
QUALITY REPORT

*Description of the data submitted according to
Commission Decision 2005/293/EC on the monitoring of the
reuse/recovery and reuse/recycling targets on ELV*

DIRECTIVE No2000/53/EC OF18 SEPTEMBER 2000

DATA FOR THE YEAR 2019

Portuguese Environment Agency

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Data on end-of-life vehicles referring to the year 2019 to the European Commission pursuant to Directive 2000/53/EC of 18 September 2000

Context

Article 7(2) of Directive 2000/53/EC of the European Parliament and of the Council of 18 September 2000 on end-of-life vehicles defines the reuse/recovery and reuse/recycling targets which the Member States should meet for this stream.

With the view to monitor the achievement of the targets, the Commission published the Commission Decision 2005/293/EC of 1 April 2005 that lays down detailed rules for the Member States, specifically including an annex with tables to be completed in order to show whether or not the objectives are achieved.

In this report the Portuguese Environment Agency, as National Waste Authority, presents the results obtained in the management of ELV in Portugal in 2019, thus complying with the obligations to report data.

National legislation and ELV management

Directive 2000/53/EC was transposed into Portuguese law with the publication of Decree-Law No 196/2003 of 23 August 2003, which was amended by Decree-Law No 64/2008 of 8 April, Decree-Law No 73/2011 of 17 June and Decree-Law No 114/2013, of 7 August.

The provisions of this Decree-Law include the setting up of a body to manage an integrated ELV management system which should encourage member operators to ensure that the management targets in question are attained.

Decree-Law No 196/2003 defines the following as general management objectives:

- reduction in the amount of waste arising from vehicles and ELV to be disposed of, and
- continuous improvement in the environmental performance of all stakeholders in the vehicles' life cycle, particularly those directly involved in ELV treatment.

This instrument also provides that operators taking part in the vehicles life cycle should take the appropriate measures so that:

the following targets are achieved by 1 January 2006:

- the reuse and recovery of ELV increase to at least 85%;
- the reuse and recycling of ELV increase to at least 80%.

the following targets are achieved by 01 January 2015:

- the reuse and recovery of ELV increase to at least 95 %;
- the reuse and recycling of ELV increase to at least 85 %.

These targets will only be attained by the combined efforts of the stakeholders, from the manufacturers/importers to operators treating ELV, their components and materials manufacturers, their distributors and final consumers.

Valorcar – Sociedade de Gestão de Veículos em Fim de Vida, Lda. is the body that manages the integrated ELV system in Portugal; it has been responsible for managing this particular waste flow since July 2004. Its licence has been granted, extended or renewed by the following: Joint Order No 525/2004 of 21 August 2004, Joint Order No 6839/2010 of 5 February 2010, Joint Order No 13092/2010 of 3 August 2010, Joint Order No 5959/2016 of 4 of May 2016 and Joint Order No 2178-A/2018 of 1 march 2018.

Figure 1 sets out the ELV treatment circuit.

