

$$INPUT_{MS} = OUTPUT_{MS} \pm \Delta STOCK_{MS} \quad (3)$$

For the system boundaries = single MS the calculation is:

$INPUT_{MS}$ refers to extra EU imports + intra EU imports of used vehicles + registrations of new vehicles;

$OUTPUT_{MS}$ refers to extra EU exports + intra EU exports of used vehicles + ELVs;

$\Delta STOCK_{MS}$ refers to the change in stock for the relevant MS.

In the following chapters we assess the availability and quality of different data sources for the calculation of the number of unknown whereabouts per MS.

- In chapter 3.2.2: the number of ELVs
- In chapter 3.2.3: the number of ELV exported / imported
- In chapter 3.2.4: the vehicle stock
- In chapter 3.2.5: the number of extra EU export of used vehicles
- In chapter 3.2.6: the number of extra EU import of used vehicles
- In chapter 3.2.7: the number of intra EU trade of used vehicles

As the data situation discovered not to be sufficient to establish straight forward calculations for all MS, we tried to establish generic calculations

- In chapter 3.2.8: generic calculation of net import of used vehicles
- In chapter 3.2.9: generic calculation of the number of unknown whereabouts

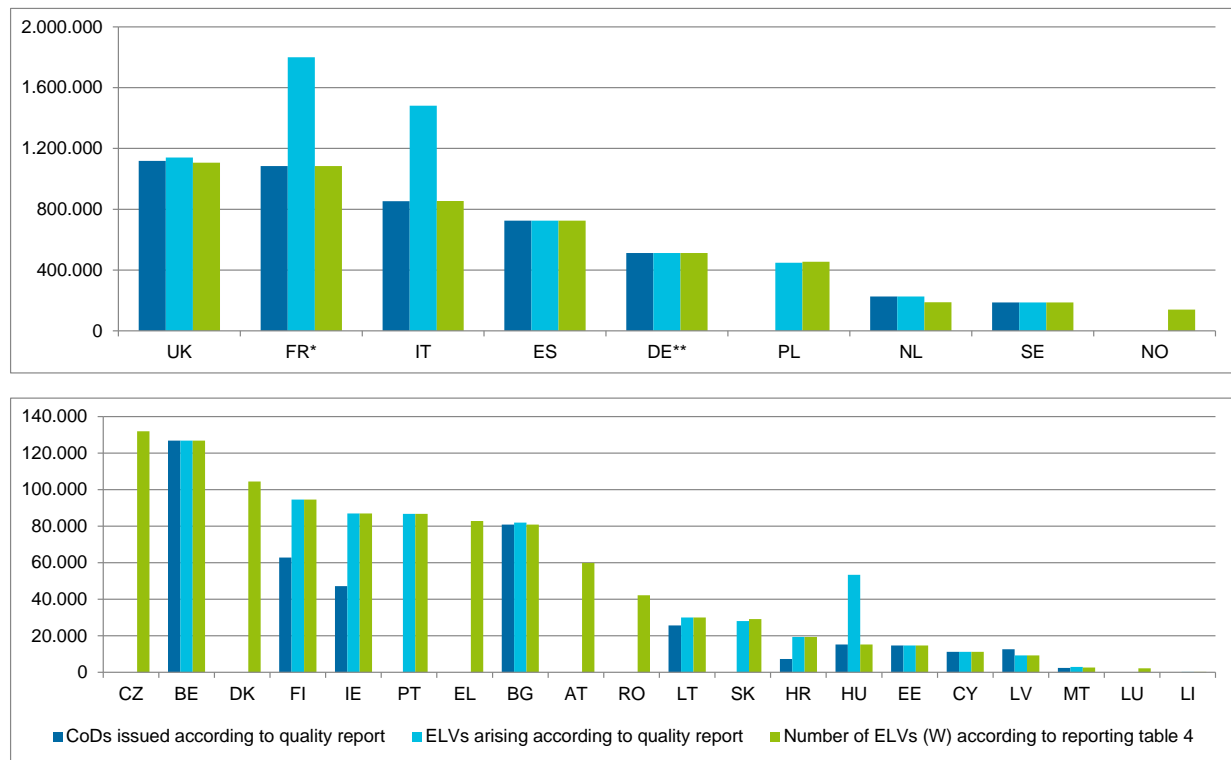
In addition we looked for other aspects, possibly contributing to the problem of unknown whereabouts like stolen vehicles and vintage vehicles in chapter 3.3 and last but not least we show exemplary national activities to assess the problem of unknown whereabouts in chapter 3.4.

3.2.2. Data on the number of ELVs

MS report to Eurostat ELVs arising and issued CoDs on the annual basis. The figure below (Figure 3-6) displays numbers of issued CoDs and ELVs arising provided by MS in the quality report and reporting table 4¹⁴ (corresponds to 'W' as total number of ELVs) for 2014.

¹⁴ Referring to table 4 in the Annex to Commission Decision 2005/293/EC

Figure 3-6: CoDs issued and ELVs reported by MS in quality reports and reporting table 4 (W) – 2014



* FR estimated in its quality report to Eurostat 1.5 to 1.8 million ELV, displayed here: 1.8 million ELVs; For 2015 FR did not report a detailed number but states the effective number of ELVs generated in France is unknown.

** DE mentioned in its quality report to Eurostat ‘other fate, not statistically verified’ of additional 540 000 vehicles (used vehicles or ELVs) not displayed here

Source: Number of ELVs (table 4): Eurostat: env_waselvt; CoDs & ELVs arising: quality reports submitted by the MS to Eurostat together with the data (not published by Eurostat).

Many countries did not provide data on ELVs arising and issued CoDs in the accompanying quality report. Other MS reported significant discrepancies between data given in quality report and data specified in reporting table especially on the ELVs arising. For instance, France estimated in the quality report a number between 1.5 and 1.8 million of ELVs whereas the reported (published) number is about 1 million and it equals the number of issued CoDs in this country. Similar huge discrepancy between estimated ELVs and reported ELVs arising is displayed for Italy and Hungary.

Some countries (e.g. Finland, Ireland, and Croatia) stated less issued CoDs in comparison to ELVs reported to Eurostat (green bar). According to the Commission Decision 2005/293/EC, Annex, note 5, on ELV monitoring *the total number of end-of-life vehicles (W) shall be calculated on the basis of the number of end-of-life vehicles arising in the MS, which is when a national authorised treatment facility issues a CoD*. That would mean that reported ELVs arising is an estimated value or based on another data source than number of issued CoDs. For instance, Germany declares in its annually quality report that the number of ELVs arising is taken from the waste statistics of the Federal Statistical Office.

The total discrepancy for all displayed countries in Figure 3-6 between estimated “ELVs arising according to quality report” and ELVs reported to Eurostat is about 1.5 million vehicles in the year 2014. The estimated number of missing vehicles within EU 28 in 2014 is set up at about 4 660 000 vehicles (please see the Chapter 3.1), so the obtained inconsistency is about 30 % of estimated missing vehicles.

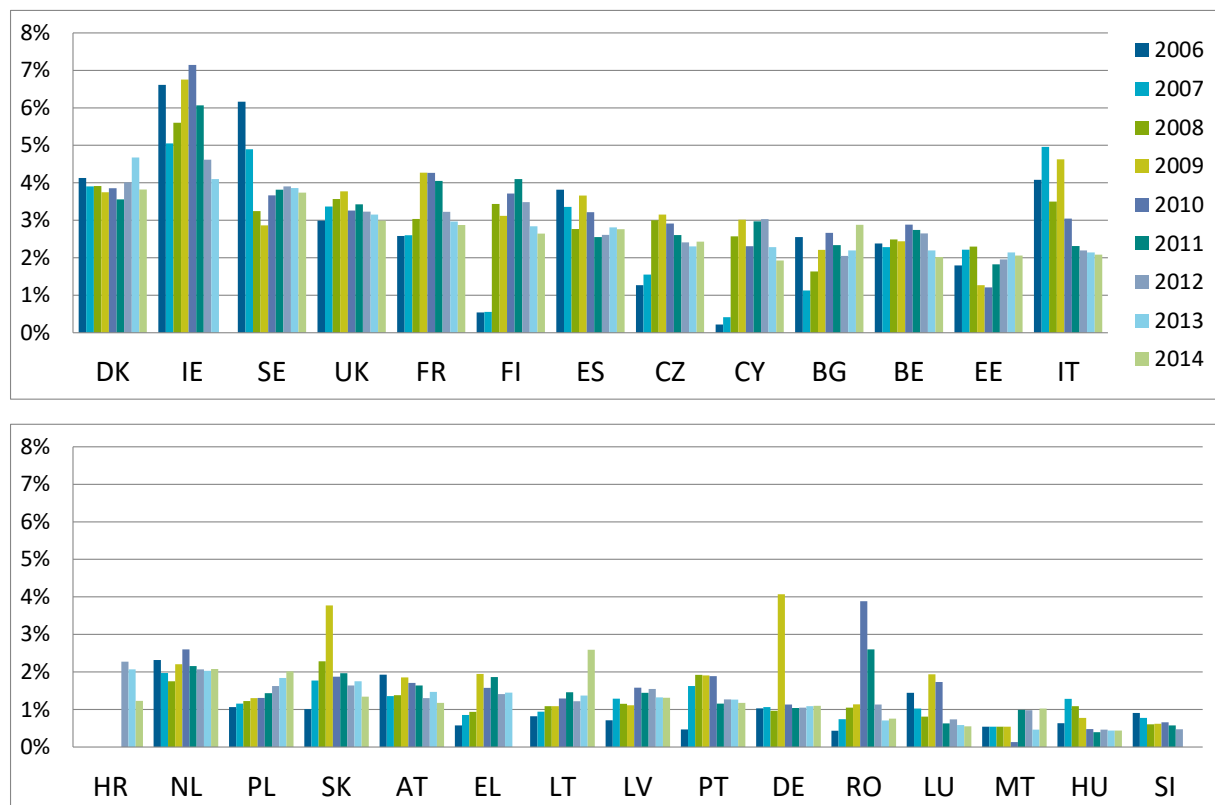
ELVs per registered vehicles.

Figure 3-7 displays the number of ELVs per number of registered vehicles in the MS. For a steady state stock and an average life span of 20 years per vehicle one would expect 5% of ELVs per registered vehicles. The discrepancies between countries where in principal similar economic conditions apply are of interest. For instance the difference between Denmark and Germany and the Netherlands: In contrast to Germany, Denmark applies a pay-out to citizens who handed over an ELV to an ATF and the Netherlands apply a very strict registration system where it is relevant to have a CoD (or certificate of export) to deregister a vehicle and at the same time the Netherlands apply a strict observation of the ATF and shredder sector.

The peaks in 2009 are caused by the national scrappage schemes established during the financial crisis.

However the indicator 'number of ELVs per registered vehicle' is not appropriate for compliance monitoring as the characteristics of the existing vehicle stock and import and export of used vehicles have relevant impact on the generation of ELVs and the number of unknown whereabouts.

Figure 3-7: ELVs per registered vehicle.



Source: Number of ELVs: Eurostat: env_waselvt; Number of registered vehicles: Eurostat / Polk
Compilation: Oeko-Institut e.V.

3.2.3. Data on import/ export of ELVs per MS

Information derived from waste shipment information (as displayed in Table 3-2) is, from the scope, not applicable as the relevant European List of Waste codes 16 01 04* (hazardous) and 16 01 06 (depolluted) have a broader scope than the ELV Directive and cover also ships/ vessels, trains and aeroplanes. For instance from comments of the exporting countries, it is known that the exports to Turkey are mainly vessels for depollution and dismantling. The volumes reportedly exported to other countries than Turkey are small, compared to the total volume of unknown whereabouts of million tonnes.

Table 3-2: Export of ELVs (ELoW code 16 01 04 and 160106) according to the reports according to Regulation (EC) No 1013/2006 on shipments of waste for the year 2014; Quantities expressed in tonnes

Sent to:	Belgium	Denmark	France	Spain	Turkey	United Kingdom
Exporter:						
Belgium			8 844		13 298	
Bulgaria					1 390	
France	5 937			978		
Germany		220				
Greece					159 679	
Ireland						583
Netherlands	5				7 162	
United Kingdom	4 530				13 197	

Source: Eurostat: Data on waste shipments, all available years, Version last update Version last updated: 28 November 2016
<http://ec.europa.eu/eurostat/documents/342366/351880/Eurostat+table+imports+exports/81bf76b0-2479-45bf-87d8-2d9d32c2c6e6>

In practice, sometimes it is difficult to distinguish between a used vehicle and an ELV. The *Correspondents' Guidelines No 9 on shipment of waste vehicles* defines criteria for the differentiation between second-hand vehicles and ELVs. However, this document is not legally binding except for Austria which is following a national court decision making it legally binding. So far only Wallonia has recognized the compulsory use of these Guidelines. For the purpose of the balance with the aim to identify the number of unknown whereabouts it is anyhow less relevant if the exported vehicles are reported as used vehicles or ELVs as long as they are reported.

A second source for the import/ export of ELVs might be the quality reports of the countries sent together with the yearly data to Eurostat¹⁵. MS are asked to provide, on voluntary basis, in their annual report to Eurostat information about exported used vehicles and ELVs. The review of the quality reports indicates that the majority of the

¹⁵ Eurostat: „How to report on end-of-life vehicles according to Commission Decision 2005/293/EC“

countries do not provide data on ELV export or report no ELV export. In result this source does not provide coherent data.

3.2.4. Data on the vehicle stock per Member State (MS)

We reviewed the following data sources for the purpose of this project:

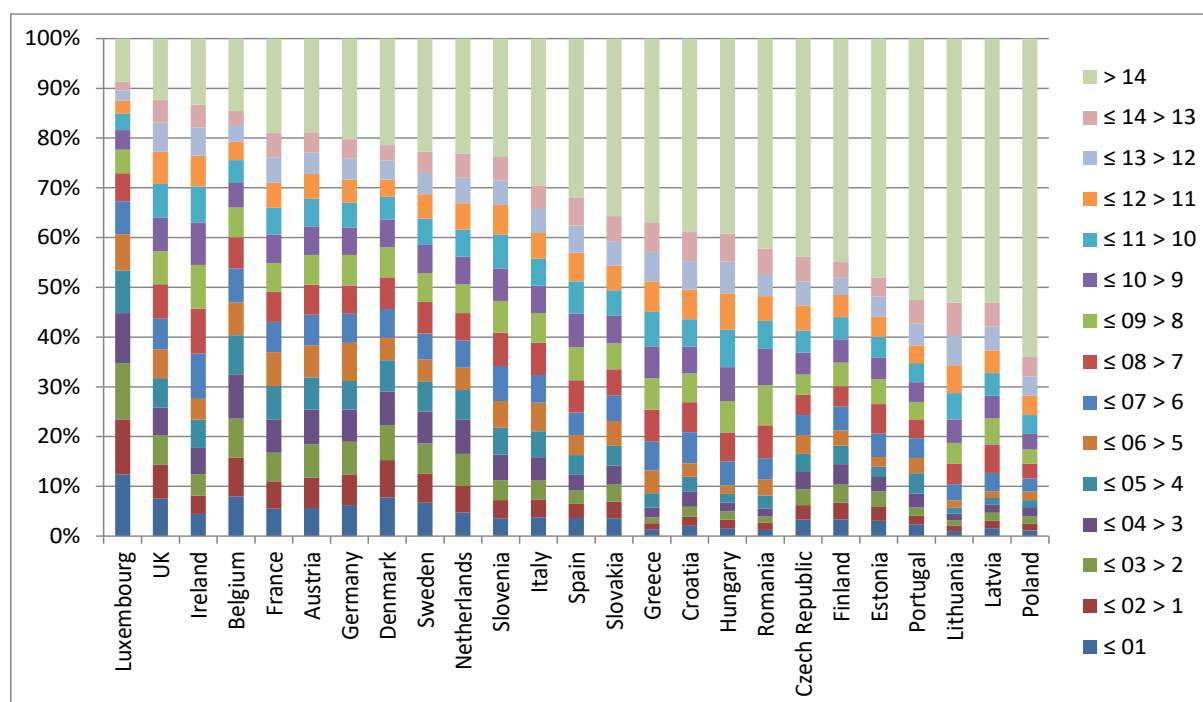
- Eurostat (Data set: road_eqs_carage) available for the age classes: < 2 years; $\geq 2 < 5$; $\geq 5 < 10$; $\geq 10 < 20$ (from 2013 onwards); ≥ 10 (until 2012); ≥ 20 (from 2013 onwards)
- ACEA

Even if the coverage of the data sets improved in recent years the level of details of these sources is limited. As we know from previous projects for similar aspects that it is extremely time consuming to investigate in national sources (and these national sources are again incomplete or it is necessary to purchase expensive national licences), we purchased a licence for data on the vehicle stock from IHS/ POLK with the following characterisation:

- 25 of EU-28 MS (excluding MT, CY, BG).
- 2 Registration types: Passenger car, light commercial vehicles
- 22 fuel types
- 7 year (2008 - 2014)
- 15 age classes (≤ 1 ; $> 1 \leq 2$; $> 2 \leq 3$; ... ; $> 13 \leq 14$; > 14)

Figure 3-8 displays the composition of the vehicle stock by age for the year 2014. This figure shows the differences in the share of newer respectively older vehicles across Europe.

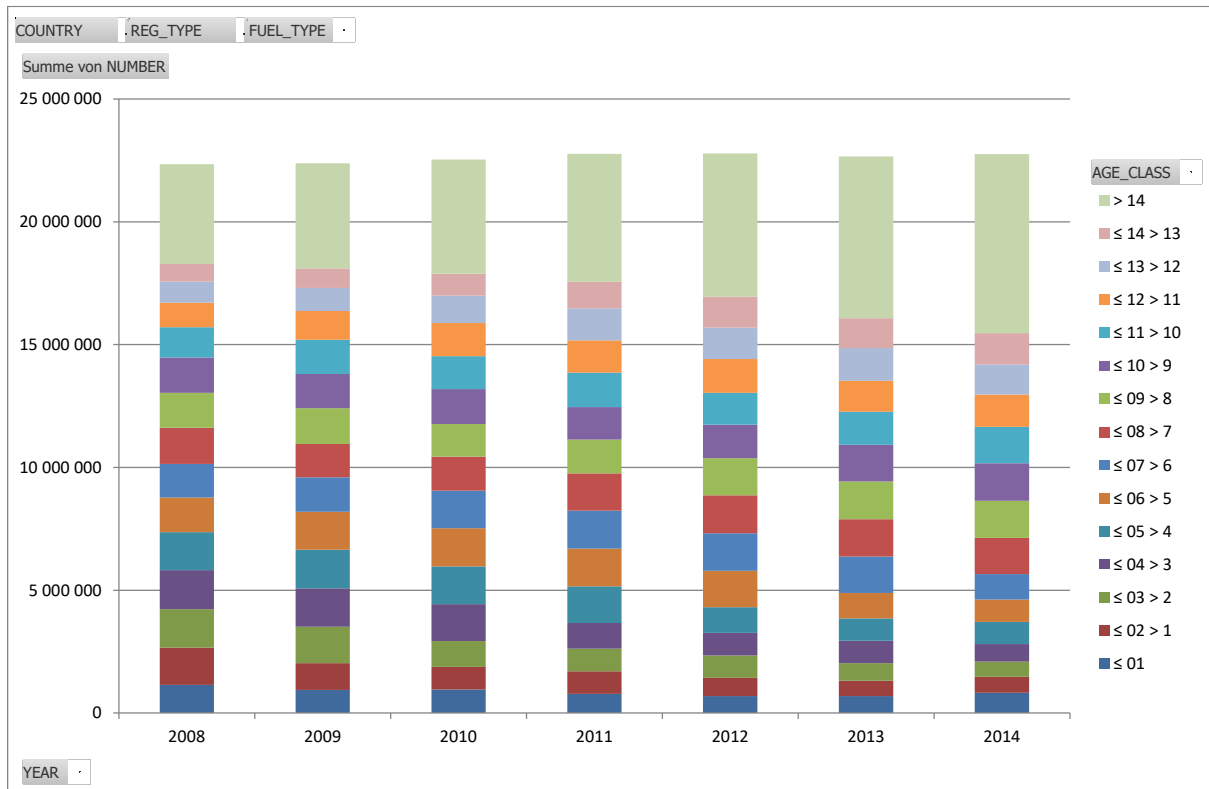
Figure 3-8: Composition of the vehicle stock by age for the year 2014, sorted by the share of vehicles older than 14 years



Source: HIS/POLK, compilation: Oeko-Institut e.V.

Figure 3-9 displays as example a data extract for Spain. The effects of the financial crisis after 2008 are detectable: Much less new vehicles are introduced to the stock in the subsequent years.

Figure 3-9: Exemplary data extract of the data on the number of vehicle stock (Spain; all registration types; all fuel types; 2008 - 2014; for the 15 different age classes)



Source: HIS/POLK, compilation: Oeko-Institut e.V.

However also the purchased data of IHS/ POLK has its quality limitations as for instance:

- Break in series for Lithuania: 2014 a cleansing of the register resulted in much less vehicles compared to 2013
- Break in series for Portugal: The change in 2011 to `effective data` caused more vehicles compared to 2010.
- Break in series for Poland: The data base HIS/ POLK changed its source of information for 2010 (to CEPIC) resulting in more vehicles compared to 2010.
- Unreasonable rise in stock for Poland from 2010 onwards: on request Polish responsible authority CEPIC confirmed that the data include data of vehicles not insured and without technical inspections. In result we estimate a volume of about 7 million vehicles which are not registered for the use on public roads any more. Insofar the data displayed in Figure 3-8 for Poland needs adjustment. We draw the attention of Eurostat and IHS/ POLK to this aspect.

3.2.5. Data on extra EU export of used vehicles

Extra EU export refers to EU transactions with all countries outside the EU, i.e. the rest of the world as displayed in Table 3-3. Since the customs might not notice the export of used vehicles if such information is not provided by the owner, the data on extra EU export might be incomplete to a certain extent.

Table 3-3: Extra EU exports of used vehicles in 2014

Member State	Extra EU export	Member State	Extra EU export
AUSTRIA	5 793	ITALY	24 065
BELGIUM	365 560	LATVIA	2 922
BULGARIA	13 927	LITHUANIA	99 680
CROATIA	5 162	LUXEMBOURG	27
CYPRUS	34	MALTA	1 111
CZECH REPUBLIC	6 501	NETHERLANDS	56 253
DENMARK	4 664	POLAND	27 385
ESTONIA	674	PORTUGAL	1 521
FINLAND	912	ROMANIA	942
FRANCE	34 739	SLOVAKIA	273
GERMANY	270 852	SLOVENIA	73 767
GREECE	877	SPAIN	16 080
HUNGARY	8 884	SWEDEN	10 575
IRELAND	3 015	UNITED KINGDOM	117 451

Source: Eurostat COMEXT Foreign Trade Statistics: reporter: MS EU 28; shipment to/ from extra EU; Product codes: 87032 190, 87032 290, 87032 390, 87032 490, 87033 190, 87033 290, 87033 390, 87042 139, 87042 199, 87043 139, 87043 199. Download 13 May 2016

Transit

Some countries (in particular Belgium and Germany) report difficulties in the allocation of extra EU exports for the case of transit within the EU before export (sometimes called Rotterdam or Antwerp-Effect). For instance used vehicles are shipped from Germany to Belgium and in the single-stage process or by custom agents from Belgium are systematically not (yet) recorded by the German customs statistics. In result there is an overshooting volume for the exports from Belgium and Netherlands and an underestimation of the exports from France and Germany. Germany reports exports of at least 116,732 used cars in vehicle class M1 for 2013, last registered in Germany, were exported via Belgium but not included in the German extra EU statistics.

Possibly the Implementation E-Customs Decision 70/2008/EC on a paperless environment for customs and trade in EU by 2020 (with reference to the Union Customs Code, Regulation (EU) 952/2013) might reduce this misallocation of the exports of used vehicles.

3.2.6. Data on extra-EU import of used vehicles

Extra EU import refers to EU transactions with all countries outside the EU, i.e. the rest of the world as displayed in Table 3-4. However the volume of such imports is much less compared to the export so in result most of the EU MS have a net export of used vehicles.

Table 3-4: Extra EU imports of used vehicles in 2014

Member State	Extra EU import	Member State	Extra EU import
AUSTRIA	1 871	ITALY	1 464
BELGIUM	2 930	LATVIA	592
BULGARIA	9 168	LITHUANIA	20 198
CROATIA	677	LUXEMBOURG	15
CYPRUS	5 602	MALTA	4 471
CZECH REPUBLIC	1 330	NETHERLANDS	6 134
DENMARK	216	POLAND	7 675
ESTONIA	535	PORTUGAL	174
FINLAND	1 155	ROMANIA	321
FRANCE	4 249	SLOVAKIA	578
GERMANY	39 813	SLOVENIA	314
GREECE	141	SPAIN	2 618
HUNGARY	652	SWEDEN	6 432
IRELAND	1 867	UNITED KINGDOM	15 136

Source: Eurostat COMEXT Foreign Trade Statistics: reporter: MS EU 28; shipment to/ from extra EU; Product codes: 87032 190, 87032 290, 87032 390, 87032 490, 87033 190, 87033 290, 87033 390, 87042 139, 87042 199, 87043 139, 87043 199. Download 13 May 2016

3.2.7. Data on intra EU trade of used vehicle

As described and analysed in detail in the report 'European second-hand car market analysis'⁹, the data on intra EU trade of used vehicles is very incomplete. The reason for this incomplete reporting for the intra EU trade is that the reporting is not based on customs data but on reports by the traders. To limit the burden for the reporting of this intra EU trade the MS apply different thresholds for the exemption from the reporting. The trade of used vehicles is, at least for several countries, typically performed by smaller companies and the value of each item (used vehicle) is limited. In result most of the traders for intra EU trade of used vehicles are below the reporting threshold and not obliged to report. Table 3-5 displays the thresholds applied by the MS for imports (=arrivals) and exports (=dispatches).

Compared to the situation analysed in detail in 2011 the situation even worsened as the thresholds for all countries (except Malta) increased remarkably.

As a result of these circumstances the Foreign Trade Statistics (FTS) for used vehicles underestimates the volume of traded used vehicles between the MS of EU-28 to a very relevant amount and FTS is therefore not a reliable source for the calculation of national vehicles balance.

Table 3-5: Exemption thresholds applied in 2015 for intra EU trade

	In euro		In national currency ⁽¹⁾	
	Arrivals	Dispatches	Arrivals	Dispatches
Belgium	1 500 000	1 000 000		
Bulgaria	189 178	112 484	370 000	220 000
Czech Republic	320 000	320 000	8 000 000	8 000 000
Denmark	805 000	671 000	6 000 000	5 000 000
Germany	500 000	500 000		
Estonia	200 000	130 000		
Ireland	191 000	635 000		
Greece	150 000	90 000		
Spain	400 000	400 000		
France	460 000	460 000		
Croatia	235 000	130 600	1 800 000	1 000 000
Italy ⁽²⁾	200 000	200 000		
Cyprus	100 000	55 000		
Latvia	170 000	130 000		
Lithuania	290 000	215 000		
Luxembourg	200 000	150 000		
Hungary	337 000	337 000	100 000 000	100 000 000
Malta	700	700		
Netherlands	1 500 000	1 500 000		
Austria	750 000	750 000		
Poland	714 711	357 355	3 000 000	1 500 000
Portugal	350 000	250 000		
Romania	113 379	204 082	500 000	900 000
Slovenia	120 000	200 000		
Slovakia	200 000	400 000		
Finland	500 000	500 000		
Sweden	900 000	450 000	9 000 000	4 500 000
United Kingdom	1 873 800	312 300	1 500 000	250 000

⁽¹⁾ When the Member State does not belong to the euro area.

⁽²⁾ Since 2010 PSIs shall report statistical information for Intrastat if their intra-EU trade (for each flow) was above EUR 50 000 o in at least one of the previous 4 solar quarters.

Source: National requirements for the Intrastat system - 2015 Edition, Eurostat ISSN 2315-0815

3.2.8. Generic calculation of net import

Considering the resume above, that the FTS is not a reliable source for calculation of the national vehicles balances, a method is applied to calculate generic (net) import volumes. In a first step we calculate the EU scrappage rate and in a second step this average EU scrappage rate is applied for each MS and compared with the effective changes in the vehicle stock and the vehicle age from one year to the next year.

The methodology is the same as applied in the previous study on the second hand car market in Europe, carried out by Oeko-Institut in 2011⁹.

The aim of the methodology is to assess the annual net import of M1 and N1-vehicles for all MS both as percentage of the vehicle stock and as an absolute value.

Methodology for the calculation of the EU scrappage rate

The calculations were done by means of a model that assesses the evaluation of the vehicle stock and estimates the vehicle entries and exits of a certain age group into/out of the vehicle stock.

A crucial parameter of the model is EU average scrappage rate that refers to the effective scrappage only, i.e. vehicles that become ELVs due to breakdown or accident. The scrappage rate is described as a function of the vehicles age and the number of vehicles in the respective age class. Since extra EU imports and exports are also incorporated in the model the scrappage rate is calculated according to the following equation:

$$SCRAPPAGE_{n,m} = N_{n-1,m-1} - N_{n,m} + IMPORTS_{n,m} - EXPORTS_{n,m} \quad (4)$$

SCRAPPAGE Vehicle stock exits due to breakdown of the vehicles (end-of life vehicles);

N Number of vehicles of a certain age group in the vehicle stock;

IMPORTS Extra EU imports
(Eurostat COMEXT Foreign Trade Statistics);

EXPORTS Extra EU exports
(Eurostat COMEXT Foreign Trade Statistics);

Index *n* Reporting year;

Index *m* Age group of the vehicles.

Due to the lack of reliable data for Bulgaria, Malta, Cyprus and Romania, these countries were not considered in the calculations, keeping that way a consistency with the study from 2011. However, in contrary to the scope of the previous study, data for Croatia was included. The adopted time dimensions are 2005 to 2009 and 2010 to 2013. For the years 2009/2010 we observed massive incoherence resulting in non-plausible results, therefore this period is not considered.

Figure 3-10 shows the average scrap rate for EU-24 as a function of age for the defined two time dimensions. The POLK data are available for one-year age groups up

to 14 years of age. Vehicles aged 14+ years constitute one group are not displayed and have, inherent a scrappage rate of 100%.

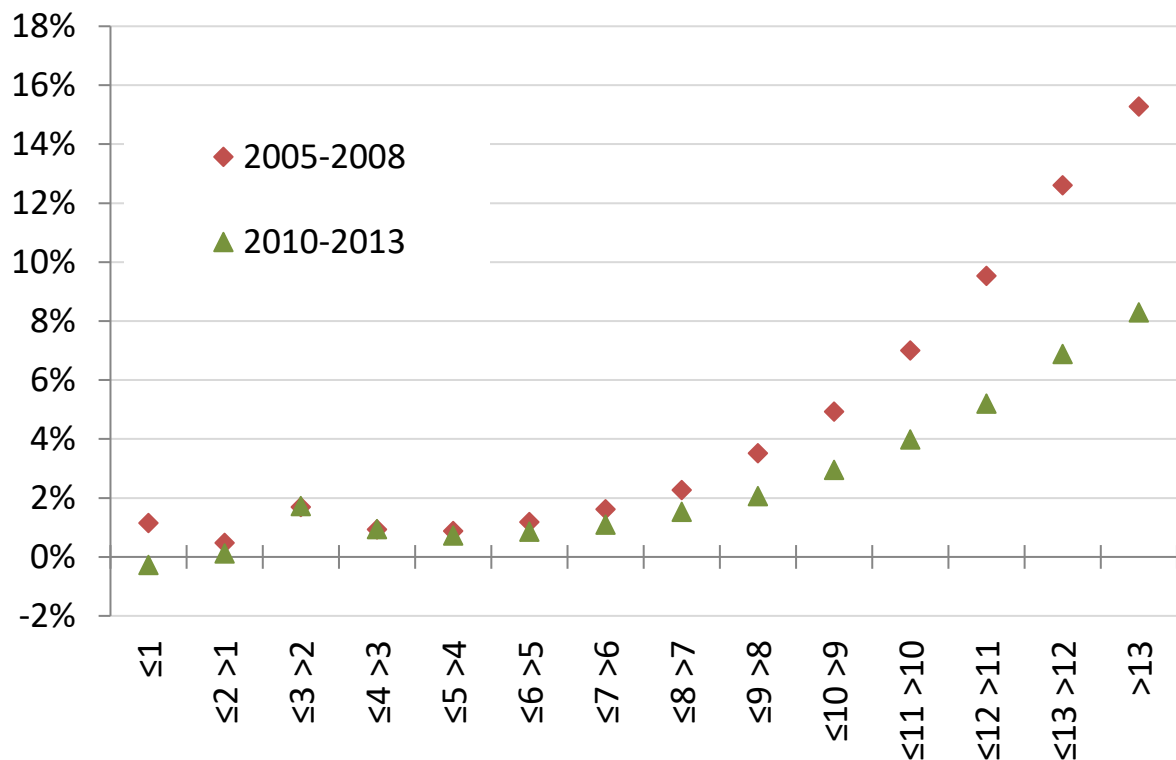
The outlier for the age class between 2 and 3 years for 2005 to 2009 was confirmed with the new data for the period 2010 to 2013. One hypothesis might be that this effect is caused by the export of leasing fleets (typically sold in an age around 3 years) to outside of EU (extra EU export) as the corrections for extra EU export is not detailed by age class but as an average for all vehicles in the respective year.

The calculated scrappage rate for the period 2010 to 2013 is, in particular for the older vehicles, lower than the result of the calculations for the period 2006 to 2009.

Different causes might apply:

- Stocks are not reported in a correct manner; For instance vehicles not allowed for use on public roads are not excluded from the stock (artificial effects caused by no coherent data).
- Effects of the financial crisis with the effect that more vehicles are used for a longer time within the EU.
- Use phase of vehicles is extended by other reasons (e.g. less mileage per year, demographic effects and quality of vehicle).

Figure 3-10: Average scrappage rates for EU in two time dimensions



Source: Model calculations, Oeko-Institut e.V.
17.01.10_Scrappage_rate_net_import_export_new_results_second_method.xlsx

Methodology for the calculation of the generic import of used vehicles

The generic net import of used vehicles is calculated for each age group where data is available. Exports are expressed as negative values.

The model applied is a stock-flow model where the number of cars in a specific country may be calculated as the number of vehicles the year before minus scrapped vehicles plus vehicles imported minus vehicles exported:

$$N_t^c = N_{t-1}^c * (1 - S_y) + I_y^c - E_y^c \quad (5)$$

Where

- N is the number of vehicles,
- c is an index for country,
- t is the year,
- S is the scrappage rate,
- I is imports of vehicles and
- E is the exports of vehicles.

The model operates with one-year age groups for vehicles up to 14 years of age.

The method has three relevant shortcomings:

- The scrappage rate is not country specific and does not consider country specific conditions which may have an influence on the scrappage rate like road conditions, drivers' behaviour (fatal crash).
- The data used for the calculation has several gaps and incoherence in detail, therefore it is necessary to calculate with average data.
- The results displayed refer to a period until 2013 only. The reason is that
 - data on ELV (from Eurostat) and in consequence the scrappage rate is available for 2014 only when drafting this section of the report¹⁶.
 - The data licence (POLK) on the vehicles stock, purchased at the beginning of the project, covers the year 2014 only. For calculating the imports and exports we need the vehicle stock of the subsequent year (so for 2014 the data for the year 2015).

¹⁶ The data on ELVs for 2015 are due for submission by the MS by the 30 June 2017. By February 2018 the data for 7 MS are not published yet.

Data sources

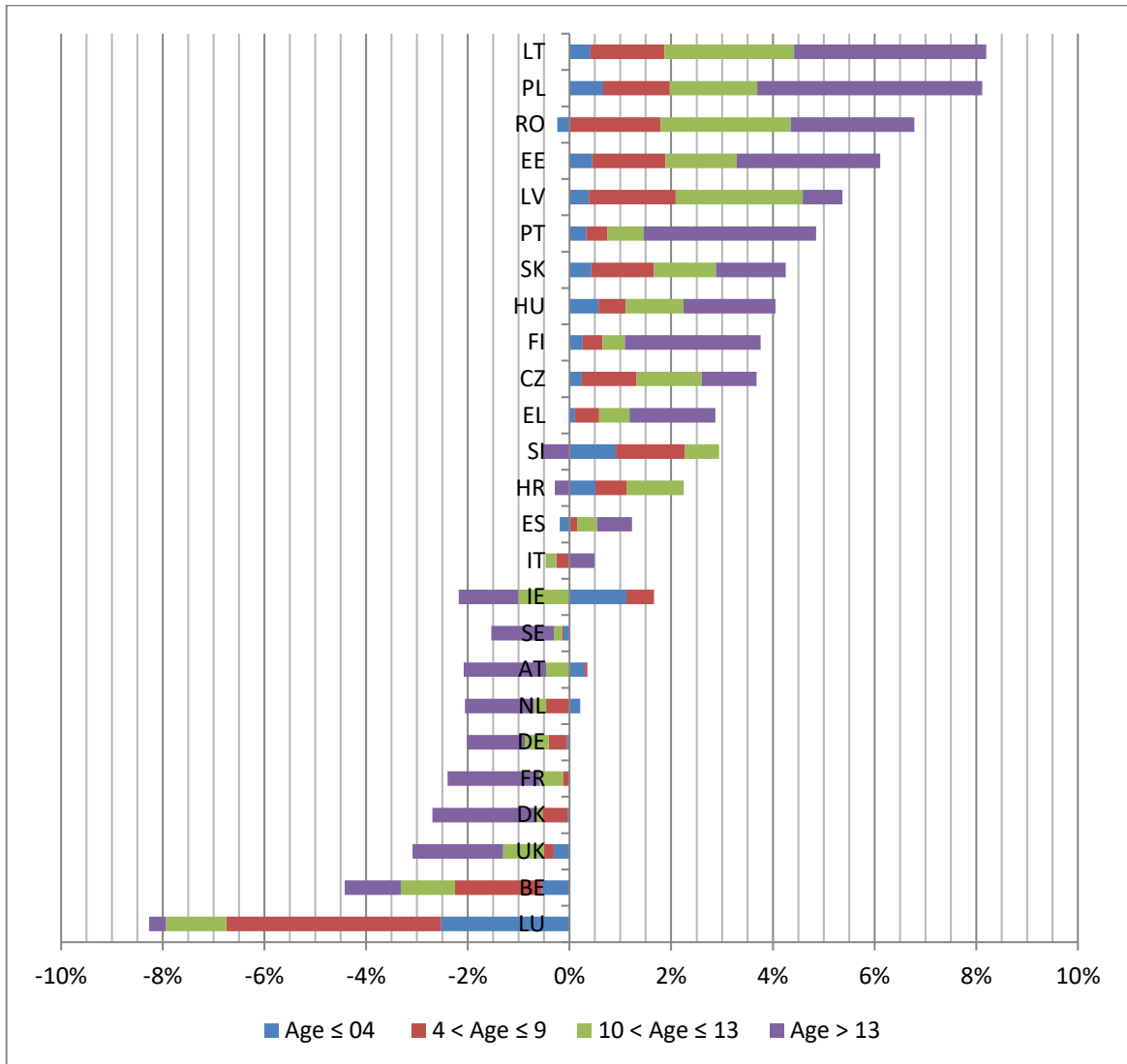
For the purpose of the assessment of cross-border trade of used vehicles within the EU the FTS (extra EU trade) and POLK data (vehicle stock of investigated countries for different age classes) was used. Since POLK data is inconsistent mainly between the years 2009 and 2010 due to the break in the series, the investigated period is from 2010 till 2013. The calculations cover 25 of the EU 28 countries, excluding Malta, Cyprus, and Bulgaria, since there are no data available in the POLK database for those MS. Data available from other sources for those three MS do not provide information for the age classes as required for the calculation with the model according equation (4) and (5).

Results of the generic calculations

Figure 3-11 represents net intra EU import of used vehicles in percent of the national vehicle stock by 4 age groups. The figure displays for instance for Ireland (IE) a net import for used vehicles of ≤ 9 years age. This net import represents 1.66% of the (total) vehicle stock. At the same time it displays for IE a net export (the negative values) for vehicles of ≥ 10 years age. This net export represents 2.18% of the (total) vehicle stock.

The calculations are performed for single years but due to license restriction of the data provider IHS/ POLK for the detailed data on the vehicle stock we cannot display the percentage by singly year but by age groups only. The negative values represent exports of vehicles.

Figure 3-11: Net intra EU import of used vehicles in percent of the national vehicle stock (average 2010-2013); Generic calculation with European scrappage rate



Source: Model calculations, Oeko-Institut e.V.

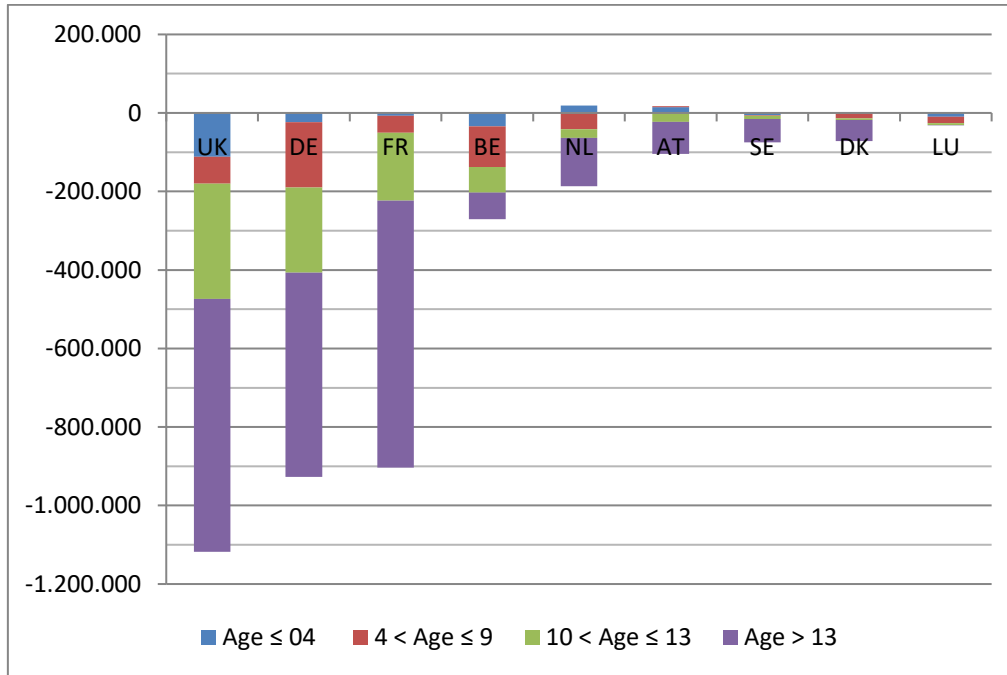
Note: Export displayed as negative figures;

17.01.10_Scrappage_rate_net_import_export_new_results_second_method.xlsx

Figure 3-12 shows the total average export of used vehicles by age groups of vehicles for the time period 2010-2013 for the main exporters.

Figure 3-13 displays the same for the main importers and Figure 3-14 displays the data for the moderate importers of used vehicles.

Figure 3-12: Net imports (negative values = exports), number of used vehicles by age group, average for 2010-2013; Main exporters

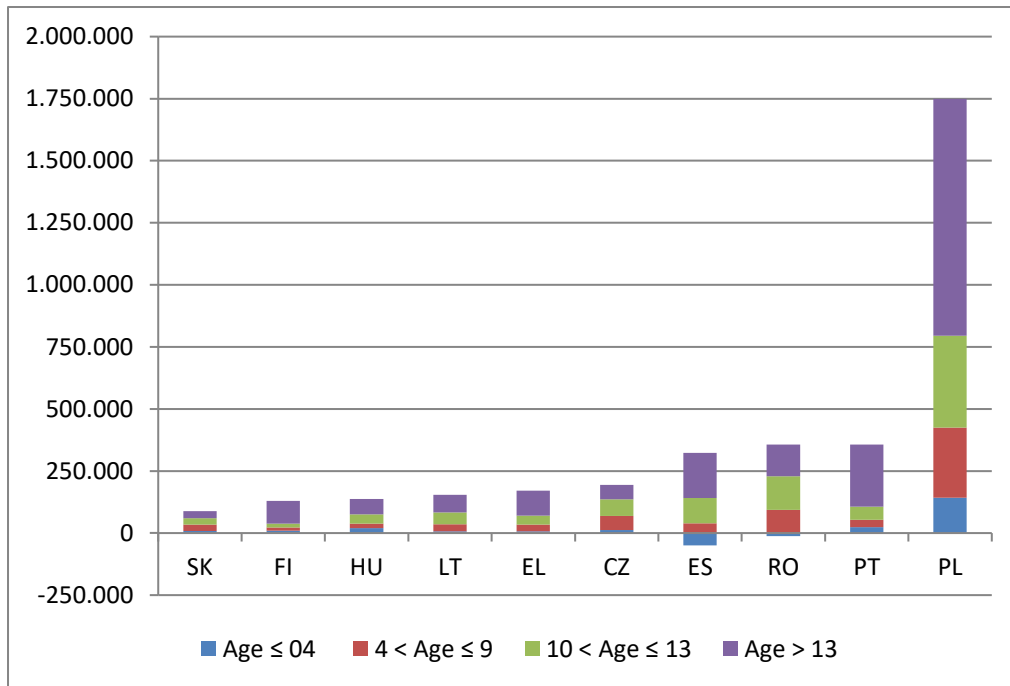


Source: Model calculations, Oeko-Institut e.V.