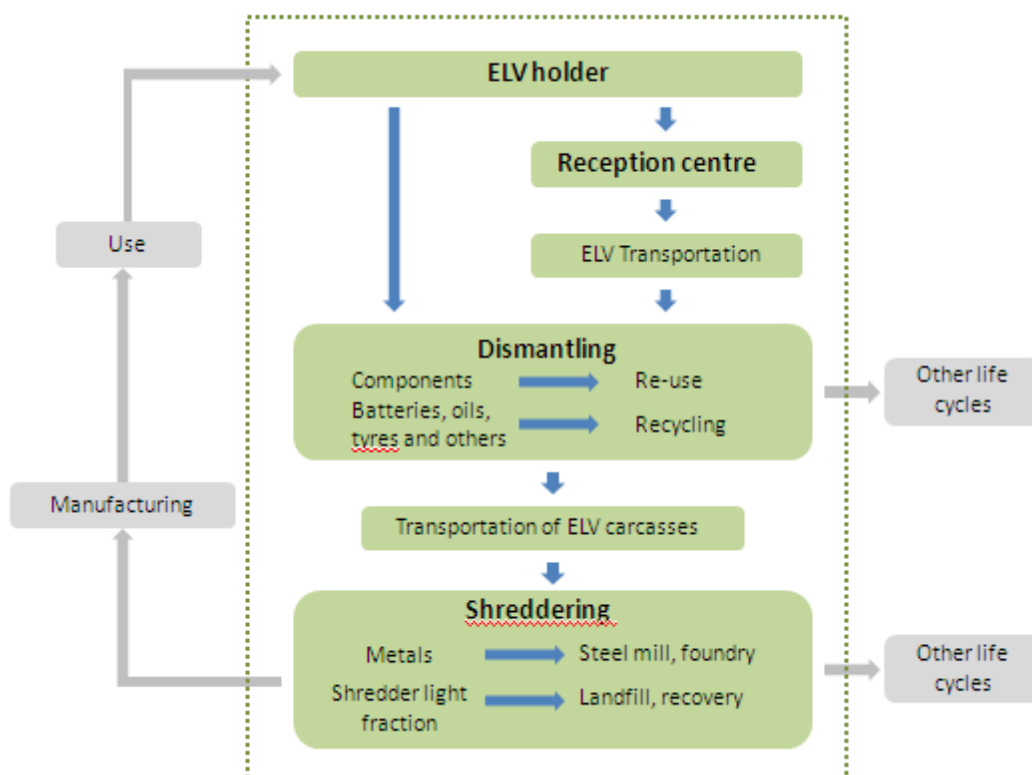


Figure 1 – ELV treatment circuit

Current situation of the national vehicle market

According to data from the ACAP (Automobile Association of Portugal), in 2019 around 262 thousand new light passenger vehicles (figure 2) were registered on national territory by official representatives of the makes, which represents an decrease of 2% (5 356 vehicles) between 2018 and 2019. The Portuguese stock of light vehicles is approximately 6.5 million with an average age of 12,7 for light passenger vehicles according to the ACAP.

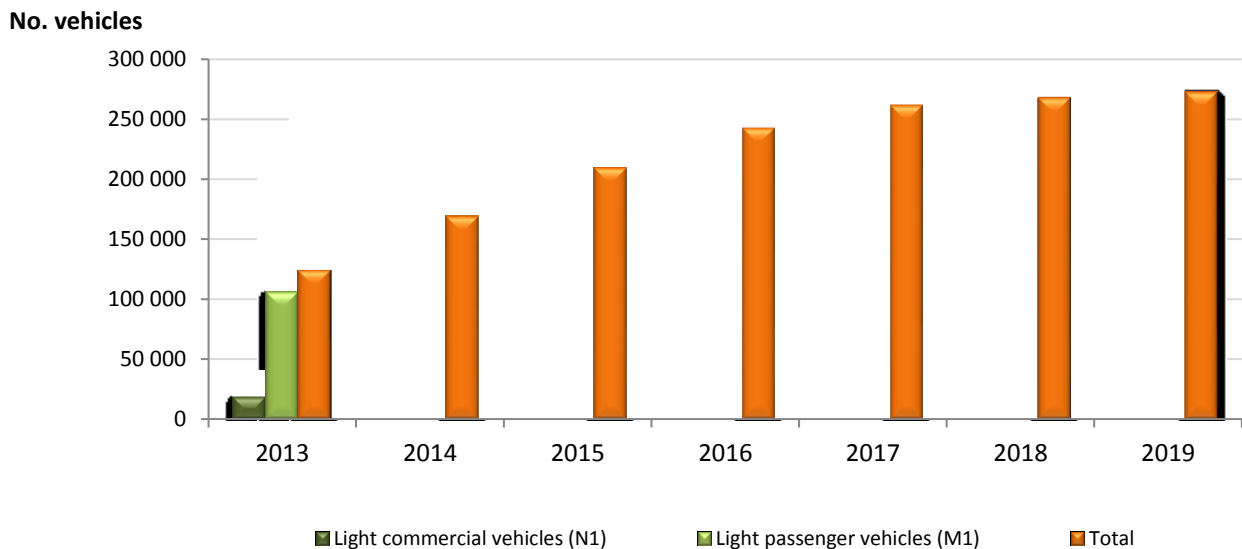


Figure 2 – Number of new light passenger vehicles registered by official representatives of the makes between 2013 and 2019 (Source: ACAP).

Also according to the ACAP, in 2019 around 79 million used light vehicles were imported, corresponding to around 30.3% of the light vehicle market. Thus, there was a raise in the number of used light vehicles imported.