Note: Export reported as negative figures.

17.01.10_Scrappage_rate_net_import_export_new_results_second_method.xlsx

Figure 3-13: Net imports, number of used vehicles by age group, average for 2010-2013; Main importers

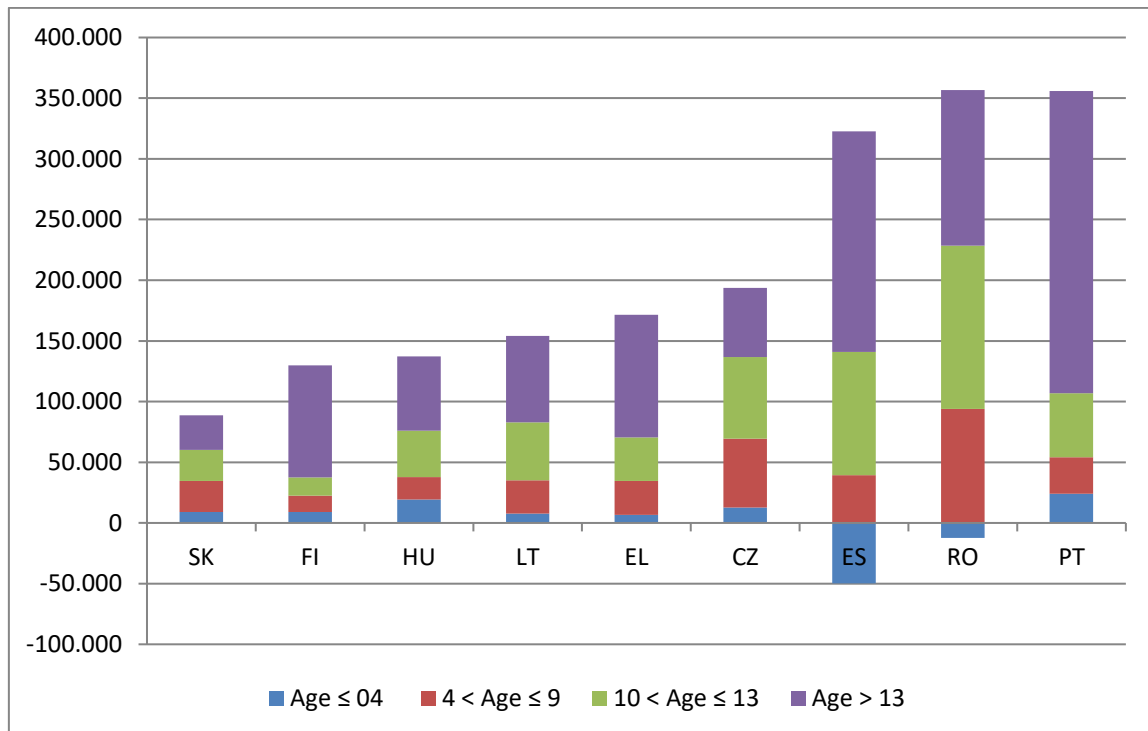


Source: Model calculations, Oeko-Institut e.V.

Note: Export reported as negative figures.

17.01.10_Scrappage_rate_net_import_export_new_results_second_method.xlsx

Figure 3-14: Net imports, number of used vehicles by age group, average for 2010-2013; Moderate importers



Source: Model calculations, Oeko-Institut e.V.

Note: Export reported as negative figures.

17.01.10_Scrappage_rate_net_import_export_new_results_second_method.xlsx

According to Article 1(3) of Commission Decision 2005/293/EC the MS are obliged to report on the national vehicle market. In this context Eurostat is asking for the imports and exports of used vehicles and ELVs. Despite the fact that the data generally is available to the national vehicle registers, Poland is the only MS who addressed the issue of the import of used vehicles and only a minority of the countries reported (at least in 2013) on the export of used vehicles.

Table 3-6 displays a comparison of data reported by countries with the results of the generic calculation. To compare the data it would be necessary to calculate the net import according to national sources (sum (1) to (4)). Only Poland provided all data to calculate such aggregate. The main observation is that a validation is not possible due to the fact that the MS did not provide all required data. However for Poland and for UK there is a discrepancy in the numbers which might need further investigations in direct communication with these MS. Both might be possible: the reported data on export and import are incomplete or the model calculation does not generate valid data by other inconsistency of data.

Table 3-6: Comparison of the generic data on net import used vehicles with data from national sources available (in 1000 vehicles)

Country	(1) exported to EU country	(2) exported to non-EU country	(3) imported from EU country	(4) imported from non-EU country	(5) Generic calculation (net import)
BE	n.a.	413	n.a.	n.a.	-270
DE	1 233	345	n.a.	n.a.	-927
ES	143	42	n.a.	n.a.	273
HR	< 1	<1	n.a.	n.a.	31
LT	5	137	n.a.	n.a.	154
HU	12	n.a.	n.a.	n.a.	137
NL	336	n.a.	n.a.	n.a.	-168
PL	17		706	6	1 750
PT	n.a.	< 1	n.a.	n.a.	356
FI	< 1	< 1	n.a.	n.a.	130
UK	327		n.a.	n.a.	-1 118

Source: Column (1) to (4): Eurostat: Quality report accompany the data submitted for the year 2013
Column (5) Oeko-Institut, model calculations (average 2010 - 2013)

3.2.9. Assessment of the total number of ELVs and unknown vehicles in each Member State (MS)

Methodology for the calculation

Referring to equation (1) in Chapter 3.1.1, the calculation for the unknown whereabouts per MS would be:

$$UNKNOWN_{MS,n} = NEW\ Reg_{MS,n} + Net_Import_{MS,n} - RAISE\ IN\ STOCK_{MS,n} - ELV_{MS,n} \quad (4)$$

Where

New Reg	is the number of registration of new vehicles in the reference year
Net_Import	Extra EU import - extra EU export + net intra EU import
Raise_in_Stock	Difference of the total number of vehicle compared to the previous year
ELV	end-of-life vehicles
Index MS	Member State
Index n	Reporting year

Data Sources

New Reg	Source: ACEA, Some missing data of minor relevance were added from other sources (Eurostat, POLK)
Extra EU import	See Table 3-4
Extra EU export	See Table 3-3
Net intra EU Import	See generic calculation in Chapter 3.2.8, net export is expressed in negative values
Stock	POLK
ELV	Eurostat

Results

Figure 3-15 and Figure 3-16 present the results of these calculations. The values for the unknown whereabouts are average numbers for the years 2010-2013, the values for the stock refer to the year 2013.

According to the obtained results, the highest total numbers of unknown vehicles are in Germany, Poland, Italy, Spain, and Portugal (between 400 000 and 1 200 000 vehicles in average between 2010 and 2013). However, having in mind the results of

the recently assessed value of missing vehicles within Germany¹⁷ of about 350 000 vehicles in 2013, the obtained results in this estimation for Germany (more than 1 200 000 missing vehicles) seem to be too high. For other countries like UK the model calculates negative values for unknown whereabouts. In fact it has to be admitted that results are not fully plausible.

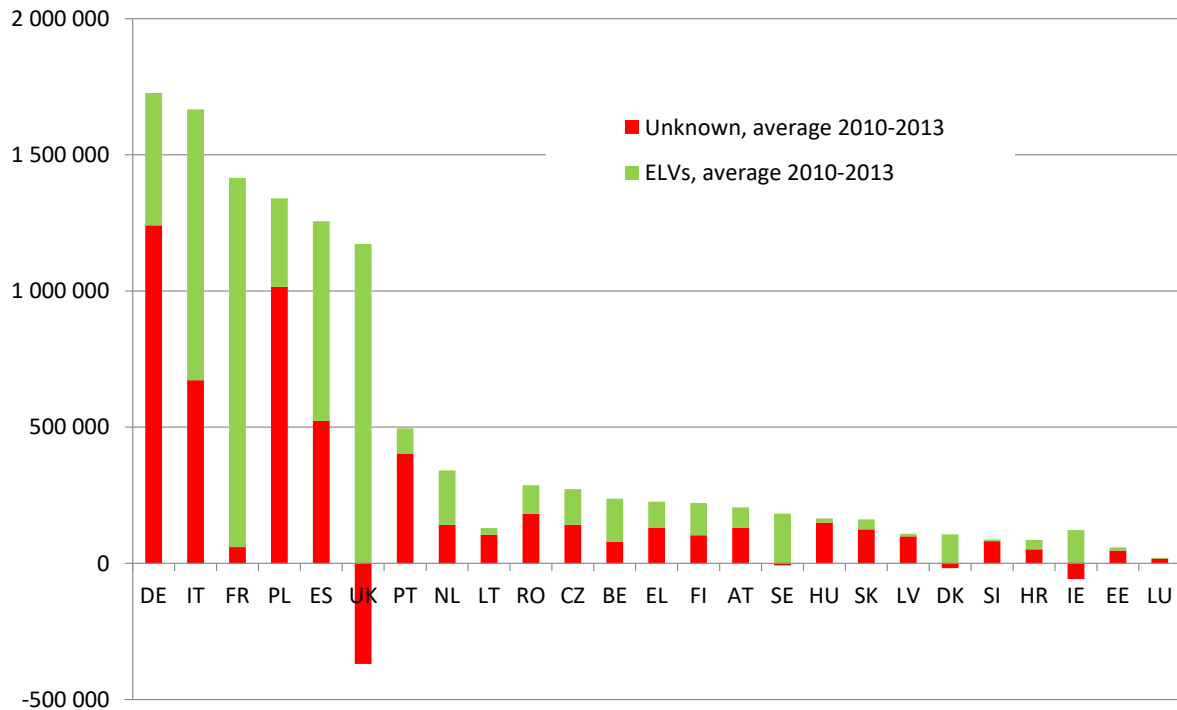
The possible lack of plausibility of results might be due to poor quality of detailed data, but also due to application of the average (European) scrappage rate over a certain period of time. This scrappage rate does not consider the influence on the scrappage rate according to the local conditions, e.g. quality of roads, standards of living and maintenance / repair costs. For instance higher use (many kilometres per year) and/or poor road conditions might reduce the live span of a vehicle or low maintenance/repair cost might expand the lifespan of a vehicle. Insofar the method is not well suitable to derive results per MS.

However, when looking at the more general results in Figure 3-16 the displayed tendency is in principle plausible: for countries with net import of used vehicles and, in result, a vehicle stock with higher average age, we expect a higher share of ELVs compared to the stock. In consequence the share of the unknown (red bar) simply is the difference to the ELVs reported to Eurostat.

The problems of plausibility do not question the results for the EU-28 as an aggregate (see Chapter 3.1) but simply demonstrate the problems to monitor the proper implementation of the ELV Directive effectively at the level of the MS with the given data and information available today.

¹⁷ Project performed by the Federal German Environmental Agency (2015-2016)

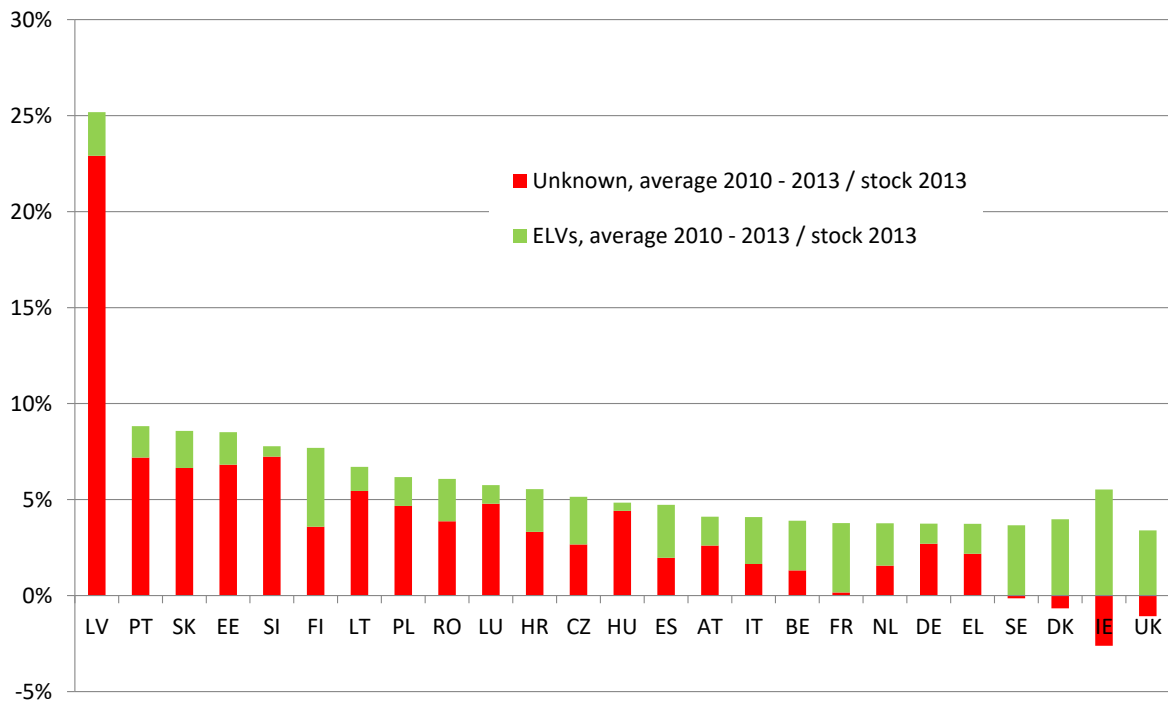
Figure 3-15: Estimated total number of ELVs and vehicles of unknown whereabouts in each MS – average numbers over years 2010-2013



Source: Model calculations, Oeko-Institut e.V.

Due to breaks in time series the average for LT is for 2010-2012 and for PT for 2012-2013

Figure 3-16: ELVs reported to Eurostat and estimated unknown vehicles (average 2010-2013) in relation to the countries vehicles stock (2013)



Source: Model calculations, Oeko-Institut e.V.

Due to breaks in time series the average for LT is for 2010-2012 and for PT for 2012-2013

Conclusions

It is not possible to calculate with generic models the exact number of vehicles with unknown whereabouts separately for each EU MS because of systematic deficits in data on vehicle registration and scrappage. These deficits do not question the results for the EU-28 as an aggregate (3 to 4 million vehicles with unknown whereabouts) but simply demonstrate the problems to effectively monitor the proper implementation of the ELV Directive at MS level with the given data and information available today.

Consequently, monitoring ELV Directive enforcement at a national level is currently not possible and needs additional data. In particular, it is not known by most national authorities if all ELVs generated within the country's territory are treated according to the requirements of the ELV Directive.

3.3. Other aspects possibly contributing to the problem of unknown whereabouts

3.3.1. Stolen vehicles

To get reliable numbers on stolen vehicles is difficult. Not all stolen vehicles are relevant for the `whereabouts of vehicles`, as vehicles found again after being stolen effectively do not matter. In addition we need to consider the scope of the ELV Directive referring to M1 and N1 vehicles only.

United Nations office on Drugs and Crime (UNODC) published data on motor vehicle theft at the national level for 2012¹⁸ as displayed in Table 3-7 including data for EU MS.

According to these data approximately 800 000 motor vehicles were stolen and reported to the police during the year 2012. Motor vehicles according to the UNODC definition include cars, motorcycles, buses, lorries, construction and agricultural vehicles and has insofar a broader scope than M1 and N1 vehicles. Private cars are defined by UNODC as motor vehicles excluding motorcycles, commercial vehicles, buses, lorries, construction and agricultural vehicles. This category might be less than M1 and N1. However for both it is not evident if the figures reported by UNODC refer to all stolen cars during the course of the year or to the vehicles stolen and not found again. Most likely the figures refer to the vehicles stolen, regardless if found again or not.

The German Criminal Statistics report ca. 34 000 stolen passenger cars for 2012, thereof ca. 19 000 not found again (about 60 %). Compared to the number of new registered vehicles in Germany this represents a small amount of less than 1% only.

For EU-28 one might assume, that 70% of the motor vehicles (including motorcycles, buses, lorries, construction and agricultural vehicles) might match with the M1 and N1 criteria. If 40% of these are found again (and insofar do not contribute to the missing whereabouts) the following calculation applies:

*Assumption for M1 and N1 stolen and not found again: $800\,000 * 0.7 * 0.4 = 224\,000$.*

Taking this number in consideration it would represent 5 to 6% of all missing vehicles within the EU (3.4 – 4.6 million) or 1.7% of the new registrations in 2012 or 0.08% of the vehicle stock in 2012. So the aspect is a relevant crime but does not contribute much to the number of missing whereabouts. However this assumption is very vague and might be much more relevant for single countries.

¹⁸ www.unodc.org/documents/data-and-analysis/statistics/crime/CTS2013_Motor_vehicle_theft.xls

Table 3-7: Motor vehicle theft in 2012

Country	Motor vehicle theft	Theft of private cars	Stolen and not found again during the year
Belgium	17 126	11 725	
Bulgaria	3 082		
Czech Republic	11 127		
Denmark	10 351		
Germany	70 511	34 176 ^x	18 554 ^y
Estonia	620		
Ireland	8 392		
Greece	31 166	11 145	
Spain	67 933	35 131	
France	178 200	111 305	
Croatia	1 361	588	
Italy	196 589	126 627	
Cyprus			
Latvia	910	778	
Lithuania	1 724	1 383	
Luxembourg			
Hungary	7 740	5 636	
Malta	306		
Netherlands	19 930	12 575	
Austria	4 446	2 306	
Poland	16 230		
Portugal	15 900		
Romania	1 627	1 627	
Slovenia	539	419	
Slovakia	2 546	2 462	
Finland	8 815		
Sweden	28 926	11 146	
UK	87 661		
Total	793 758		

'Motor Vehicles' includes all land vehicles with an engine that run on the road, including cars, motorcycles, buses, lorries, construction and agricultural vehicles

'Private Cars' means motor vehicles, excluding motorcycles, commercial vehicles, buses, lorries, construction and agricultural vehicles

Source: United Nations office on Drugs and Crime, accessed 2017-02-22

^x no data from UNODC available, alternative source: Kraftfahrtbundesamt (KBA), KFZ-Kriminalität, 2013: All passenger cars reportedly stolen during the course of the year;

^y All passenger cars reportedly stolen during the course of the year and by the end of the year not found. Source: KBA 2013

3.3.2. Vintage vehicles kept by the car enthusiasts on private properties

The number of vintage vehicles kept of each year by the car enthusiasts to private properties is not available in national or European statistics. Nevertheless, it can be assumed that this number is of minor relevance than the number of vehicles stolen and not found within the EU.

3.4. Exemplary national activities to assess the problem of unknown whereabouts and to fight against illegal treatment of ELVs

In order to assess the size of illegal export and dismantling not captured in statistics, MS perform national studies/ investigations or establish national programs/ schemes in order to e.g. improve the ELVs collection rate or to advance the information flow between players of ELV system.

The following examples introduce the kind and also the size of existing problems of illegal export and dismantling of vehicles/ ELVs. Since these activities are not performed by each MS, quantitatively assessing the scale of the challenge for the whole EU is not possible. It has to be assumed that successfully and systematically performed actions to chase illegal activities will decline the number of missing vehicles in the EU.

3.4.1. Germany

The objective of the recently published German study¹⁹ is to develop a proposal, including legal instruments, to improve the data situation on the whereabouts of ELVs and to define the fate of these vehicles. Investigations focused on identifying the fate of deregistered vehicles in order to assess the possible 'statistical gap'. First results of this study were published in the context of the annual reporting to the EC¹⁹.

Since 2007 the German vehicle register authority records an 'off-road notification' called de-registration however not distinguishing between 'temporary' and 'permanent'. If a vehicle has been de-registered for more than seven years, all relevant data of the vehicle is irrecoverably deleted from the Central Vehicle Register. The ownership of a vehicle is not recorded in the Central Vehicle Register. A change of holdership is not entered for de-registered vehicles. For vehicles that have been suspended (e.g. not roadworthiness), a change of holdership is to be entered in the Central Vehicle register.

Within the mentioned project¹⁹ an approximate deregistration rate (that originally was set for 2007) was recalculated and assumed to be about 33.3 % for 2013 instead of previous 40 %. The recalculated number (with the updated deregistration rate) of off-road notifications and de-registrations in 2013 is about 0.4 million smaller than the one calculated with the previous deregistration rate.

¹⁹ Sander/ Wagner/ Sanden/ Wilts, Development of proposals, including legal instruments, to improve the data situation on the whereabouts of end-of-life vehicles, UBA-Text 50/2017.

The sources of data for determining the number of exports of used vehicles from Germany into other EU-countries are: the re-registration statistics from the Federal Motor Transport Authority (KBA)²⁰, and the foreign trade statistics of the Federal Statistical Office. As a result of the data quality assessment, it was concluded that the previous evaluation of the above-mentioned sources was incomplete. Consequently, a factor of 6.3 was estimated, by which the re-registration statistics exceed the foreign trade statistics. That means that by applying this factor to the foreign trade data for the countries, which have incomplete re-registration statistics, it is possible to estimate for Germany the maximum number of used vehicles exported with re-registration. As a result, it is assumed that about 140 000 vehicles exported into other EU-countries were not previously covered by the statistics in 2013.

The authors of the German study stated that transits of used vehicles from Germany via another EU country into a non-EU country are not always covered by the non-EU foreign trade statistics. Additionally, used vehicles from Germany, which are exported in the single-stage process or exported by customs agents from another EU MS, are in general not recorded by the German customs statistics, hence are not covered by the foreign trade statistics. In result, it was assumed that additionally about 260 000 used vehicles were exported to non-EU in 2013. These vehicles were not included in the foreign trade that stated the export to non-EU of about 390 000 vehicles in 2013.

The above described investigations conclude to recalculate the number of vehicles of unknown whereabouts and in the effect to decline it from about 1.18 million to 0.35 million in 2013. For 2014, applying the same assumptions, the 'statistical gap' is reportedly 0.54 million vehicles. The report recommends quite a number of different proposals to close the statistical gap and to identify illegal treatment sites.

3.4.2. France

In order to combat the illegal vehicle treatment facilities of ELVs, France has set up since 2013 a national action plan against illegal sites and activities²¹. In the frame of this plan a joint organization of inter-ministerial control operations at national and local level were formed. The objectives of the action are to:

- Integrate forces in the strategic program for local environmental inspections;
- Maximize the action by integrating all points of irregularity (environmental, fiscal, social related to hidden work);
- Promote synergies between administrative and penal actions.

The main objective of the inspections is to verify if the operating conditions of the site are in accordance with environmental regulations²². Since 2012 the number of identified illegal vehicle treatment facilities has increased from 265 in 2012, to 480 in

²⁰ The data originates from an notification process between MS regarding the re-registration of motor vehicles previously registered in another EU MS. For more details please refer to Annex_8_08 (Kohlmeyer, UBA, Germany: REGINA – making use of re-registration information to clarify used vehicle exports)

²¹ The French authority launched this program in pilot areas a year before

²² Presentation of representative of the French ministry of Environment, Energy and Sea given during the stakeholder workshop (21.11.2016), see Annex_3_3_20

2013, to 461 in 2014 and to 534 in 2015. The inspections resulted in the closing of 100 illegal facilities.

3.4.3. United Kingdom

For the UK, it is important that the registered keeper of a vehicle which is kept off the public UK roads - makes an Indefinite Statutory Off Road Notification (ISORN). The ISORN was introduced in December 2013 and replaced the SORN declaration that was made by a keeper on annual basis. The UK representatives²³ marked that it is too early to determine whether this change will cause a continuous rise in the number of vehicles with ISORNs which might be suspected to be exported or dismantled without issuing CoD, instead of being kept off the public UK roads as intended.

UK authorities conducted detailed inspections in the sector and about 1 000 illegal waste sites were investigated in 2015. As a result, out of them 989 sites had been stopped, whereof 48 were classified as high risk sites. According to current information²⁴ there are currently 148 active illegal waste sites at the end of March 2016.

Other kind of investigation completed in England is trading of spare parts sold on the internet. It was found that nearly 50 % of the examined selling platforms did not have required permission. The intention is to use a number of interventions to disrupt and prevent illegal activity and roll out a wider programme.

Moreover, the British Environment Agency believes that some by accident damaged vehicles not being repaired and used as vehicle²⁵, but being sold to buyers and subsequently dismantled illegally in the UK or shipped abroad for dismantling.

3.4.4. Denmark

In the year 2000 Denmark started an ELV collection scheme up to provide a pay-out to citizens who handed over an ELV to an authorised treatment facility (ATF)²⁶. The reasons for implementing the ELV scheme in Denmark were e.g.:

- ELVs were often left in public places to environmental and aesthetic detriment;
- The ATFs were imposing charges for their service due to e.g. low steel price low cost;
- The mentioned costs were carried by the last owner only, what is not in accordance with the polluter pays principle.

The economic incentive of the Danish ELV scheme is an ELV fund held by Danish Inland Revenue (SKAT). It is financed from the tax on liability insurance payed by

²³ Presentation of representative of the Driver and Vehicle Licensing Agency (DVLA), Strategy, Policy and Communications Directorate – Joy McCarley – given during the stakeholder workshop (21.11.2016), see Annex_3_3_16

²⁴ Presentation of representative of the British Department for Environment Food & Rural Affairs – Paul Hallett – given during the stakeholder workshop (21.11.2016), see Annex_3_3_17

²⁵ According to British law: accident damaged vehicles that are written off by insurance companies categorised as Cat C & D are able to be repaired and used as used as vehicles, so they are not waste unless the intention is to dismantle them

²⁶ Presentation of representative of the Ministry of Environment and Food of Denmark, Environmental Protection Agency – Jens Michael Povlsen – given during the Expert Meeting in Brussels (22.11.2016)

every owner on annual basis. The current annual rate is 85 DKK (Danish Krone) and is lower than a year before 101 DKK). In 2013 it was 65 DKK.

The expenses of ELV scheme in Denmark are covered from the mentioned ELV fund. Additionally, each last vehicle owner that delivers a vehicle to the ATF receives a pay-out. Since the beginning of 2017 its high is 2 200 DKK per vehicle and is higher than the one in a previous year (1 500 DKK). The 2013 pay-out was 1 750 DKK.

The increase of pay-out and simultaneous decrease of annual rate of tax on liability insurance is due to the findings of external report on the ELV sector in Denmark. They show that approximately about 20-25 % of ELVs in Denmark are missing. About 50 % of them are scrapped illegally, 40 % are exported illegally, and further 10 % are left on public and private land. Furthermore, the authors of mentioned study stated that the size of the ELV pay-out has a significant impact on choice of disposal route. In case of Denmark, the reduction in pay-out in 2014 affected a significantly drop in legally collected vehicle. In conclusion, the most significant factors that influence a disposal choice were: size of pay-out, price of steel scrap, and the price of spare-parts.

Moreover, the Danish Environmental Protection Agency (EPA) assumes that from 117 000 delivered CoDs in Denmark about 2 000 are not legally issued.

The Danish EPA in corporation with the ATFs held in 2013 several workshops for around 60 inspection officers from local authorities. It also performed national campaign focusing on the issue of illegal ELV collection. Additionally, EPA will perform on-site inspections in order to verify their legality. In the future it is also planned that EPA will prepare two guidance documents on 'classification of ELVs in an export situation' and on 'current treatment of ELV and how to inspect for it'. It is expected in the result of the mentioned EPA activities the percentage of missing vehicles will decrease from 20-25 % to 10 %.

3.4.5. Netherlands

The typical characteristic of the Dutch vehicle registration is the so called 'holdership' concept. That means the vehicle obligations in terms of taxation, inspection and insurance are related to holding the vehicle, not its use. For example a vehicle must appear in the registration system without interruption from the cradle (admission) to the grave (demolition or export)²⁷. The motor vehicle tax (the Dutch abbreviation is mrb) is due each year for the use on public roads and not paid if the owner does not drive/ parks the vehicle on public roads. The owner can apply for a suspension of the registration for the use on public roads. However this application for suspension of the registration for the use on public roads must be repeated for each year in connection with a small administrative fee. Changes in ownership or export or if the car becomes an ELV and a CoDs is issued must be reported to the vehicle register. In result the Dutch authorities are convinced to track the vehicles and ELV well.

²⁷ The vehicle chain in Europe A Survey of Vehicle and Driving Licence Procedures, Country report for the Netherlands, 13.09.2016.

In the Netherlands an online ELVs monitoring system exists to allow exchange information between actors of the ELV system²⁸. Thanks to the existing system the ATFs inform the Dutch Vehicle Authority (RDW) as well as the ARN online about the issued CoD. As soon as a pre-treated ELV is delivered to the shredder, the information about received ELV is delivered online by the shredder operator to the ARN. There also occurs an online information flow between ARN and post-shredder treatment plant (PST).

Nevertheless, the Dutch authority examined the track of exported vehicles, once their increase rose significantly over the years. Analysis of the figures points out two causes. One is that many young cars are being exported. Second, a large number of older vehicles are registered for export without actually leaving the country. According to the current information the future of 30 000 vehicles from 277 735 vehicles officially reported for the export from the Netherlands is not known. The relevant authority is planning to perform further investigation in order to define what happened with the missing part.

3.4.6. Spain

Temporary deregistration is valid for one year and for any renewal needs to be requested again. The environmental authorities cooperate with the registration authorities, for instance in scrutinising the list of temporary deregistrations to ensure that they are not linked to illegal export. Authorised Treatment Facilities (ATFs) have to depollute the deregistered vehicle within 30 days and to issue a Certificate of Destruction (CoD); copy of which has to be kept for five years and then can be destroyed by the ATF.

With regard to spare parts removed from ELVs, authorities ask for a certificate by the ATFs ensuring that the spare parts are ready to be reused. On exports of an ELV, it is permitted to export spare parts from ELVs, but not the entire ELV, even depolluted, so to avoid cases where the ELV is exported to third countries where it is repaired and then re-imported as used vehicle.

3.4.7. Italy

Italy has an ownership tax. When a vehicle changes hands, this transaction is registered in the national public vehicle register.

²⁸ Presentation of representative of ARN – Janet Kes – given during the stakeholder workshop (21.11.2016), see Annex_8_07

4. Identified causes for the observed failure to demonstrate good coverage / compliance with the ELV Directive.

4.1. Vehicles are not well tracked by MS

This applies in particular for:

- Trade of used vehicles within the EU (intra EU trade) and the subsequent re-registration in the country of destination;
- A situation where a used vehicle is shipped (possibly with the intention of the exporter to repair, sell and reregister it) to another MS but at the end not re-registered at its destination and finally becomes an ELV. For these cases no stipulations exist to ensure a data exchange on the appropriate treatment (and establishment of a CoD) between the relevant authorities of the involved MS.
- Temporary deregistration/ suspension of the registration: several MS lose track of the owner and do not have any incentive or penalty system in place to encourage the owner to follow the legal requirement. The owner consequently does not need to send export documents or a Certificate of Destruction to the relevant authorities as it simply makes no difference for the owner.
- Extra EU export is monitored better than intra EU trade; however, the effects of transit (Rotterdam / Antwerp effect) need particular attention.

4.2. Illegal operation of dismantling for example:

- National inspections of the vehicle maintenance/ repair/ scrappage sector in UK and France indicate that there is a high number of illegal depollution and dismantling carried out by not certified operators.
- France identified more than 500 illegal sites in 2015.
- The UK identified 1 000 illegal waste sites in 2015. Of these, 989 sites had been stopped, whereof 48 were classified as high risk sites.
- For other MS, such detailed inspections are not known.

4.3. Missing incentives to make it attractive to deliver ELVs to collection points / authorised treatment facilities

Some examples of countries which do have incentives are:

- In the Netherlands the owner has the option to keep his vehicle on private ground. No motor vehicle tax (the Dutch abbreviation is mrv) is due during this period. However he must renew the application to keep his vehicle on private ground each year in combination with an administrative fee unless a CoD or a certificate of export is demonstrated to the registration authorities.
- Denmark: a refund system is in place where the last owner gets the refund upon delivering the ELV to collection points / authorised treatment facilities.
- The UK: the Statutory Off Road Notification (SORN) is valid for one year only and needs to be renewed annually. However, the situation changed in 2014 and the registered keeper of a vehicle kept off public UK roads makes an Indefinite Statutory Off Road Notification (ISORN) only. It is too early to determine whether this change will cause a continuous increase in the number of vehicles with ISORNs

which might be suspected to be exported or dismantled without issuing CoDs instead of being kept off the public UK roads as intended.

- For other MS it is known that the missing incentives to deliver vehicles to the collection points/ authorised treatment facilities are a main reason for ‘statistical gaps’ and possibly illegal treatment in the MS. For instance, in Germany the number of ELVs treated in 2009, when the scrappage premium became effective, was around 1.8 million ELVs. In the years before and after the premium, the number of ELVs was reportedly between 0.4 and 0.5 million vehicles only. For years other than 2009 the last owner has no incentive to care for a CoD.

5. Interviews with selected stakeholders

Table 5-1 displays the list of interviewed selected stakeholders with the date of the talks. The obtained information from individual discussions was supportive for the preparation of the questionnaire for the public consultation as displayed in the next chapter.

Table 5-1: Interview partners for consultation

Country	Date	Institution	Name
France	16.03.2016	ADEME	Eric Lecointre
Germany	15.01.2016	German Environment Agency (UBA)	Regina Kohlmeyer
Italy	13.04.2016	ISPRA	Valeria Frittelloni
Poland	15.03.2016	Ministry of Environment	Anna Adamczyk-Gorzowska
Poland	06.04.2015	Chief Inspectorate of Environmental Protection	Joanna Nerik
Poland	04.05.2016	Chief Inspectorate of Environmental Protection	Katarzyna Chmielewska
Poland	06.04.2016	Chief Inspectorate of Environmental Protection	Przemysław Kurowicki
Poland	05.04.2016	Ministry of Infrastructure and Construction	Łukasz Mucha
Poland	05.04.2016	Ministry of Digital Affairs	Dorota Cabańska
Spain	13.04.2016	Ministerio de Agricultura y Pesca, Alimentación y Medio Ambiente	Santiago Dávila Sena
United Kingdom	16.03.2016	Department for Environment Food & Rural Affairs	Paul Hallett
United Kingdom	16.03.2016	FAB Recycling Ltd	Jason Cross
The Netherlands	18.03.2016	ARN	Janet Kes
The Netherlands	17.03.2016	ARN	Pieter Kuiper
Belgium	17.03.2016	Febelauto	Fredericq Peigneux
Sweden	17.03.2016	BIL	Anna Henstedt
Sweden	16.03.2016	BIL	Åsa Ekengren
	22.04.2016	ACEA	Tobias Bahr
	13.04.2016	Opel GM	Kai Siegwart
	13.04.2016	Volkswagen	Dieter Schmid
	13.04.2016	EGARA	Henk Jan Nix

6. Public consultation

The 'Public consultation on potential measures to improve the implementation of certain aspects of Directive on end-of-life vehicles, with emphasis on vehicles of unknown whereabouts' was open for twelve weeks from 29 June to 21 September 2016.

The objective of this public consultation was to receive the views of stakeholders concerned with the topics of the consultation. The consultation and all related documents are accessible via the consultations homepage: elv.whereabouts.oeko.info.

The online survey covers 6 topics below:

1. Keeping track of vehicles within the EU (intra EU trade);
2. Methods to achieve more complete reporting on extra EU export and ways to distinguish between exporting ELVs vs. used vehicle;
3. Enforcement techniques to reduce illegal dismantling of ELVs at dealers and repair shops (garages) and actions to improve ATF compliance;
4. Public awareness and incentives for ELV tracking and environmental risks;
5. Aspects to improve coverage and data quality when reporting on ELVs (possible revision of the Commission Decision 2005/293/EC);
6. Persistent Organic Pollutants (POPs) and ELVs.

For each of the topics an introduction is published with 'background information' derived from the assessment of the current situation at that time (June 2016), 'key issues' and a section with 'suggestions' where the participants are asked, if the suggestions are supported or not. A final section to each topic provides the option to the participants to address 'additional suggestions' for the topic in question. The pdf version of the complete questionnaire, including introduction, background, key issues, and suggestions is attached in Annex 6_01.

6.1. Number of contributions and characteristic

In total the on-line survey was accessed 570 times.

A total of 134 responses were successfully submitted and 3 responses additionally submitted by email. These three responses were included in the numerical statements but not published as officially submitted responses.

13 additional comments were emailed, mainly containing comments about the ELV whereabouts public consultation questionnaire from online participants, but also with a couple position papers.

Out of the 137 considered responses 10 indicated that their contribution cannot be published, 46 mentioned that their contribution can be published anonymously and 81 indicated that the contribution to the questionnaire can be published including personal information respectively the name of the represented organisation.

As displayed in Table 6-1, 18 responders from 17 different countries declared themselves as representatives of a MS, a public authority, a regional or local competent authority by MS.

Table 6-1: Number of responds from representatives of a MS, a public authority, a regional or local competent authority by MS

Country	Number of responds from representatives of a MS, a public authority, a regional or local competent authority
Austria	1
Belgium	1
Czech Republic	1
Denmark	1
Estonia	1
Finland	1
Germany	1
Ireland	2
Lithuania	1
The Netherlands	1
Poland	1
Portugal	1
Romania	1
Spain	1
UK	1
Norway	1

As displayed in Figure 6-1, 28 responders declared themselves as 'European Citizen'. These responders are representatives of 6 MS. 21 responses were submitted by European citizens from the UK. As detectable from the personal data at least half of these responders from UK are actually dismantlers, recyclers and or dealers of used spare parts. It seems that commercial interest of the responders of this category should not be neglected.

Figure 6-1: Number of responds from European citizen by MS

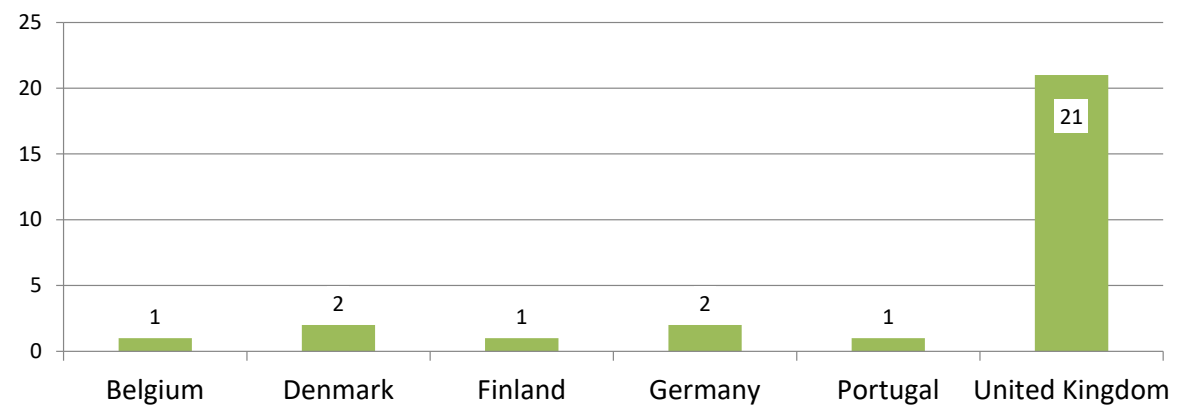


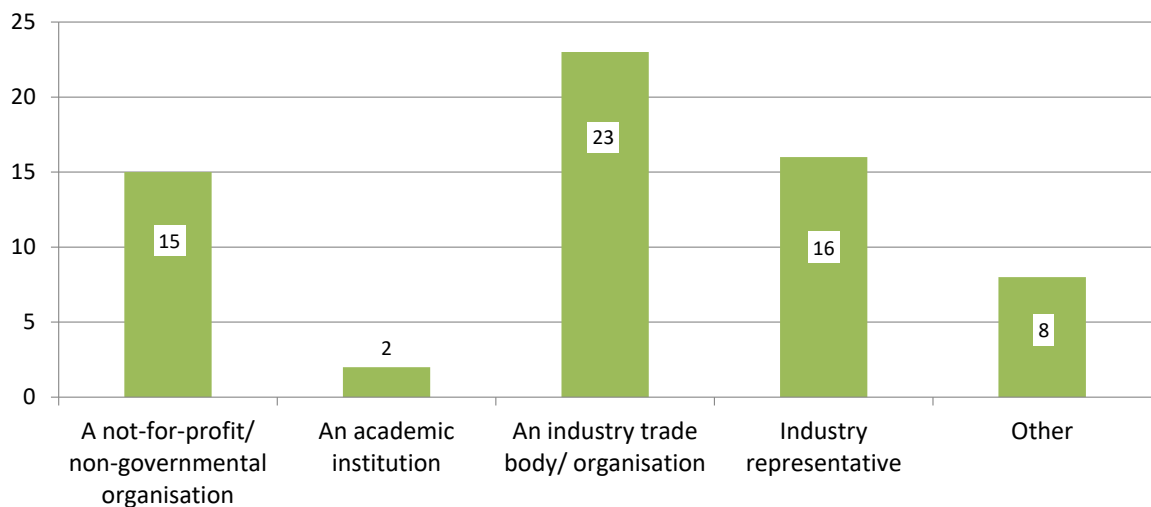
Figure 6-2 displays the number of respondents identified as Car Manufacturers or Importers of cars. Out of 27 in total 14 declared themselves as industry representatives, the other selected different self-classifications.

Figure 6-2: Number of responds from Car Manufacturers and Importers by self-classification to the stakeholder groups



Figure 6-3 displays the number of respondents from Industry, not for profit or academic organisations (i.e. all other stakeholders) excluding Car Manufacturers and Importers by

Figure 6-3: Number of responds from Industry, not for profit or academic organisations (i.e. all other stakeholders) excluding Car Manufacturers and Importers



In result a broad range of stakeholders contributed with ranking of the provided suggestions and valuable additional suggestions.

The additional suggestions lined out new ideas (or specific critical aspects) and details for the particular challenges and solutions in the MS.

Several of the (additional) suggestions are taken into account for the proposals developed in this study and other should be considered when assessing the ELV Directive as a whole. Several of the additional suggestions have potential as well to contribute to national discussions on how to support enforcement.

However considering the mass of contributions it is not possible to display all and each suggestion in detail in this report. For the full details of all additional suggestions please refer to Annex 6_02.

6.2. How to read the figures displaying the quantitative responds to suggestions

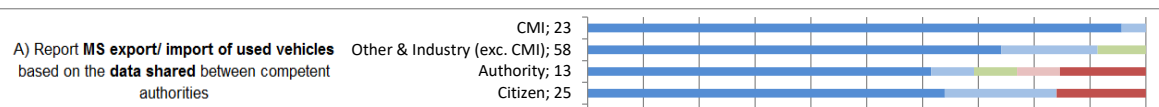
In the chapters below you will find for each of the six topics addressed in the questionnaire following three sections displayed:

- Suggestions proposed for rating by the participants / stakeholders
- Quantitative responds to suggestions
- Additional suggestions of the stakeholders

The figure displaying the quantitative responds to suggestions is complex (see the example in Figure 6-4) and requires some explanations:

- The first column, beginning with A), displays the suggestions in a shortened version. To the stakeholders the full suggestions have been visible when responding.
- The second column, beginning with `CMI` identifies the group to which the responding stakeholder belongs and how many (in absolute numbers) contributions have been received from this group.
 - `CMI` = Car Manufacturers/ Importers;
 - Other & Industry (exc. CMI)= Industry, not-for-profit or academic organisation (exc. Car Manufacturers/ Importers)
- The bars display the relative rating (how much percent of the group supports which suggestion) of the stakeholder group. The dark blue bar (legend (1)) indicates `strong support` for the suggestion and that it should be seriously considered and the dark red bar (legend (5)), indicates that the suggestion should `not worth further consideration`.

Figure 6-4: Explanation how to read the figures displaying the rating



6.3. Topic 1: Keeping track of vehicles within the EU

6.3.1. Suggestions

The questionnaire for the public consultation asked for the rating of the following suggestions:

A) MS should report on their export/ import of used vehicles based on the data exchange of competent authorities, as stipulated in Article 5(2) of the Directive on registration documents for vehicles (1999/37/EC).

B) Because a de-registered vehicle at its end-of life is hazardous waste (European List of Waste Code 16 01 04*) and needs to be treated accordingly, it is necessary to trace the owner responsible for such waste. It should be obligatory to register change in ownership, even if the vehicle is no longer registered for public roads. This is the case until the vehicle is either exported as a used vehicle or until a CoD is issued.

C) In order to de-register a vehicle, the owner is obliged to submit documents that demonstrate its sale or legal dismantling (an issued CoD).

D) When a vehicle is de-registered, exported and then dismantled in the receiving MS but not re-registered, the dismantling must be done in an ATF. The ATF is obliged to issue a CoD and send it to the responsible authority / national vehicle register, which would be obliged to forward the CoD to the MS of registration (where it was last registered).