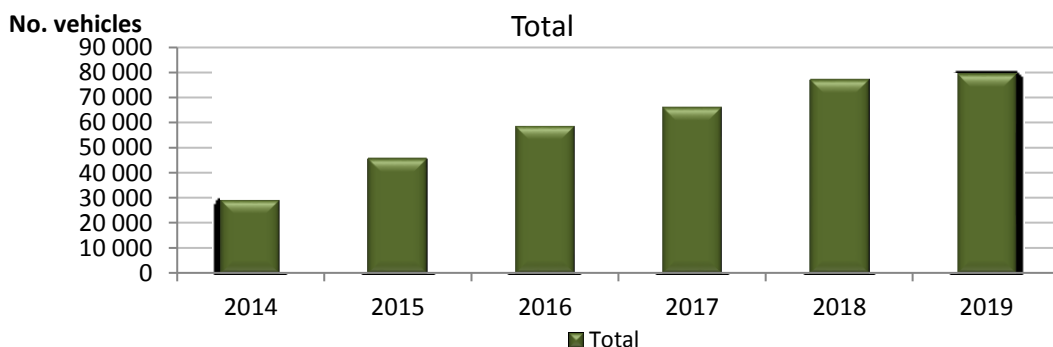


Figure 3 - Number of used light vehicles imported between 2014 and 2019(Source: ACAP).

ELV on national territory

According to information from the dismantlers, 111 112 ELV were received, an increase of 3.64 % (+ 3 903 vehicles) compared to the previous year (Figure 4).

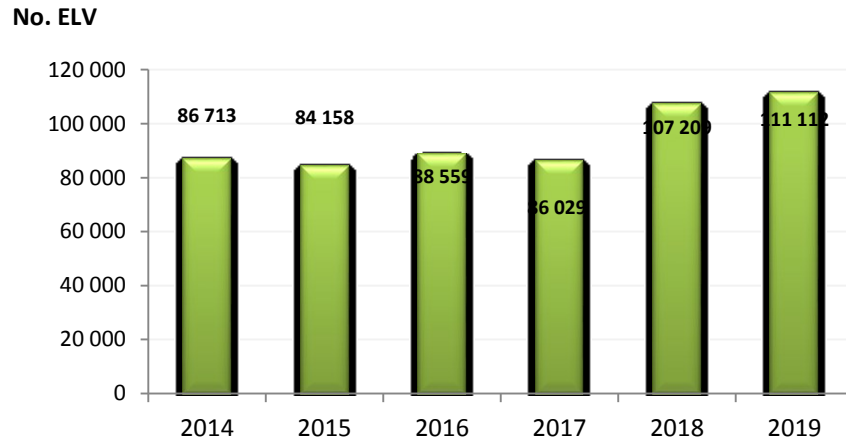


Figure 4 - Number of ELV received by dismantling operators between 2014 and 2019.

The following six graphics (Figures 5 to 9) characterise the ELV received by the dismantlers.

Concerning the category of ELV received, light passenger vehicles (category M1) continue to predominate over light commercial vehicles (category N1).

As may be seen in Figure 5, there was still a wide range in the age of the ELV received, with a difference of more than 40 years between the newest and the oldest. The average age of the ELV received by the dismantlers was 22.1 years.

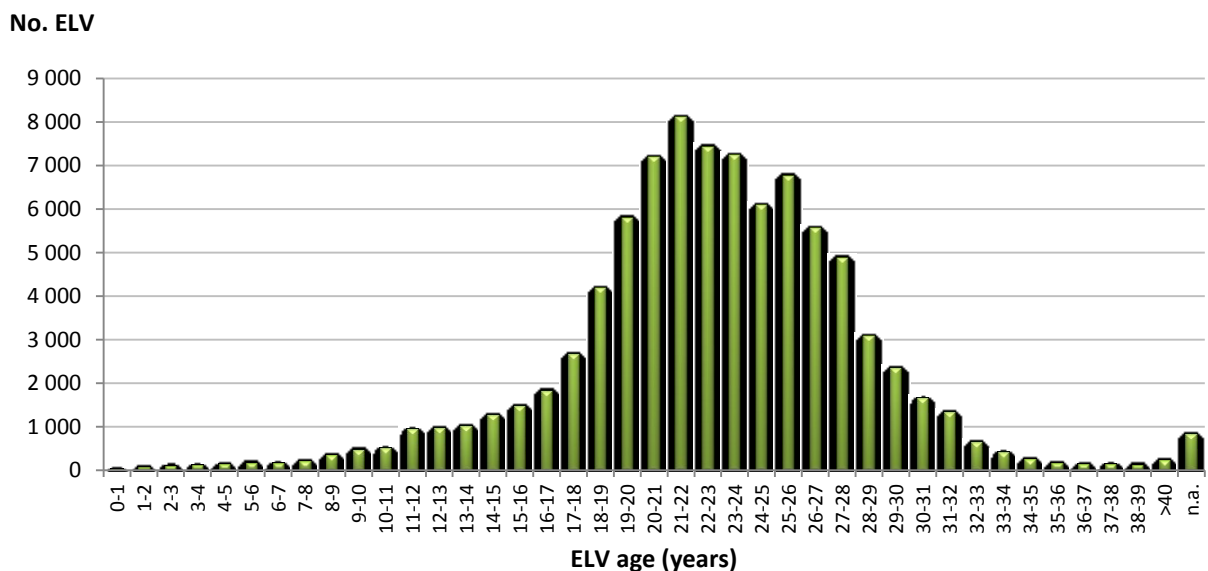


Figure 5 – Age breakdown of the ELV surrendered to the dismantlers in 2019

In 2019, various makes of ELV were again received (Figure 6).