E) Temporary de-registration must be accompanied by information on the fate of the vehicle (e.g. by the vehicle owner's declaration of intent to sell, export or store the vehicle, or that there is no intention to dispose of the vehicle).

F) The owner of a vehicle that is temporarily de-registered or flagged as, for example, 'insurance missing' or 'tax not paid', should be obliged to issue an annual statement about the status of the vehicle. In cases where such statements have not been issued, a fine could be imposed on the owner/ holder.

G) MS should be encouraged to establish fees or refund systems to support the treatment of ELVs in ATFs. For instance, the UK and Cyprus keep annual road vehicle taxation unless a CoD has been delivered.

6.3.2. Quantitative responds to suggestions

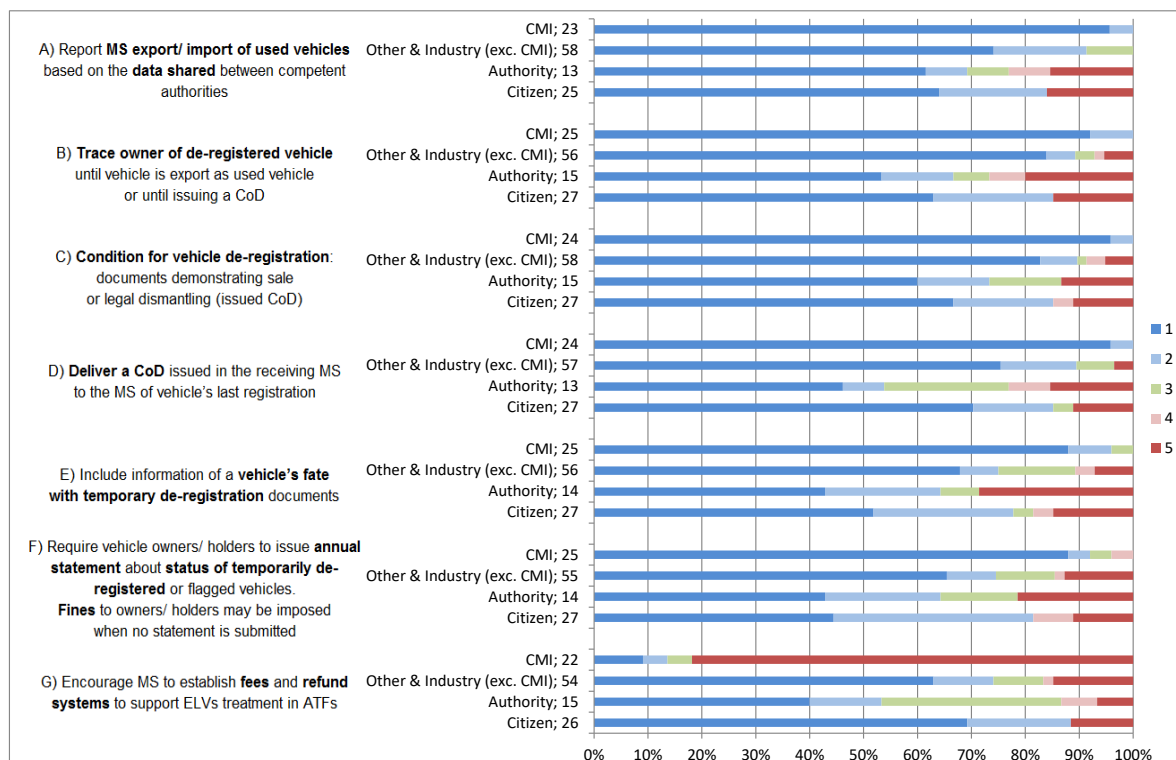
Figure 6-5 displays the numerical evaluation of the responders.

Suggestions A) to F) are the proposals for improving the tracking of vehicles within the EU that we listed in the Consultation. These are supported by a majority of stakeholders over almost all groups, including for suggestions (E and F) that intend that owners of temporarily de-registered vehicles give a statement on the fate of their vehicles or an annual status report of their vehicles. Respondents also agreed on the need for data exchange to include information about MS export/ import of used vehicles, in proposal (A), as well as an issued CoD to the MS of registration, in suggestion (D).

The only significant inconsistency can be demonstrated in proposal (G), where the automotive industry opposes encouraging MS to apply systems with fees and refunds to support ELV treatment in ATF. Comments pointed out that there is no evidence of any environmental benefits of such systems. However, in the additional suggestions, according to CMI respondents, the continuation of road taxation seems to be an effective way of directing vehicles into the legitimate channels.

It should be noted, however, from the comments that the car industry supports expanding the taxation system to even include vehicles that are only for use on private ground (are de-registered for use on public roads).

**Figure 6-5: Numerical evaluation of the suggestions by the stakeholders:
1) Keeping track of vehicles within the EU**



6.3.3. Additional suggestions of stakeholders

For each topic, responders were asked to share additional (up to three) important suggestions they strongly support. These responses were also mainly submitted over the online survey. In total the *Authorities* contributed with 20 additional different suggestions, the *Car Manufacturers and Importers* with 10 and *Others* with 47 different additional suggestions. For the full details of all additional suggestions please refer to Annex 6_02. Please find some selected additional suggestions below, provided by the different stakeholder groups.

Authorities:

1) Report of technical condition attached to every sales agreement that allows defining whether the vehicle requires a minor repair according to the Correspondents' Guidelines No 9

- 2) Revision of the Correspondents' Guidelines No 9: in order to harmonise interpretation of terms such as 'repair at reasonable costs'
- 3) EUCARIS implementation in all MS; notification of information (e.g. on CoDs issued and re-registration). The Association of European Vehicle and Driver Registration Authorities (EReg) informed that 'The existing EUCARIS functionality offers a solution for electronic cross border CoD notification'.
- 4) Harmonization on the EU level of the re-registration, de-registration etc. procedures incl. exchange information system between the MS

CMI:

- 1) 2-Step-CoD: first issuing to the last holder, second issuing to the authorities
- 2) From 2020 vehicles equipped with an emergency call system (eCall), which will be used to confirm a destruction of the vehicle

Other:

- 1) Set out mandatory collection rate for the producers/ importers (as in WEEE)
- 2) Clarify the responsibility of the importing MS for vehicles that are imported but never re-registered
- 3) Implement technical/ economic vehicle control before its export within and out of EU

6.4. Topic 2: Methods to achieve more complete reporting on extra EU export and ways to distinguish between exporting ELVs vs. used vehicles

6.4.1. Suggestions

The questionnaire for the public consultation asked for rating of the following suggestions:

- A) MS should make the Correspondents' Guidelines No 9 legally binding and establish national definitions (as done in Austria)²⁹.
- B) The content of the Correspondents' Guidelines No 9 should become legally binding at a European level, as done for Correspondents' Guidelines No 1 in the Directive 2012/19/EU on WEEE³⁰.
- C) Vehicles over 10 years old should be barred from extra EU-export, since the remaining life-span compared to the environmental risk is no longer appropriate.
- D) Vehicles over 14 years old (average age of ELVs in Europe) should be barred from extra-EU export, since the remaining life-span compared to the environmental risk is no longer appropriate.

²⁹ Switzerland ha+A23s established a different approach to distinguish used vehicles from ELV

³⁰ Directive 2012/19/EU of the Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE), OJ L 197, 24.7.2012, p. 38-71

E) National authorities should increase the number of inspections of vehicles to be exported, within the framework of Article 50(2a) of the Waste Shipment Regulation³¹, which requires MS to establish inspections plans by 1 January 2017.

F) Further suggestions (F) and (G) are related to tracking the exports that are not reported, e.g. illegal export. European Networks such as IMPEL (European Union Network for the Implementation and Enforcement of Environmental Law) should strengthen their cooperation and exchange of good practices in the field of illegal export or treatment of ELVs.

G) Cooperation of national police forces, Europol and Interpol, should be reinforced and intensified in their efforts to track down illegal ELV exports and treatment.

H) Within the Waste Shipment Directive, reporting on the European List of Waste (LoW) code should be compulsory when completing waste shipment documents for export. (A specific cell is already reserved for such information in the existing template; however, reporting the European LoW code is only voluntary.)

6.4.2. Quantitative responds to suggestions

Figure 6-6 displays the numerical evaluation of the responders.

For proposals (A) and (B), CMI is clearly against making Correspondents Guidelines No 9 legally binding. In contrast, a majority of the other stakeholders support making this document legally binding. Although, there is more support to establish on a European level among representatives of the authorities instead of on the MS level.

No specific stakeholder group strongly supported suggestions (C) and (D), which propose setting up limitations for extra EU export vehicles that are over 10 and 14 years.

Suggestion (E) addresses increased inspections of vehicles for export, within the framework of the Waste Shipment Regulation, which requires MS to establish inspections plans by January 2017. The car manufactures and importers oppose this approach, in contrary to the opinion of other stakeholders who strongly support this suggestion.

Suggestions (F) and (G), which propose enhancing cooperation both with the IMPEL network and Europol/ Interpol/ national police, are supported by a majority in all stakeholder groups.

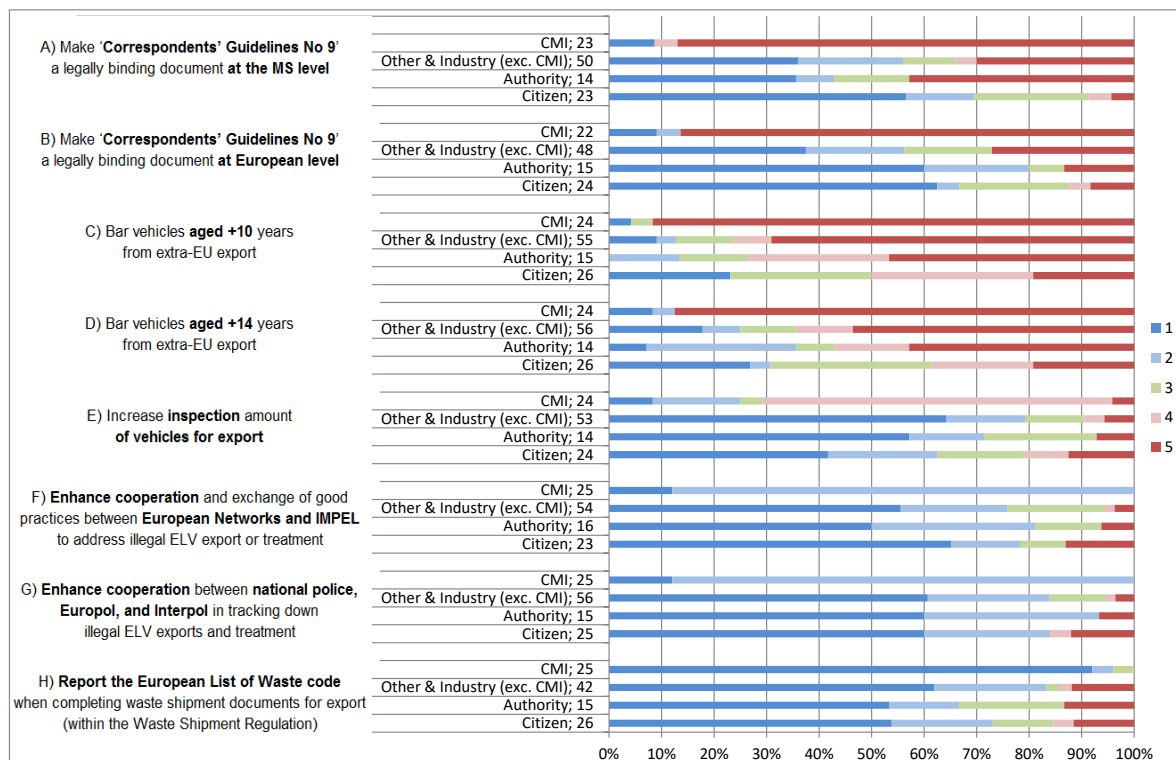
The last aspect, proposal (H), is addressing a specific aspect of the documents to be completed for waste shipment. It proposes that the European List of Waste Codes should be required to be reported. This suggestion by the majority of all stakeholder groups is strongly supported.

Suggestion (E) addressing increased inspections of vehicles for export, the Car Manufacturers/ Importers (CMI) apparently opposes this approach. However, from CMI's comments, we can understand that the issue is more about the wording of the

³¹ Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste, OJ L 190 12.7.2006, p. 1

(detailed) question, which refers to the Waste Shipment Regulation. This apparently gives reasons to see contradictions in the sentence. Therefore, the car industry considers the question as 'not worth for further consideration' quoted with '4' or light red. Nonetheless, for the conclusions of the public consultations' results we do not take into account that the CMI opposes inspections addressing compliance with the Correspondents' Guidelines No 9, which would also cover vehicles declared as used vehicles and nobody will apply the clauses of the Waste Shipment Directive for new vehicles.

**Figure 6-6: Numerical evaluation of suggestions by the stakeholders:
2) More complete reporting on extra EU export**



6.4.3. Additional suggestions of the stakeholders

For each topic, responders were asked to share additional (up to three) important suggestions they strongly support. In total the *Authorities* contributed with 16 additional different suggestions, the *Car Manufacturers and Importers* with 7 and *Others* with 47 different additional suggestions. For the full details of all additional suggestions please refer to Annex 6_02. Please find below some selected additional suggestions provided by the different stakeholder groups:

- Make valid roadworthiness test as a precondition for extra EU export (for vehicles older than a number of years to be defined)
- Correspondents' Guidelines No 9: define 'repair at reasonable cost'; simplify Correspondents' Guidelines 9; make it binding
- Total loss declaration by insurance company shall automatically classify a vehicle as ELV
- Establish penalties for false declaration of an ELV as used vehicle

6.5. Topic 3: Enforcement techniques to reduce illegal dismantling of ELVs at dealers and repair shops (garages) and actions to improve ATF compliance

6.5.1. Suggestions

The questionnaire for the public consultation asked for the rating of the following suggestions:

A) National authorities should regularly perform on-site inspections to identify illegally operating dismantling facilities. One possible way to identify illegal dismantlers is to examine the list of the dismantlers/ operators in phone books, advertisements or websites, such as eBay, and compare it with the list of registered ATFs.

B) The EC should establish minimum requirements for ATF inspections.

C) Spare parts should be accompanied by a VIN number and/ or a CoD, as well as an ATF's registration, to ensure that the spare parts were recovered by an ATF.

D) For every used vehicle that is imported to a MS, a recycling fee should be paid. For every new vehicle placed on the national market, a recycling fee should be paid as well. This fee would be returned when a CoD is issued for the respective vehicle.

E) A refundable recycling fee should be paid by the owner when registering a new or used vehicle. This fee should be reimbursed either when a CoD is issued or when the respective vehicle is sold and an adequate notification is made in the national registration system.

F) ATFs should notify, preferred electronically, the national vehicle register when a CoD is issued. For ELVs not registered in the country, suggestion D shall apply.

G) ATFs should identify the vehicle and check that the vehicle holder is authorised to scrap the vehicle.

H) ATFs should inform the authorities when they receive dismantled ELVs from unauthorised dismantlers.

I) Shredders should report the number of treated ELVs and CoDs received.

J) National authorities should regularly perform on-site inspections of ATFs and shredders. This should be done according to the elaborated Action Plan.

K) The results of inspections of ATFs and shredders should be reported to the EC.

L) The EC should establish minimum requirements for inspections of ATFs and shredders.

6.5.2. Quantitative responds to suggestions

Figure 6-7 displays suggestions belonging to sub-topic 'on-site inspections' (suggestions A, B, J, K, and L) and 'suggestions related to recycling fee' (suggestions D and E).

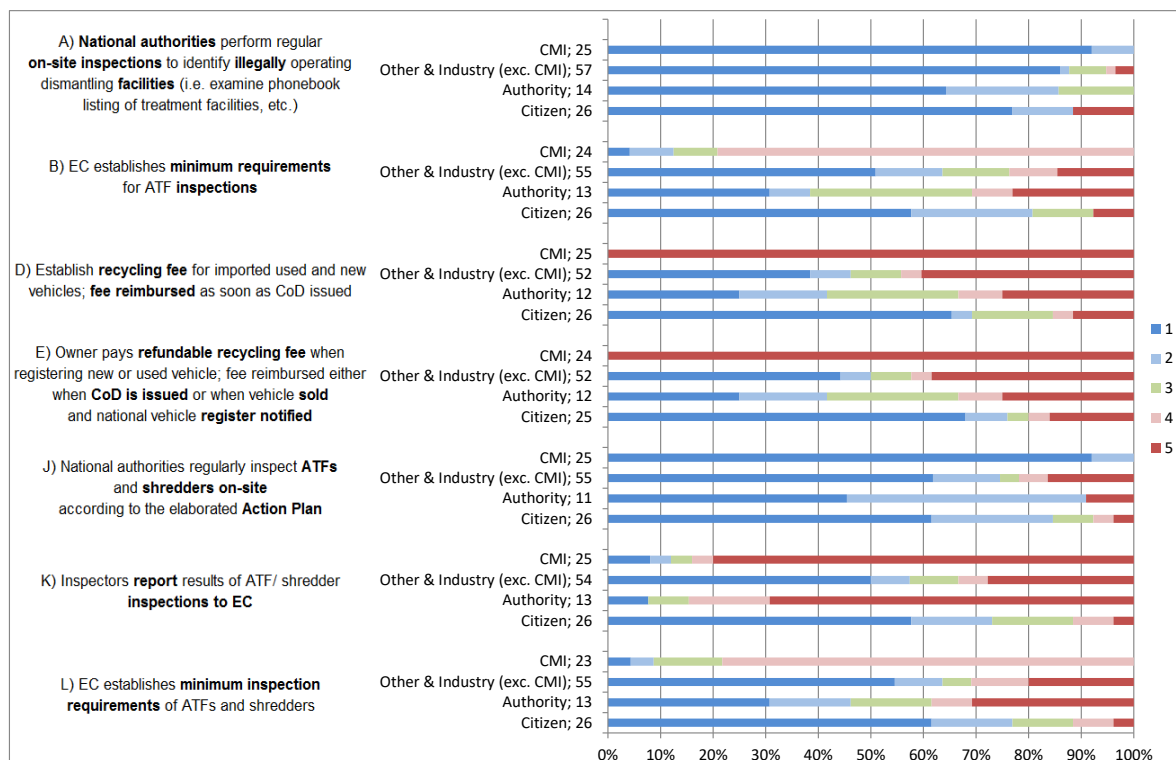
The majority of responders support the idea of national authorities performing regular on-site inspections (also ATFs) to identify illegally operating dismantling facilities according to the elaborated Action Plan (in suggestions A and J).

The suggestion that the EC shall establish minimum requirements for inspections of ATFs and shredders was mainly rated positively (B and L) except Car Manufacturers and Importers (CMI) who did not find the suggestion worth further consideration.

A significant number of respondents did not support the suggestion to report inspection results of ATFs/ shredders to the EC (K). The strongest support for this suggestion was among the responder group 'other & industry (exc. CMI)' and 'citizens'.

The suggestions D and E consider establishing recycling fees for imported used and new vehicles, which shall be reimbursed either when a CoD is issued or when the vehicle is sold and the national vehicle register notified. Again, all CMI respondents found the proposal not worth considering, while responses from the other stakeholder groups were much more balanced. Citizen groups generally indicated stronger support for the idea.

Figure 6-7: Numerical evaluation of suggestions by the stakeholders: 3) To reduce illegal dismantling of ELVs (1/2)



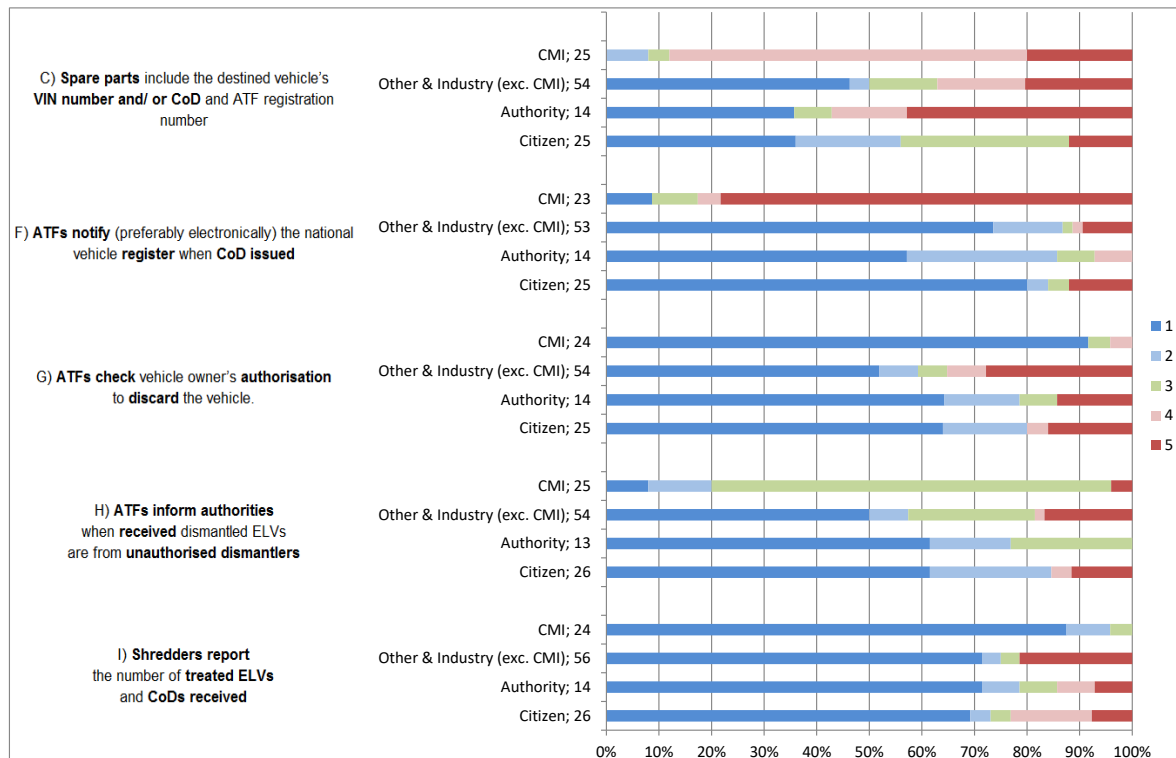
Source: Calculations from the public consultation

Figure 6-8 displays the numerical evaluation of the responders to suggestions addressing the ‘**responsibilities of ATFs and shredders**’ (suggestions C, F, G, H, and I). The majority of these suggestions were supported by most responders, especially proposals for ATFs to check a vehicle owner’s authorisation to discard the vehicle (G) and to inform authorities when they receive dismantled ELVs from unauthorised dismantlers (H), as well as the suggestion that shredders report the number of treated ELVs and CoDs received (I).