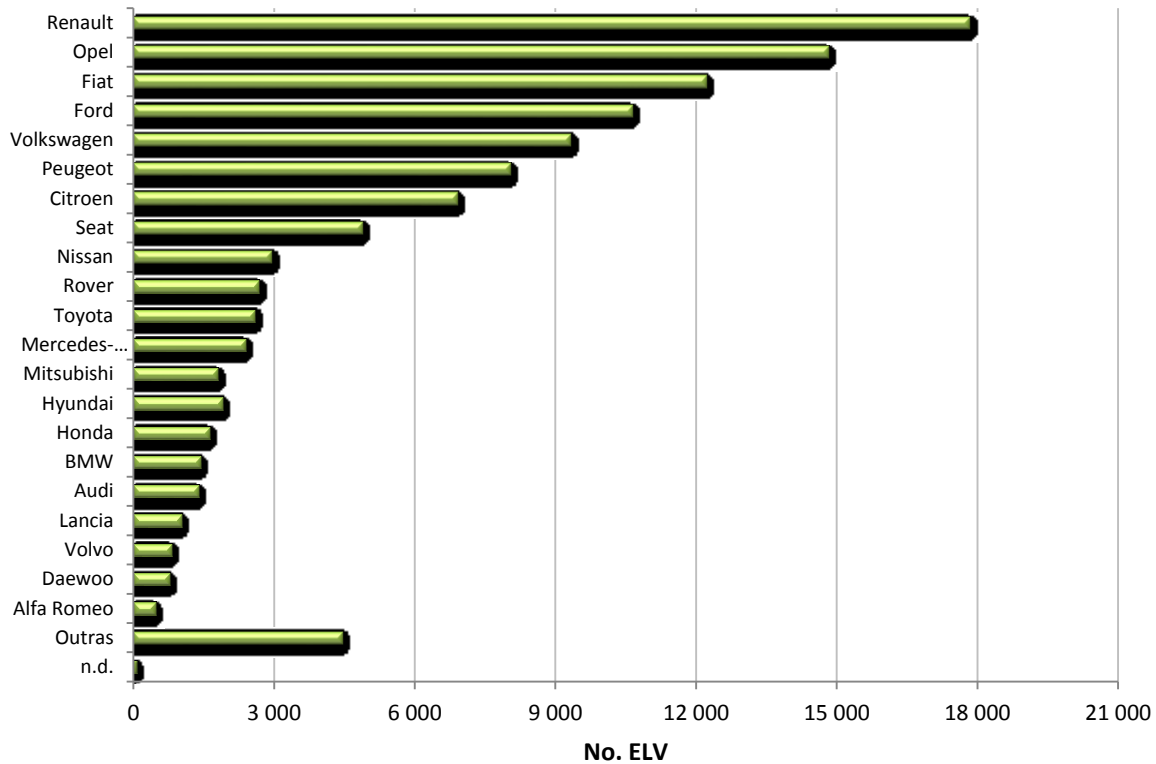


Figure 6 – Breakdown by make of ELV surrendered to the dismantlers in 2019

The vehicle models surrendered were predominantly category B (small light vehicles), which explains the ELV low average weight of 992 kg.

Figure 7 shows the top 10 models surrendered to the Valorcar network.