The apparent opposition of the CMI as visible in Figure 6-8 does not refer to this notification approach but to the fact that this proposal was combined with the implementation of a recycling fee (proposal D). In consequence the CMI rejected proposal (F) but, as detectable from the comments, supports notification procedures.

The least support, from all stakeholder groups, was received for suggestion (C), which proposes that spare parts shall include the destined vehicle’s VIN number and/or CoD and ATF registration number.

Figure 6-8: Numerical evaluation of the suggestions by the stakeholders: 3) To reduce illegal dismantling of ELVs (2/2)



6.5.3. Additional suggestions of the stakeholders

For each topic, responders were asked to share additional (up to three) important suggestions they strongly support. In total the *Authorities* contributed with 17 additional different suggestions, the *Car Manufacturers and Importers* with 9 and *Others* with 52 different additional suggestions to topic 3. For the full details of all additional suggestions please refer to Annex 6_02. Please find below some selected additional suggestions provided by the different stakeholder groups:

- National authorities **control websites selling** used car parts
- **Use helicopters** to fly over critical areas to identify unauthorised sites
- **Punish the last owner** if they sell the vehicle to an illegal dismantling station
- EC establish **guidance for minimum frequency** of ATF inspections
- Use on the used spare parts of the **ATF's ELV reference number** that is registered in the company's police book
- **Enforce the law**; follow guidelines to check fulfilment of requirements regulated in Annex I of the ELV Directive

6.6. Topic 4: Public awareness and incentives for ELV tracking and environmental risks

6.6.1. Suggestions

The questionnaire for the public consultation asked for the rating of the following suggestions:

A) A financial incentive should be implemented for a vehicle's last owner to properly deliver the vehicle for disposal. For example, the last owners will get paid a premium when delivering an ELV to legal dismantlers. The premium is financed by a deposit paid to a (public) fund at the time of first registration in the national register.

B) An education initiative should be implemented to inform vehicle owners of a vehicle's environmental risks. For example, a message can be enclosed with every vehicle tax reminder on how to scrap the vehicle accompanied by press releases in national newspapers to explain the CoD process and the importance of proper ELV treatment (environmental matters).

C) If the owners do not fulfil their duties (i.e. delivering the vehicle to an ATF using the correct procedure and properly de-registering the vehicle by providing a CoD or other document confirming legal sale), they should continue being responsible for paying the vehicle tax or other payment (penalty) until those duties are fulfilled.

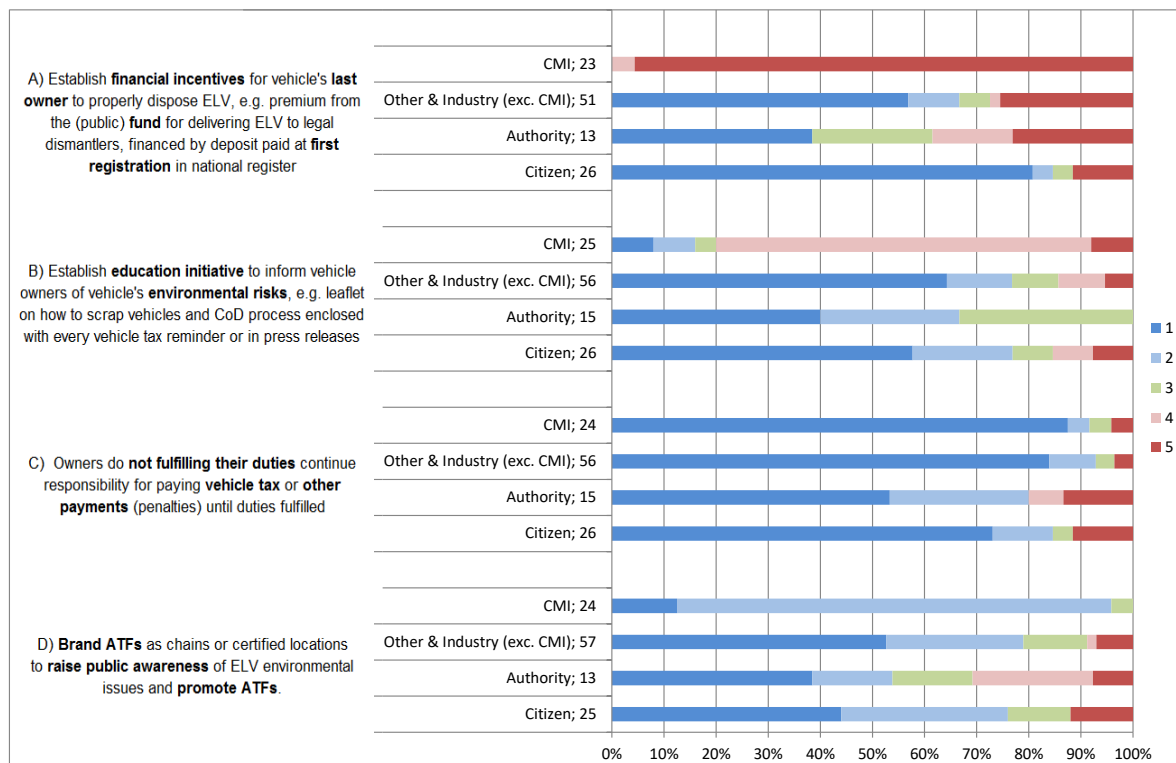
D) To increase public confidence, ATFs could be branded as a chain or certified. This could also raise public awareness of ELV environmental issues and promote ATFs.

6.6.2. Quantitative responds to suggestions

Figure 6-9 displays the numerical evaluation of the responders. For the suggestions (A) and (B) under Topic 4, the authorities, citizens, and others support the proposed financial incentives and initiatives as education and public awareness campaigns to encourage owners to take responsibility for ELVs. In strong contrast, CMI refuse any recycling fee, even if it is refundable.

Under suggestions (C) and (D), a strong majority of the responders supported continuing vehicle taxes or other penalties for owners who do not fulfil their duties and for branding ATFs as a chain or certified institution. However, CMI in the additional suggestions indicate that some respondents are against mandatory obligations for ATFs to join a specific cooperation and are also against a 'franchising-concept'.

**Figure 6-9: Numerical evaluation of the suggestions by stakeholders:
4) To address public awareness and incentives**



6.6.3. Additional suggestions of stakeholders

For each topic, responders were asked to share additional (up to three) important suggestions they strongly support. In total the *Authorities* contributed with 13 additional different suggestions, the *Car Manufacturers and Importers* with 3 and *Others* with 29 different additional suggestions to topic 4. For the full details of all additional suggestions please refer to Annex 6_02. Please find below some selected additional suggestions provided by the different stakeholder groups:

- Financial incentives:
 - incentives for the producers through a producer-financed fund
 - incentives for owners from:
 - refundable tax (not fund),
 - price paid by ATFs for the reuse parts
- Methods of incentives payment: by the authority not the ATF
- Incentives linked to the vehicle not to the owner
- Public awareness campaigns organized by EC

6.7. Topic 5: Aspects to improve coverage and data quality when reporting on ELVs (possible revision of the Commission Decision on ELV annual reporting)

6.7.1. Suggestions

The questionnaire for the public consultation asked for the rating of the following suggestions:

A) Article 1(1) of Commission Decision on ELV annual reporting asks for an appropriate description of the data used. To ensure better quality and comparable quality reports, the EC should identify the details addressed by such reports.

B) The 'current national vehicle market', for which Article 1(3) of Commission Decision asks for a breakdown, should be described more detailed. In particular, more precise data on new registrations, on the change in Eurostat's 'vehicle parc' and the export/ import of used vehicles, and on the number of ELVs and CoDs would enable a better evaluation of the coverage by MS.

C) MS' Quality Reports and data on their current national vehicle markets should be published in order to establish 'best practice' and improve overall reporting quality.

D) 'Non-ferrous materials' should be changed to 'Non-ferrous metals' in table 2 of the reporting tables in the Annex of the Commission Decision.

E) It should be clarified if MS are obliged to distinguish between ferrous scrap and non-ferrous metals when the Metal Content Assumption is applied.

F) In tables 1 and 2 of the reporting tables in the Annex of the Commission Decision, an additional column should be added indicating how many ELVs were exported.

G) For data comparability, when the Metal Content Assumption is applied, a breakdown of the metals should be added to tables 1 and 2 of the reporting tables in the Annex of the Commission Decision.

H) A harmonised approach to calculate reuse should be introduced, which could address the subtraction method and/ or metal content assumptions perhaps.

I) In table 1 of the reporting tables in the Annex of the Commission Decision the MS should report the number of CoDs issued by ATFs.

J) In table 2 of the reporting tables in the Annex of the Commission Decision the MS should report the number of hulks (i.e. depolluted and dismantled vehicles) treated by shredder plants and the number of CoDs received by shredder plants. This would enable better validation of material flows.

K) In the course of a revision of the Commission Decision on ELV annual reporting, the reporting tables should be adjusted in order to make reporting on recovery other than energy recovery, e.g. backfilling, possible.

6.7.2. Quantitative responds to suggestions

Figure 6-10 displays 'general suggestions about reporting on ELVs by MS' (suggestions (A) to (C)), that the majority of responders agreed on a need to:

A) Identify which details the EC addresses by quality reports;

B) Collect more precise data on new registrations, Eurostat figures and the number of ELVs and CoDs; and

C) Publish MS' quality reports – strongly liked across all stakeholder groups.

Respondents generally also support suggestions (H) to (K) that describe specific solutions to improve the 'reporting calculation and terminology' that were **positively rated**, including:

H) **Harmonise** approach to calculate reuse;

I) **Report** on the number of issued CoDs in reporting table 1 (Annex);

J) **Report** on the number of hulks treated by shredder plants and the number of CoDs received by shredder plants in reporting table 2 (Annex);

K) **Adjust** the reporting tables to include information on recovery other than energy recovery, e.g. backfilling.

Figure 6-10: Numerical evaluation of the suggestions by stakeholders: 5) To improve coverage and data quality when reporting on ELVs (1/2)

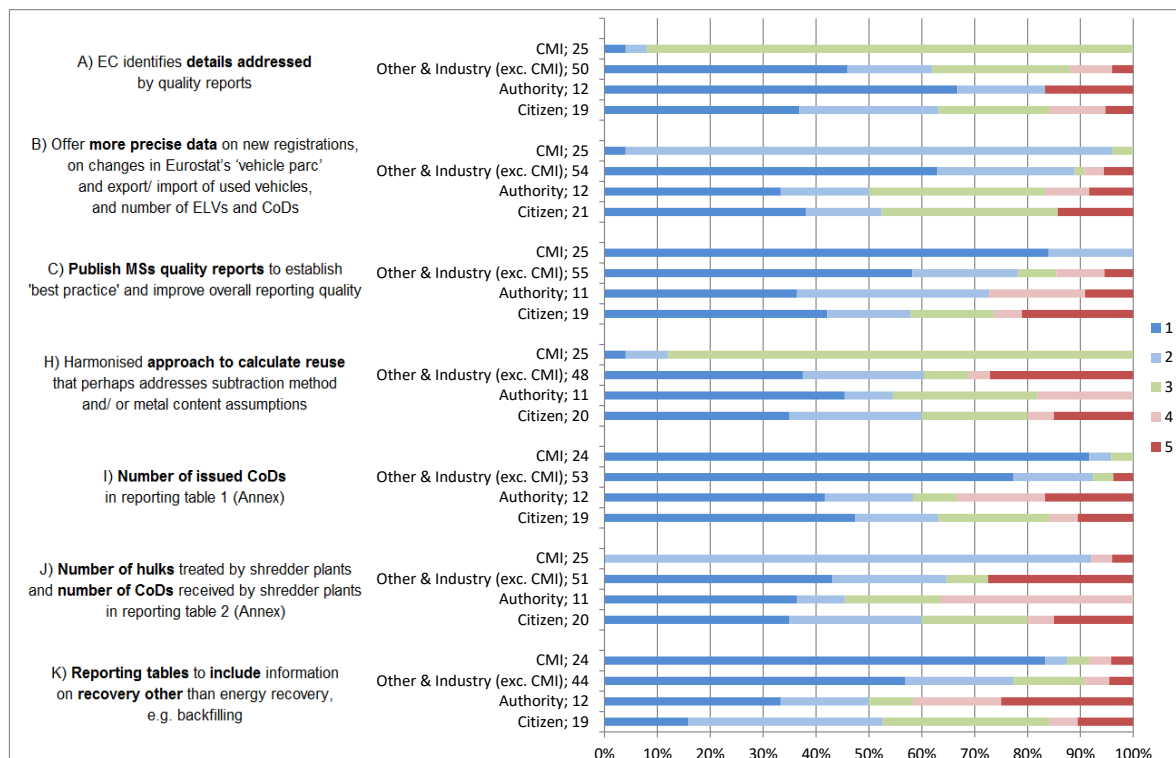
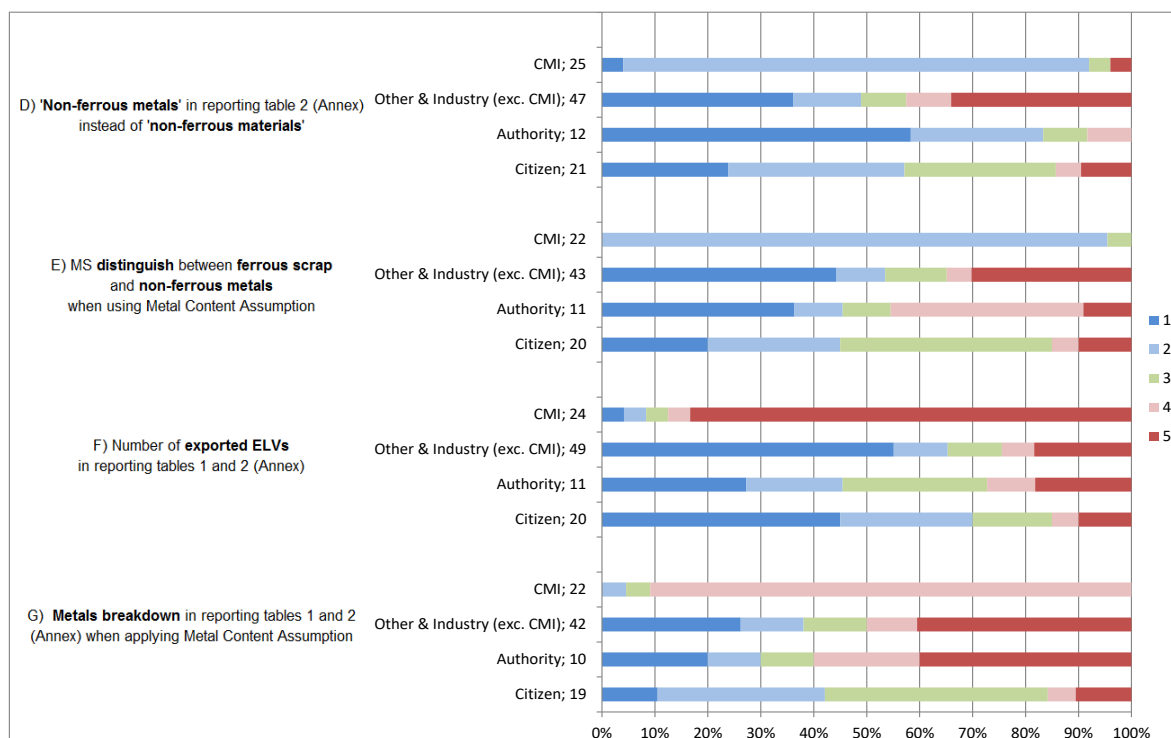


Figure 6-11 displays the numerical evaluation of the responders to suggestion (D) to (G) which are less supported by the respondents.

We also can see a difference per stakeholder group for suggestions (D) and (E). Representatives of 'Other & Industry group' reject with a share 30-35% these suggestions. This indicates that recyclers and shredders do not see a necessity to list 'non-ferrous metals' in the reporting table 2 in Commission Decision 2005/293/EC instead of 'non-ferrous materials' nor do they see a need to distinguish between ferrous scrap and non-ferrous metals when using Metal Content Assumption.

Looking at suggestion (G), the majority of respondents do not support having an allocation of metals to table 1 and 2 (of Commission Decision 2005/293/EC) when applying the Metal Content Assumption.

**Figure 6-11: Numerical evaluation of the suggestions by stakeholders:
5) To improve coverage and data quality when reporting on
ELVs (2/2)**



6.7.3. Additional suggestions of stakeholders

For each topic, responders were asked to share additional (up to three) important suggestions they strongly support. In total the *Authorities* contributed with 7 additional different suggestions, the *Car Manufacturers and Importers* with 4 and *Others* with 22 different additional suggestions to topic 5. For the full details of all additional suggestions please refer to Annex 6_02. Please find below some selected additional suggestions provided by the different stakeholder groups:

- Recommended **improvements** for:
 - Reporting exported and imported material streams, for example the number of depolluted ELVs (hulks)
 - use of EUCARIS

- **Amend the European List of Waste code**, introducing a specific code for ELVs as covered in the scope of the ELV Directive (i.e. to exclude ships/ vessels, trains and aeroplanes).
- **Harmonize** recycling and recovery **definitions** within the Waste Framework Directive.

6.8. Topic 6: Persistent Organic Pollutants (POPs) and ELVs

6.8.1. Suggestions

The questionnaire for the public consultation asked for the rating of the following suggestion:

A) To support pre-treatment and dismantling for ELVs, the worldwide IDIS (International Dismantling Information System), developed by vehicle producers, should include information on potential pollutants to the recycling process, such as persistent organic pollutants (POP) or other substances not yet mentioned in the ELV Directive.

6.8.2. Quantitative responds to suggestions

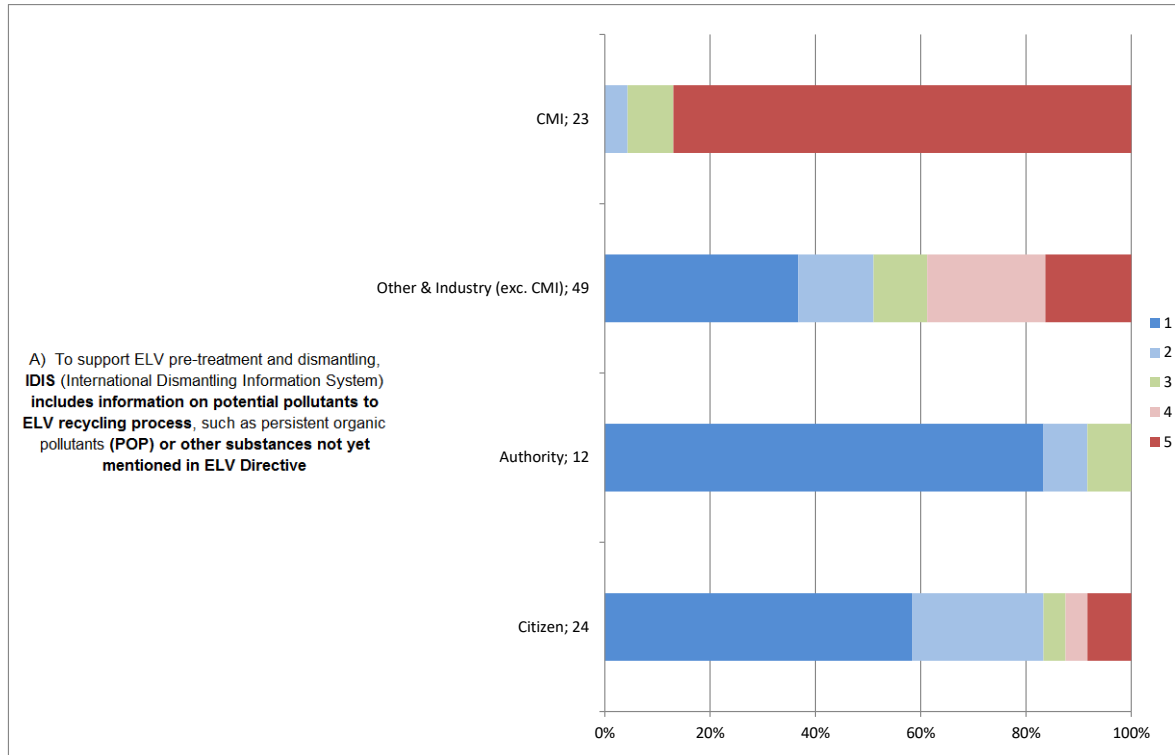
Figure 6-12 displays the numerical evaluation of the responders.

In Topic 6, addressing POPs and ELVs, CMI do not find the suggestion for the IDIS to include information on potential pollutants into the recycling process as a worthwhile consideration. CMI commented that the POP issue does not match the scope of this study due to its complexity; they recommend dealing with POPs separately. The CMI representatives are, however, ready to prepare and provide additional information and evidence-based argumentation to address POP-related questions affecting the recycling process.

The opinion among other respondents (Industry not CMI incl. recycling and shredding companies) is rather various. Some of the respondents expressed that they feel that the IDIS is not the right instrument to tackle POP issues or that it is not used by the ATFs at all. Other respondents think that vehicle manufactures should be strongly encouraged to advise vehicle recyclers about substances that need special precautions (like POPs, but also other hazardous substances).

Authorities and citizens strongly support the suggestion to support pre-treatment and dismantling for ELVs and the worldwide IDIS (International Dismantling Information System).

**Figure 6-12: Numerical evaluation of suggestions by stakeholders:
6) Persistent Organic Pollutants**



6.8.3. Additional suggestions of stakeholders

For each topic, responders were asked to share additional (up to three) important suggestions they strongly support. In total the *Authorities* contributed with 7 additional different suggestions, the *Car Manufacturers and Importers* with 2 and *Others* with 22 different additional suggestions to topic 6. For the full details of all additional suggestions please refer to Annex 6_02. Please find below some selected additional suggestions provided by different stakeholder groups:

Authority:

- **Update requirements** on treatment operations in the ELV Directive
- **Revise IDIS** in order to suit current needs of dismantlers
- Consider hazardous substances and POP's in ELVs when defining **recycling targets for ELVs**

Others:

- fostering **eco-design** to address issues arising from the interface between the waste and the chemical legislation **at design stage, not at products' end-of-life-stage.**

6.9. Conclusions from the public consultation

There is a broad and joint understanding among all stakeholders that the current procedures need further improvement to keep track of vehicles and to strengthen the requirement to issue and present a CoD. This applies for the provision of evidence on the vehicles fate during a temporary de-registration and also applies for fines to owners which do not provide statement of whereabouts for such temporary de-registered vehicles.

Most of the stakeholder support the implementation of economic incentives for instance fees or refund systems to ensure that ELVs are delivered to ATFs. Only CMI oppose such economic incentives.

With regard to the extra EU export of used vehicles (some of them possibly to be considered as ELV) the proposal to make Correspondents Guideline No 9 legally binding, many stakeholders oppose this proposal. Several stakeholders argue that the current version is difficult to apply and adjustments are needed before making the stipulations legally binding. Also the approach to ban the extra EU export of used vehicles was not supported by the stakeholders. Instead the more strict enforcement of inspections (when exporting) cooperation between IMPEL, police and customs services and the adjustment of reporting on waste shipment found strong support by all stakeholders.

With regard to the fight against illegal treatment within the EU the majority of stakeholders acknowledged the need for action in particular the need for national/ regional authorities to perform regular inspections of the sector (not only ATF and shredders but with a broader scope for garages, repair shops and spare part dealers) to identify illegal operations. Comments expressed the concern that improved burden to ATF only might even cause adverse effects (more illegal operator) and inspections should carefully focus to support legal operating facilities.

The proposal to establish minimum requirements for such inspection activities is less supported and partly rejected by the CMI. Again proposals to establish economic incentives to strengthen the legally operating sector are opposed by the CMI. The proposal to improve the reporting mechanism when issuing a CoD and upon arrival of an ELV at ATFs or shredder facilities was in general supported, including the establishment of electronic notifications to the registration authorities.

Supporting public awareness for the management of ELVs is considered as relevant by the stakeholders. While penalties to car owners not fulfilling their duties are supported by the vast majority of stakeholders, incentives based on funds/ deposits are again opposed by the CMI.

With regard to the very specific questions how to address aspects of the unknown whereabouts in the Commission Decision 2005/293/EC the number of contributing stakeholders decreased slightly however beyond 100 contributors provided their option accordingly and supported effectively all proposals with a vast majority or at least did not oppose.

7. Consultation of national authorities with regard to the registration procedures

In addition to the public consultation the contractor prepared in close cooperation with DG Move a questionnaire addressed to the registration authorities of all MS (Annex 7_01). DG Move submitted this questionnaire by 28th October 2016 and 24th November 2016 to the Transport Attachés and the Members of the Roadworthiness Committee.

The questionnaire asks about the details of the application in the MS on vehicle registration/ de-registration procedures according to the Directive on registration documents for vehicles (1999/37/EC). 10 MS (DE, HU, FI, UK, LV, BG, EE, IT, SE, SI, ES) plus Gibraltar and Switzerland answered until the 20th December 2016.

The Directive on registration documents for vehicles (1999/37/EC) defines:

- 'suspension' which means a limited period of time in which a vehicle is not authorised by a MS to be used in road traffic following which – provided the reasons for suspension have ceased to apply – it may be authorised to be used again without involving a new process of registration;
- 'cancellation of a registration' as cancellation of a MS' authorisation for a vehicle to be used in road traffic.

ELV Directive mentions that it does not prevent MS from granting, where appropriate, temporary de-registrations of vehicles. However, neither the term 'de-registration' nor 'temporary de-registration' is defined in the Directive on registration documents for vehicles (1999/37/EC).

The term 'temporary de-registration' is not defined by one of the above mentioned Directives. However most of the answering MS maintain a system where, based on a request (not ex officio), a vehicle is not permitted to be used in road traffic. 'Temporary de-registration' or an equivalent national term is typically applied by dealers when they keep used vehicles on private ground before selling them but also can be applied by private person for any reasons.

For most of the responding MS a 'suspension' is initiated by an authority of the MS of registration for any reason for instance if a vehicle does not comply with vehicle requirements for use on public roads, if the reasons for the suspension do not apply any more the suspension can be removed.

A majority of the responding countries report that holders / owners have to report changes in ownership / holdership to the registration authorities, even if a vehicle is (temporarily) deregistered. However it is not addressed if this applies also for the event that the vehicle is exported or never re-registered again for the use on public roads in this MS.

The national approach becomes more diverse if it comes to the interaction between the ELV Directive and the Directive on registration documents for vehicles (1999/37/EC):

According to the ELV Directive MS shall set up a system according to which the presentation of a certificate of destruction (CoD) is a condition for deregistration of the end-of life vehicle. According to the Directive on registration documents for vehicles (1999/37/EC) the competent authority receives notification that a vehicle has been treated as an ELV (according to the ELV Directive), the registration of that vehicle shall be cancelled permanently and this information shall be added to the electronic register.

The application of these conditions is not yet fully enforced and more effort is necessary to ensure that a) vehicles where a CoD is issued are not re-registered again and b) vehicles are not permanently suspended from the register simply by the reason that a certain period of off-road-declaration expires, without evidence / statement on the status of this vehicle.

As only FI and EE confirmed to publish their answers the attached Annex 7_02 displays the answers of most MS in an anonymous version only.

8. Stakeholder workshop

The stakeholder workshop aimed to present the public consultation results, the first findings of the study and the measures to address the problem of missing vehicles that have been performed by MS. The contractors' intention was to obtain the comments/ opinion on the presented information from the participants of the workshop in order to formulate recommendations for the EC for further steps to be taken according to the scope of the study.

Participants from 20 MS plus Norway subscribed for the stakeholder workshop. Relevant documents as Agenda, Minutes and Presentations are displayed in Table 8-1 and attached to this report accordingly.

Table 8-1: Stakeholder workshop (21 November 2016): relevant documents

Administrative documents	
Agenda	Annex 8_01
List of stakeholders of the mailing list that receive information emails and were invited to the stakeholder workshop	Annex 8_02
List of subscribed participants	Annex 8_03
Minutes	Annex 8_04
Presentations of invited stakeholders	
J. McCarley, DVLA, UK: Registration/ Deregistration Procedures in United Kingdom	Annex 8_05
P. Hallett, DEFRA, UK: Illegal Dismantling	Annex 8_06
J. Kes; P. Kuiper, ARN, Netherlands: De-registration and monitoring of ELV's in NL	Annex 8_07
R. Kohlmeyer, UBA, Germany: REGINA – making use of re-registration information to clarify used vehicle exports	Annex 8_08
B. Miraval, MEEM, France: Ways to fight against illegal sites and illegal activities of end-of life vehicles	Annex 8_09
Presentations of Oeko-Institut e.V.	
Situation of ELVs and unknown whereabouts in the European Union	Annex 8_10
Results of the public consultation	Annex 8_11
First general findings and recommendations of the study	Annex 8_12

During the meeting several attendees expressed support for improving the information on re-registration and de-registration in order to keep track of the vehicle and the owner. No objections were raised with regard to a possible action to harmonise the definitions of the ELV Directive with the definitions of the Directive on registration documents for vehicles (1999/37/EC). Moreover, the attendees did not raise any objections to the contractor's suggestions relating to the registration aspects including the proposal to abandon practices of an 'automatic' de-registration/cancellation of a registration after a certain time. The CMI explicitly supported that the MS should maintain information for each vehicle unless it is exported or registration is cancelled permanently.

With regard to the information on imports and exports, several detailed comments were made:

- How to deal with problems of extra EU exports via a transit country? Transit in 'single-stage process' or by custom agents might cause problems as regards the reporting on exports.
- The customs' codes for used vehicles are not fully coherent with the scope of the ELV Directive. Referring to the customs codes when reporting in accordance with the ELV Directive might cause inaccurate data and it is therefore necessary to address the potential difference.
- How to ensure that vehicles notified as exported are actually exported? Participants from a MS are concerned that such false declarations might be used by illegal dismantlers to escape a well-managed vehicle database.
- With regard to the distinction between ELVs and used vehicles and the related Correspondents Guidelines No. 9 to the Waste Shipment Regulation (to distinguish ELVs and used vehicles when being exported), some stakeholders raise concerns that Correspondents' Guidelines No. 9 might need a review and adjustment before making the guideline binding.
- In the context of the Roadworthiness Package³² it was clarified that an EU-wide database would not be compliant with the subsidiarity principle. Instead, notification procedures and shared access to national data is the best approach for the single market.

Relating to proposals on how to direct ELVs to the authorized treatment facilities, the idea to establish incentives was supported by several statements. A broad range of different kinds of incentives was mentioned by different stakeholders. Furthermore, attendees recommended requiring inspections in the spare part sector as well to verify provenance legal from dismantling. While a number of participants supported incentives such as refund systems for ELV treatment, the CMI expressed concerns that refund systems might shift vehicles from reuse to recycling, which would be against the waste hierarchy.

³²https://ec.europa.eu/transport/road_safety/sites/roadsafety/files/pdf/road_worthiness_package/impact_assessment_en.pdf

The contractor presented suggestions on how to improve the Commission Decision 2005/293/EC in the following fields:

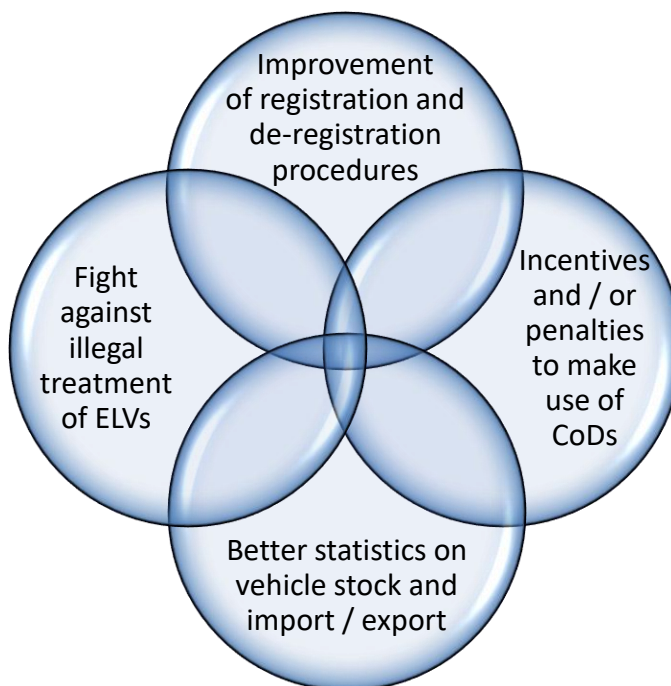
- Align and make consistent introductions and definitions.
- Simplify reporting on import/ export of ELVs.
- Define the details for reporting on imports/ exports of used vehicles.
- Define the details for reporting on national vehicle markets.
- Make provisions for the level of details in the quality reports and ensure that reports shall be published unless MS explicitly refuses publication.
- Request reporting on inspections/ enforcement actions.

9. Identification of measures to address the problem of vehicles of unknown whereabouts

This chapter presents the findings of the analysis on the existing situation and measures to address the problem of vehicles of unknown whereabouts on an EU and MS level as well presents recommendations for further measures.

The main fields of activity to improve monitoring how ELVs are handled across the EU and tracking the whereabouts of the used vehicles/ ELVs are displayed in Figure 9-1 and subsequently described in more detail.

Figure 9-1: Main fields of activity to improve monitoring how ELVs are handled



Source: Oeko-Institut e.V.

9.1. Improvement of registration and de-registration systems

As discussed in the chapters before the improvement of the administrative procedures to keep track of vehicles is an aspect jointly supported by a large majority of all stakeholders. In this chapter various legislative changes concerning the registration and de-registration procedure will be presented with the general aim to get a more precise overview on the whereabouts of vehicles and subsequently the number of ELVs in MS and on EU level. In more detail the aim of the proposals is to ensure that vehicles (including those not in uses on public roads) are tracked until their registration is permanently cancelled and to ensure that national registration systems are linked up in a more effective way. An overview of the proposed measures, including a preliminary first assessment on the burdens is displayed in Table 9-1.

Table 9-1: Overview proposed measures for improvement of registration and de-registration procedures

Measure	Legal domain	Comments
1. Harmonized definition and application of terms:		
1.1 temporary de-registration	ELV Directive, Article 2 Directive on the registration documents for vehicles (1999/37/EC),	Despite the legal and administrative procedures to adjust and implement the national legislation it will most likely not cause additional or administrative burdens to any stakeholder
1.2 suspension		
1.3 cancellation of registration		
2. Adjustments for ELV Directive Article 5:		
2.1 Replacing 'de-registration' with 'permanent cancellation of a registration'	ELV Directive, Article 5(3)	Despite the legal and administrative procedures to adjust and implement the national legislation it will most likely not cause additional or administrative burdens to any stakeholder
2.2. Conclusive list of conditions when a permanent cancellation shall apply	ELV Directive, Article 5(3) or Directive on the registration documents for vehicles (1999/37/EC), Article 2	
2.3. Clarification on the relation of suspension and temporary de-registration to CoD	ELV Directive, Article 5 (tbd)	
2.4. establishment of notification procedure between MS when a CoD is issued	ELV Directive, Article 5(5)	
3. Avoid adverse effects of indefinite off road notification		Administrative effort of authorities to be refunded by fees, Limited additional burden to owners / holders.

9.1.1. Harmonized definition of the terms 'de-registration' and 'temporary de-registration'

The detailed legal analysis on the lack of coherence between ELV Directive and Directive on the registration documents for vehicles (1999/37/EC) regarding 'temporary' and 'final de-registration of vehicles' is described in Annex 9_01. The findings of this analysis are considered when drafting the subsequent sections. A main result is that the ELV Directive and Directive on the registration documents for vehicles (1999/37/EC) use a not harmonized set of terms like 'suspension', 'de-registration', 'temporary de-registration' of vehicles and the 'cancellation of a registration' and 'permanently cancelled' having effects on the whereabouts of

vehicles. Different understanding, translations and use of the before mentioned terms in the MS increases the risk of losing track of vehicles or the misinterpretation of data.

According to Article 5(3) the ELV Directive, *MS shall set up a system according to which the presentation of a CoD is a condition for de-registration of the ELV. This CoD shall be issued to the holder and/ or owner when the ELV is transferred to a treatment facility.*

The Article 3a(3) of the Directive on the registration documents for vehicles (1999/37/EC) includes a cross reference to the ELV Directive as it states *in the event that [...] a MS receives notification that a vehicle has been treated as an ELV in accordance with Directive 2000/53/EC [...], the registration of that vehicle shall be cancelled permanently and information to that effect shall be added to the electronic register.* This clause shall be applicable latest from 20 May 2018.

Whereas in Article 2(e) of the Directive on registration documents for vehicles (1999/37/EC) the term 'suspension' is defined as 'a limited period of time in which a vehicle is not authorised by a MS to be used in road traffic [...] it may be authorised to be used again without involving a new process of registration'. The term 'suspension' is not used in the ELV Directive, but the ELV Directive mentions the term 'temporary de-registration' in recital (17), which can be granted by MS. Although the ELV Directive does not define the term 'temporary de-registration' it seems to have a similar meaning as 'suspension' leading to an unclear relationship between the terms 'temporary de-registration' and 'suspension'.

The terms have been discussed in detail with DG Move during the course of the preparation of the questionnaire, asking the national vehicle registration authorities on particular national approaches (Annex 7_01).

The most systematic solution would be to introduce the definitions in the Directive on the registration documents for vehicles (1999/37/EC) possibly together (in one act) with amendments of the ELV Directive, referring for the mentioned terms to the Directive on the registration documents for vehicles (1999/37/EC).

Considering inter alia the discussion with DG Move the contractor recommends the following definitions:

- ➔ Temporary de-registration: based on a request (not ex officio) of the vehicle holder and/or owner a vehicle is temporarily not permitted to be used in road traffic.

The following definitions established by the Directive on the registration documents for vehicles (1999/37/EC) might be kept unchanged:

- ➔ Suspension: a limited period of time in which a vehicle is not authorised by a MS to be used in road traffic following which – provided the reasons for suspension ceased to apply – it may be authorised to be used again without involving a new process of registration.
- ➔ Cancellation of a registration: a cancellation of a MS' authorisation for a vehicle to be used in road traffic.

In consequence these terms can be applied in the ELV Directive for instance when referring to the monitoring of the national vehicle stock and ELVs generated or when

referring to the conclusive list of conditions for a permanent cancellation of a registration.

9.1.2. Adjustment of the stipulations of Article 5 of the ELV Directive

In consequence of the definitions in the section above it is possible now to refer to well defined terms in the subsequent clauses. In particular Article 5 (3) of the ELV needs to be adjusted. Therefor the consultant proposes:

- ➔ Replacing the term 'deregistration' in Article 5 (3) the ELV Directive with the term 'cancellation of a registration' referring to the Directive on the registration documents for vehicles (1999/37/EC).

One additional aspect is hampering the intention that a CoD is a pre-requisite for a permanent cancellation: Other conditions might apply in the MS for a permanent cancellation of the registration, like simply the expiration of a period when the vehicle was not allowed for use on public roads. To avoid such conditions it might be supportive to define a conclusive list of conditions for the permanent cancellation of registration.

The proposed wording for such a conclusive list of conditions is:

- ➔ MS shall set up a system to apply permanent cancellations of registrations for the following conditions: a) presentation of a certificate of destruction b) proven export of a vehicle, c) proven theft of a vehicle d) official statement/document from owner that the vehicle is no longer available for re-registration. These conditions are conclusive.

Alternatively, and considering legal coherence it might be possible to establish such conclusive stipulations in Article (2) of Directive on registration documents for vehicles (1999/37/EC). As long as such conclusive stipulations are not established in one of the Directives we propose to look for an interim approach like a definition in a guidance document or definition for reporting.

In the same context it is recommendable that the CoD is handed over to the holder / owner (as it is currently the case) and in addition the national vehicle register (in the MS where the CoD is issued) shall receive from the ATF (or collection point) an electronic notification that the CoD has been issued for the individual vehicle³³.

Proposed wording to establish such electronic notification:

- ➔ The certificate of destruction shall be issued to the holder and/or owner and when the CoD is issued an electronically notification shall be sent to the national vehicle register of the Member States where the ATF or the collection point is located.

³³ The Netherlands has an online ELV monitoring system to allow exchanging information between actors within the ELV system. Thanks to this system, the ATFs inform the Dutch Vehicle Authority (RDW) as well as the ARN online of issued CoDs. As soon as a pre-treated ELV is delivered to the shredder, the information about a received ELV is delivered online by the shredder operator to the ARN. Information flows online between the ARN and post-shredder treatment plant (PST) as well.

Considering size and competences of the (diverse) ATFs across Europe we do not recommend obliging the ATFs to submit notification to other than its national authorities. For the procedures in case the dismantled vehicle never have been registered in the MS where the ATF is based please refer to text below:

According to Article 5 (5) of the ELV Directive MS shall take the necessary measures to ensure their competent authorities mutually recognise and accept the certificates of destruction issued in other MS in accordance with paragraph 3.

However MS where a vehicle is dismantled are not obliged to inform the MS of registration (where that vehicle was last registered). The ELV Directive does not regulate such notification on CoDs. From the consultations it is known that used vehicles might be transferred to another MS with the intention to repair and sell it again for the use on public roads. Later on it becomes apparent that the vehicle is not worth for repair but for the use of spare parts only. In fact the vehicle is never registered in the MS where it is transferred to and becomes an ELV. Even if it is sent to a collection point or ATF this fact is not notified to the MS of registration (where the vehicle was last registered).

The contractor recommends adding to Article 5(5) of the ELV Directive an obligation for the case that the dismantled vehicle has been registered in another MS to inform that MS on the existence of a CoD accordingly.

- ➔ Relevant authorities receiving a notification that a CoD has been issued by a national ATF (or collection point) for a vehicle which has not been registered in the country must notify the corresponding authority of the MS where the vehicle was last registered.

As mentioned by the Association of European Vehicle and Driver Registration Authorities (EReg) during the public consultation in September 2016 the existing EUCARIS functionality offers a solution for electronic cross border CoD notification between relevant authorities.

9.1.3. Effects of indefinite temporary de-registered/ suspended vehicle

In the UK the Statutory Off Road Notification (SORN) in order to temporary de-register a vehicle was previously only valid for one year and needed to be renewed annually. Indefinite SORN was introduced in December 2013 and is a confirmation form, submitted by a vehicle keeper in order to register that the vehicle is kept off public UK roads. A keeper does not have to submit the ISORN declaration annually, as it was under SORN. This change means that the keeper is not obliged to inform the authorities about the whereabouts of temporarily de-registered vehicles. On request, UK answered that it is too early to identify adverse effects of this legal change on the number of CoDs issued and the volume of ELV treated in ATF.

As another example, Germany does not distinguish between de-registration and temporary de-registration any more, as it was done before 2006. Vehicles which are displayed in the register as `de-registered` will automatically be removed from the register after 7 years. As the German responsible authority does not record a change of ownership if a vehicle is de-registered, the tracking of such vehicles is lost.

With these observations in mind, the contractor recommends:

- ➔ EU level or MS: Obliging the owner to annually inform (preferable electronically via internet and terminals at the registration offices) authorities of the whereabouts of temporarily de-registered vehicles or vehicles with suspended registration as well as of any changes in ownership. Noncompliance should be fined with an administrative fee.
- ➔ Banning automatic permanent cancellation of vehicles that are temporary de-registered/ suspended.

9.2. Incentives and Penalties to make use of the Certificates of Destruction more attractive

As seen during the public consultations the CMI are rejecting any proposal to establish economic incentives to strengthen legal treatment and direct ELVs to ATFs. However some of such proposals got support of other stakeholders. Insofar it might be premature to draft explicit legal clauses but to reflect on more detailed experiences of some MS applying incentives and penalties and to draw conclusion from identified best practices.

An overview of the proposed measures, including a preliminary first assessment on the burdens is displayed in Table 9-2.

Table 9-2: Overview proposed measure to discuss the effects of Incentives and penalties

Measure	Legal domain	Comments
1. Guideline on best practices with regard to economic instruments	EU: Study / guideline	Effects on budget of DG Environment.
2. Make use of existing experience with economic instruments	MS	To be assessed case by case on national level.

9.2.1. Annual administrative fees

The Netherlands have established a legal system in which the vehicle owner is obliged to pay a road tax as long as the vehicle is registered, even if it is suspended / temporarily deregistered. This approach should be seen as an incentive for a vehicle owner to de-register a vehicle in order to stop paying the mentioned road tax. It also allows the authorities to track a vehicle.

9.2.2. Incentives

Some MS established legal systems providing a vehicle's last owner incentives to bring a vehicle to an authorised treatment facility (ATF). For instance, in 2000 Denmark started an ELV collection scheme to provide a pay-out to citizens who handed and ELV over to an ATF³⁴. Recently a study for the Dansk Ministry of Environment³⁵ analysed

³⁴ For more details please refer to chapter 3.4.4

³⁵ Miljøministeriet Miljøstyrelsen (2016): Udredning af skrotningsgodtgørelsens incitamentsstruktur, September 2016

the impact of the ELV pay-out on the choice of the disposal route. In Denmark's case, the reduction in pay-out in 2014 was seen as the reason for a significant drop in legally collected vehicles. Other studies assessed the effects of the premium payment during the financial crisis in 2008 / 2009³⁶.

9.2.3. Penalties

Some MS established legal systems that penalise vehicle owners when handing over their vehicles to an unauthorised treatment facility or to vehicle traders without any proof of sale.

- ➔ The contractor recommends the EC to establish a guideline for MS on best practices on how to strengthen the legal treatment and how to direct ELVs to ATFs with particular emphasis on the introduction of incentives, penalties and other economic instruments. In addition an accompanying study may identify and assess practices on how MS with a high level of illegal treatment could be encouraged to implement such procedures.
- ➔ Furthermore the contractor recommends the MS to make use of the experience of the mentioned MS, in particular Denmark having a remarkable high number of CoDs per registered vehicles as demonstrated in Figure 3-7.

9.3. Fight against illegal treatment of ELVs

The fight against the illegal treatment of ELVs within the EU is a task mainly to be addressed on national level or even regional level. Legal provisions on EU level can only provide a supportive environment, however the MS are exposed to the burden to carry out cost effective field activities.

An overview of the proposed measures, including a preliminary first assessment on the burdens is displayed in Table 9-3.

Table 9-3: Overview proposed measure to fight illegal treatment

Measure	Legal domain	Comments
1. Define minimum requirements for national inspections and inspection-plans and reporting to EC.	ELV Directive	Needed for harmonisation across EU, burdens to be assessed.
2. Establish the obligation to display the origin of used spare parts	ELV Directive	Needed harmonisation to reduce illegal dismantling of valuable components making legally operating ATFs less (or not) profitable.
3. National inspection campaigns for the vehicle maintenance/ repair/ dismantling and shredding sector.	National	According to the experiences in UK and France such campaigns are quite expensive and burdensome. To be assessed if to be compensate by the manufacturer / importers

³⁶ E.g.: Bundesamt für Wirtschaft und Ausfuhrkontrolle (2011): Abschlussbericht Umweltprämie.

		(fee).
4. Establish legally binding description on how to distinguish used vehicles from ELV	Annex to ELV Directive	The current Correspondents' Guidelines No 9 on shipment of waste vehicles is not practical for application by custom authorities. Adjustments are needed. Reverse onus clause to be considered.

9.3.1. Inspections

According to Article 6 and Annex I of the ELV Directive, authorised treatment facilities (ATFs) should be registered by the competent authorities. They should have a permit as a registered facility and they should treat ELVs according to the minimum technical requirements for treatment, as described in Annex I to the ELV Directive that ensures environmental protection and promotes recycling and reuse of parts. All dismantling (including separating spare parts for private purposes or for sale) undertaken at unauthorised treatment facilities is illegal. In this context the contractor recommends for the:

- **EU level:** Establishing in Directive 2000/53/EC additional requirements on MS to:
 - prepare national inspection plans for the vehicle maintenance/ repair/ dismantling and shredding sector to identify and abandon illegal activities
 - report such inspection plans to the EU and
 - report the results of such inspections to the EU.
- **EU level:** The contractor recommends establishing the obligation to provide, with each sold spare part, a VIN of the vehicle from which the spare part comes and the registration code of the ATF where the spare parts were dismantled.
- **MS level:** the contractor recommends establishing national inspection campaigns at the MS level (as some MS already have) for the vehicle maintenance/ repair/ dismantling and shredding sector to identify and abandon illegal activities. As long as the obligation publish the VIN and the registration code of the ATF are not yet established on an EU level, the MS can take legal action instead.

9.3.2. Illegal export of ELVs to non EU countries

In practice, it is difficult to distinguish between a used vehicle and an ELV when it is exported to non EU countries. Export of ELVs to non-OECD countries is prohibited by the Waste Shipment Directive. The Correspondents' Guidelines No 9 on shipment of waste vehicles defines criteria for the differentiation between second-hand vehicles and ELVs but is not legally binding. This guidance is often criticised as it is difficult to apply it to thousands of used vehicles exported for instance via Antwerp. In this context it is discussed by different stakeholders if it is possible to establish a reverse onus clause, making the exporter responsible to demonstrate that the used vehicle is not an ELV and to expose the declarer on relevant fines in case of false declaration.

- **EU level:** The contractor recommends making legally binding a description on how to distinguish used vehicles from ELV possibly establishing a reverse onus clause. For this purpose, the Correspondents' Guidelines No 9 to the Waste Shipment Directive apparently needs adjustment and should not be directly transferred to a legally binding document.

9.4. Better statistics on vehicle stock and cross border trade

As demonstrated in chapter 3.2 it is not possible to assess the performance of the single MS with regard to its contribution to the number of unknown whereabouts. Instead it is necessary to establish additional data sources to monitor the performance of the MS. The chapter below outlines aspects how to contribute to better data.

An overview of the proposed measures, including a preliminary first assessment on the burdens is displayed in Table 9-4.

Table 9-4: Better Statistics on vehicle stock and cross border trade

Measure	Legal domain	Comments
1. More detailed information on vehicle stock		
1.1 Make report on vehicle stock and new registration obligatory	Directive on the registration documents for vehicles (1999/37/EC), Article 5(3) <u>or</u> Statistical regulation on transport (?)	In principle the data are available to the national authorities. Insofar no additional burden to collect them. The only burden would be to transfer them in the manner required.
1.2 Skip reporting by 'age group' and establish more useable structure (data for each age year)	An Annex to Directive on the registration documents for vehicles (1999/37/EC) Article 5(3) providing the details on how to report <u>or</u> Annex to Statistical regulation on transport (?)	Considering todays data management there is no need to reduce data volume and to report on 'age groups' only.
1.3 include the status of the indemnity insurance to the issues to be recorded	Directive on the registration documents for vehicles (1999/37/EC) Article 3(4): add point (d)	Marginal effort as data interfaces and code of conduct need to be established only
2. Cross border trade of used vehicles with EU		
2.1 Notification on vehicles previously registered in another MS	Notification obligation of information on registration in a another MS is established in Directive on the registration documents for vehicles (1999/37/EC) Article 5(2)	Current practice
2.2 Record the	Commission Decision	According to German

information gathered according 2.1 above and report it to the competent authorities for ELV monitoring	2005/293/EC and / or Directive on the registration documents for vehicles (1999/37/EC), Article 5(2)	experience the additional administrative burden (compared to 2.1) is marginal.
3. Cross border trade of used vehicles with non EU		
3.1 establish notification process with third countries (non EU) on re-registration	Bilateral agreements	To be assessed

9.4.1. More detailed information on vehicle stock

Eurostat publishes data on the vehicle stock and new registrations of the EU MS each year. The data submission to Eurostat is voluntary and was by far not complete in the past. In addition the data is collected for so called 'age groups' only (less than 2 years, from 2 to 5 years, from 5 to 10 years, 10 years or over, respectively for more since 2013 in addition from 10 to 20 years and 20 years or over). This data structure hampers to use the data for calculation on the stock exit. Not least the categories of vehicles are not the same as the vehicles mentioned in the ELV Directive (M1 and N1). As outlined in the chapters before, the availability of harmonised data is a precondition for the validation of data on ELVs. The details which data should be recorded by the MS are defined in the Directive on registration documents for vehicles (1999/37/EC).

The Directive on the registration documents for vehicles (1999/37/EC) obligates MS in Article 3(4) to *record electronically data on all vehicles registered on their territory. These data shall include: (a) all mandatory elements from Annex I, II5 [...], where the data are available; [...] (c) the outcome of mandatory periodic roadworthiness tests [...].*

The contractor recommends:

- ➔ Adding an additional point to Article 3 of the Directive on registration documents for vehicles 1999/37/EC, e.g. '(4a) MS shall report to the EC data on the number of vehicles registered and selected characteristics of the vehicles.' Details for such reporting should be agreed by expert groups/ TAC accordingly. DG ENV as a user of such data and Eurostat, dealing with the data on transport currently submitted by MS voluntarily, should be included in such consultations.
- ➔ Further we recommend changing the current approach to report data to Eurostat by 'age groups' only but to report instead the data by detailed age until the age of 20 years as the data is available to the MS and only such approach allows appropriate use of the data.
- ➔ In addition we observed some vagueness about the definition of what should be considered for the vehicle stock. In principle the definitions of the

‘ Illustrated Glossary for Transport Statistics ’³⁷ should apply where vehicles without indemnity insurance shall not be accounted for the stock of registered vehicles.

9.4.2. Cross border trade of used vehicle: intra EU trade

As demonstrated in Chapter 3.2.7 the Foreign Trade Statistics (FTS) for used vehicles underestimates the trade of used vehicles between MS to a very relevant amount and FTS is therefore not a reliable source for the calculation of national vehicles balance. Such balance is required to demonstrate that all ELVs generated on the territory of the MS are treated according to the requirements of the ELV Directive. Therefore additional sources for the trade of used vehicles between MS are necessary for the reporting on imports of used vehicles (when recorded first in the national register) and exports to other MS (when a notification on re-registration is received).

Article 5(2) of the Directive on the registration documents for vehicles (1999/37/EC) stipulates: ‘ re-registering a vehicle previously registered in another MS: the MS of destination shall, within two months, inform the authorities of the MS which delivered the registration certificate of its withdrawal. ’ This information is used by the MS to check if the vehicle in the register of origin is for instance listed as stolen. If this is not the case the file is closed, but the information or re-registration is not aggregated or used for any other purposes. At present Germany is the only country within the EU known to us that refers to data from the notification on re-registration across Europe according to Article 5(2) of the Directive on registration documents for vehicles (1999/37/EC). In fact the German KBA simply counts the received notifications of re-registrations by country and stated on demand that the additional effort is not accounted and possibly less than 10% of the notification procedure on re-registration.

- ➔ As part of the revision of the Commission Decision 2005/293/EC, the contractor recommends asking the MS for information on imports and exports of used vehicles from and to other MS. Notifications on re-registration of vehicles in other MS might be accepted as a proxy for the export of used vehicles. The contractor recommends that the MS make use of the option to monitor the re-registration of used vehicles exported to other MS by using established procedures in line with Article 5(2) of the Directive on the registration documents for vehicles (1999/37/EC)³⁸.

9.4.3. Cross border trade of used vehicles: extra EU

The issue to distinguish ELVs from used vehicles is important to identify illegal export of ELVs to non OECD countries. In contrast to the export of ELVs, the export of used

³⁷ International Transport Forum, Eurostat, United Nations Economic Commission for Europe (2009): Illustrated Glossary for Transport Statistics, 4th Edition

³⁸ It would be favourable if EReg and/or EUCARIS discuss how to contribute to efficient procedures and a joint approach of the relevant national authorities in the MS.

EReg is the Association of European Vehicle and Driver Registration Authorities

EUCARIS, the European car and driving license information system is a cooperation between official national registration authorities. It is a system that connects countries so they can share vehicle and driving licence information and other transport related data. EUCARIS is not a database but an exchange mechanism that connects the Vehicle and Driving Licence Registration Authorities in Europe. EUCARIS is developed by and for governmental authorities and supports a.o. the fight against car theft and registration fraud..

vehicles from EU is not prohibited. A few non-EU countries have regulations to prohibit the import of used vehicles in general or for a distinct age. In general the export statistics is assessed as more reliable than the intra EU statistics. However it is difficult to avoid the transfer to other countries without export notification if no agreements on data exchange are established.

- **MS level:** The contractor recommends setting agreements with relevant third countries (non-EU) to establish a notification process about re-registrations.
- **EU level:** assess to what extend the EC can support the MS in setting agreements with third countries.

Transit

Some countries (in particular Belgium and Germany) report difficulties in the allocation of extra EU exports for the case of transit within the EU before export (sometimes called Rotterdam or Antwerp-Effect). For instance used vehicles are shipped from Germany to Belgium and in the single-stage process or by custom agents from Belgium are systematically not (yet) recorded by the German customs statistics. In result there is an overshooting volume for the exports from Belgium and Netherlands and an underestimation of the exports from France and Germany. Germany reports exports of at least 116,732 used cars in vehicle class M1 for 2013, last registered in Germany, were exported via Belgium but not included in the German extra EU statistics.

Possibly the Implementation E-Customs Decision 70/2008/EC on a paperless environment for customs and trade in EU by 2020 (with reference to the Union Customs Code, Regulation (EU) 952/2013) might reduce this misallocation of the exports of used vehicles.

10. Aspects potentially addressed in a revision of the Commission Decision 2005/293/EC

Several stakeholders supported the approach to address as much as possible of the shortcomings with regard to the unknown whereabouts in a revision of the Commission Decision 2005/293.

In parallel to the aspects of unknown whereabouts there is a Commission's proposal in the waste package currently in co-decision discussions to abandon Commission Decision 2001/753/EC, the questionnaire for MS reports on the implementation of the ELV Directive. Instead to integrate a few relevant aspects of this questionnaire should be introduced into the revised Commission Decision 2005/293/EC.

As mentioned in Chapter 6.7 and displayed in Figure 6-10, the majority of stakeholders supported (and the majority of CMI did not oppose) the proposals A, B, C and H, I, J, K

- A) Article 1(1) of Commission Decision on ELV annual reporting asks for an appropriate description of the data used. To ensure better quality and comparable quality reports, the EC should identify the details addressed by such reports.
- B) The 'current national vehicle market', for which Article 1(3) of Commission Decision asks for a breakdown, should be further described. In particular, more precise data on new registrations, on the change in the vehicle stock and the export/ import of used vehicles, and on the number of ELVs and CoDs would enable a better evaluation of the coverage by country.
- C) MS' Quality Reports and data on their current national vehicle markets should be published in order to establish 'best practice' and improve overall reporting quality.
- H) A harmonised approach to calculate reuse should be introduced, which could perhaps address the subtraction method and/ or metal content assumptions.
- I) In table 1 of the reporting tables in the Annex of the Commission Decision, MS should report the number of CoDs issued by ATFs.
- J) In table 2 of the reporting tables in the Annex of the Commission Decision, MS should report the number of hulks (i.e. depolluted and dismantled vehicles) treated by shredder plants and the number of CoDs received by shredder plants. This would enable better validation of material flows.
- K) In the course of a revision of the Commission Decision on ELV annual reporting, the reporting tables should be adjusted in order to make reporting on recovery other than energy recovery, e.g. backfilling, possible.

Figure 6-11 in Chapter 6.7 displays the numerical evaluation of the responders to suggestion (D) to (G) which are less supported by the respondents.

The stakeholders representing 'Other & Industry group (excluding CMI)' oppose the suggestions (D) and (E) with about 30-40%. This indicates that some recyclers and shredders do not see a necessity to list 'non-ferrous metals' in the reporting table 2)

instead of 'non-ferrous materials' nor do they see a need to distinguish between ferrous scrap and non-ferrous metals when using Metal Content Assumption.

Detailed legal drafting based on the above-mentioned aspects is provided to DG Environment with a separate document for further consideration.

11. General aspects for improvement / enforcement of the ELV Directive

The establishment and the enforcement of the ELV Directive in the year 2000 induced or supported manifold progress in the collection and treatment of ELVs across the EU in result

- the number of wrecks disposed in forest & along the roads is reduced,
- the applied standards for the handling of hazardous liquids and other hazardous components are improved,
- the hazardous components Pb, Hg, Cd, Cr(VI) are reduced in new cars,
- an economically viable sector is grown for depollution / dismantling / reuse with high recovery and high environmental standards,
- advanced technologies are established for recovery of shredder residues and
- research is stimulated on recyclability of new materials/ components and the use of secondary raw materials.

The investigations and consultations for this report focussed on concerns about unknown whereabouts. However during the investigations and consultations also other aspects of the ELV Directive to be discussed became obvious (‘bycatch’). The Table 11-1 displays such aspects; some were already identified in the ‘Ex-post evaluation of certain waste stream Directives’ delivered in 2014³⁹.

Table 11-1: General aspects for improvement for the ELV Directive

Concern	Measure	Comment
Definitions for recycling and energy recovery and some others not coherent with Waste Framework Directive	Harmonisation of definitions of the ELV Directive with the Waste Framework Directive for recycling and energy recovery.	Consequence: As backfilling will not account for recycling and only R1plants will account for energy recovery it might be more challenging for some MS to meet the recycling (+ reuse) and recovery (+reuse) targets of the ELV Directive.
According to the Waste Framework Directive reuse is of higher priority than recycling. However the ELV Directive does not establish targets for reuse.	Establish separate targets for reuse in the ELV Directive	Observation: Netherlands have high reuse rates (in average 2010-2014 = 24% of the ELVs) while Germany and Austria have small reuse rates of 5.2% only.

³⁹ Bio IS, Arcadis, Institute for European Environmental Policy (IEEP) Study Ex-post evaluation of certain waste stream Directives, Final report; EC – DG Environment (18 April 2014)

Concern	Measure	Comment
<p>Article 4 (c) of the ELV Directive addresses the use of secondary raw materials in a general manner. However it is voluntary and no targets and detailed provisions apply.</p>	<p>To be discussed if specific targets for use of different secondary raw materials (metals, plastic, other) for the construction of new vehicles are relevant and applicable.</p>	<p>Assumption: Vehicle production causes relevant demand for raw materials and could induce higher demand for secondary raw material. Crosscutting aspects with the regulations for type approval to be considered⁴⁰</p>
<p>Triggered by marginal economic benefits and ignoring LCA results, environmentally less preferred options are selected by the economic operators to meet the recycling rates.</p>	<p>To be considered if separation before shredder and/ or if advanced separation technologies after shredder should be mandatory to support environmentally preferred options for recycling.</p>	<p>Observation on Down-cycling: Glass (after shredder) for construction purposes, Plastics for low quality recycling or used for drainage of sewage sludge (in preparation to incineration), Aluminium alloys not separated. Observation: Producers do not compensate additional effort to apply environmentally preferred options.</p>
<p>Producer responsibility is hampered by unequal conditions. Depollution & dismantling companies are not strong enough to ask producers for compensation if treatment is economically not viable.</p>	<p>The economical triggers of the depollution and dismantling sector needs to be assessed. Particular attention might be spent to countries with older vehicle stock and ELVs of high age (average near or beyond to 20 years) as for the ATFs in such MS it appears difficult to generate a contribution to profit margin from spare parts dismantled for such old vehicles.</p>	
<p>Restricted substances: Pb, Hg, Cd, Cr(VI). No provisions to review the list.</p>	<p>To be assessed if the intention to keep the recyclable volumes free of contaminants is sufficiently addressed by the existing clauses in the ELV Directive and the REACH and POP regime or if additional substances should be added to Article 4 (2a).</p>	

⁴⁰ DIRECTIVE 2005/64/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 October 2005 on the type-approval of motor vehicles with regard to their reusability, recyclability and recoverability and amending Council Directive 70/156/EEC, OJEU 25.11.2005 L 310/10

Concern	Measure	Comment
<p>New components like IT and small electric devices: a) might need more (manual?) dismantling and detailed information provided by the manufacturers; b) reuse is hampered by security / theft provisions. In result the ATFs are concerned that revenues from selling spare parts for reuse might decline.</p>	<p>Assess if the stipulations of ELV Directive Article 8 (2), (3) and (4) are sufficiently implemented.</p>	<p>According to ELV Directive Article 8(4) manufacturers shall make available to ATFs appropriate information to <u>test components for reuse</u>.</p>
<p>Electric vehicles (with very divers and valuable components) need new dismantling concepts.</p>	<p>Review of research on recyclability of electric vehicles (power batteries, motor, power electronics unit, power train)</p>	<p>To be assessed if the requirements to demonstrate that reuse and recycling for type approval are effectively feasible and under which economic conditions this applies.</p>
<p>Customs services are in charge to distinguish used vehicles from ELV. The provisions to distinguish are not practical.</p>	<p>Establish compulsory rules for the distinction of ELVs and used vehicles; reverse the obligation to produce proof that the vehicle is a used one but not an ELV when exporting to countries other than EU and EEA MS.</p>	<p>The Correspondents' guideline No 9 is considered as not practically applicable by the customs services by twofold reasons: too many vehicles to be inspected and rules are too complicated</p>
<p>Discussions introducing new substances to the POP regulation might have effects on the realisation of the reuse and recycling target.</p>	<p>Assessment of the effects of the POP regulation on the achievement of the reuse and recycling target.</p>	<p>POP Regulation 850/2004 Annex V: 'Where only part of a product or waste, such as waste equipment, contains or is contaminated with POP, it shall be separated and then disposed of in accordance with the requirements of this Regulation.'</p>

<p>Overlaps with Battery Directive.</p>	<p>Assessment of the coherence of ELV Directive and Battery Directive</p>	<p>The recycling target for Li-Ion batteries for vehicle power batteries is, according to the Battery Directive 50% by the average weight (for lead acid batteries it is 65%). Considering the high share of power batteries from the entire electric vehicle weight, such a low recycling rate might jeopardise the achievement of the targets of the ELV Directive.</p>
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12. Annexes

- Annex 6_01: Questionnaire for the public consultations, including introduction, background, key issues and suggestions
- Annex 6_02: Responses to the public consultation: additional suggestions by stakeholders
- Annex 7_01: Questionnaire to the Transport Attachés and the Members of the Roadworthiness Committee.
- Annex 7_02: Responds to Questionnaire sent to the Transport Attachés and the Members of the Roadworthiness Committee.
a) Anonymous version for the public;
b) Version displaying the responding country for the EC.

Stakeholder meeting (21 November 2016):

- Annex 8_01: Agenda
- Annex 8_02: List of stakeholders of the mailing list that receive information emails and were invited to the stakeholder workshop
- Annex 8_03: List of subscribed participants
- Annex 8_04: Minutes
- Annex 8_05: Presentation: J. McCarley, DVLA, UK:
Registration/ Deregistration Procedures in United Kingdom
- Annex 8_06: Presentation: P. Hallett, DEFRA, UK:
Illegal Dismantling
- Annex 8_07: Presentation: J. Kes; P. Kuiper, ARN, Netherlands:
De-registration and monitoring of ELV's in NL
- Annex 8_08: Presentation: R. Kohlmeyer, UBA, Germany:
REGINA – making use of re-registration information to clarify used vehicle exports
- Annex 8_09: Presentation: B. Miraval, MEEM, France:
Ways to fight against illegal sites and illegal activities of end-of life vehicles
- Annex 8_10: Presentation: G. Mehlhart, Oeko-Institut:
Situation of ELVs and unknown whereabouts in the European Union
- Annex 8_11: Presentation: I. Kosińska, Oeko-Institut:
Results of the public consultation
- Annex 8_12: Presentation: G. Mehlhart, Oeko-Institut:
First general findings and recommendations of the study
- Annex 9_01: Lack of coherence regarding ELV Directive and Vehicle Registration Dir (18-10-2016)