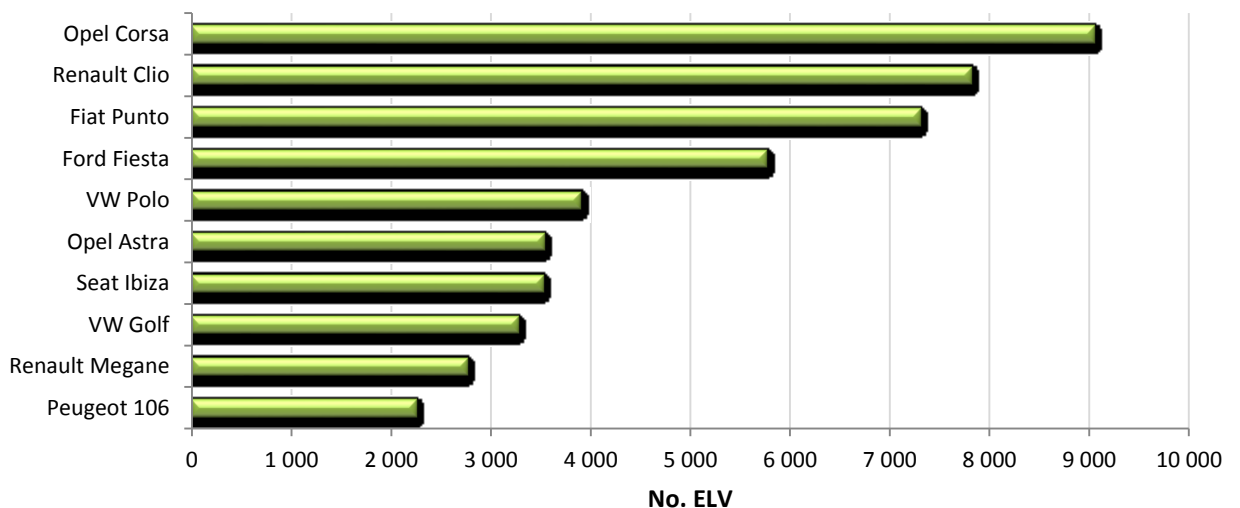


Figure 7 – Breakdown by model of ELV surrendered to the Valorcar network in 2019 (Top10) (Source: Valorcar)

As for the geographical origin of ELV (Figure 8), the Valorcar network received ELV from the 18 districts of Mainland Portugal and the Autonomous Regions of Madeira and the Azores, among which the more populated districts, Lisbon and Porto, stand out as having received the greatest numbers of ELV.

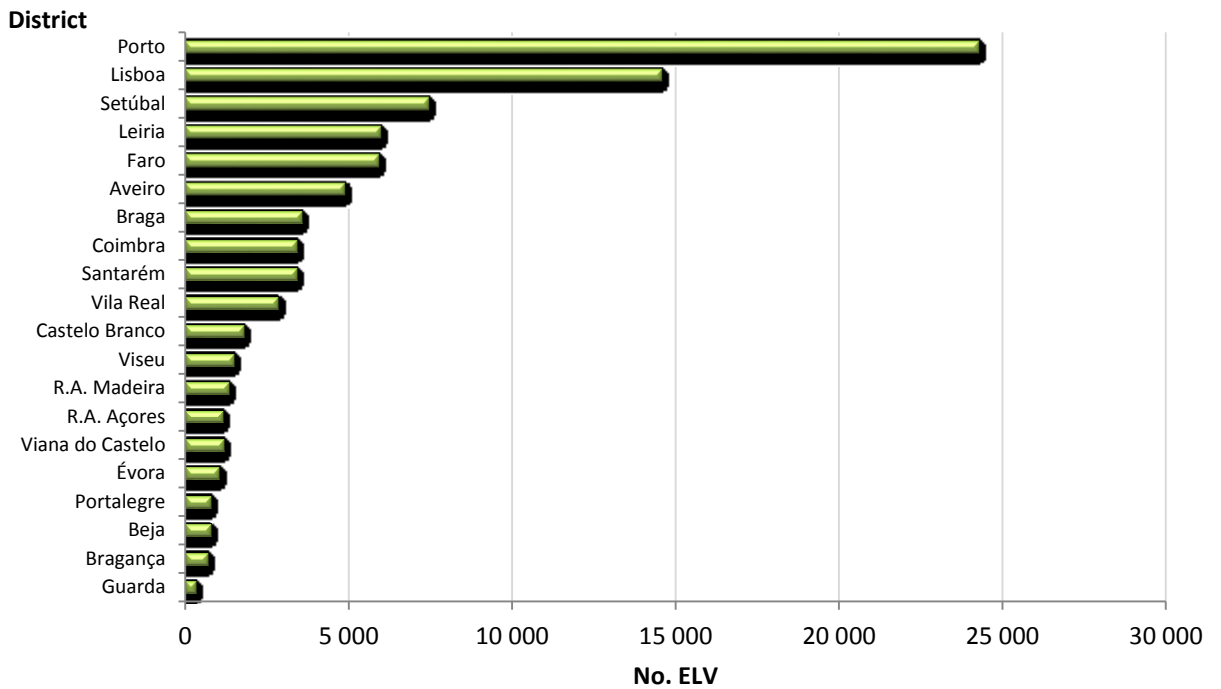


Figure 8 – District of origin of ELV surrendered to the Valorcar network in 2019 (Source: Valorcar).

The components that were most resold for reuse were front/rear lights, doors and bumpers (Figure 9), which are the components most frequently damaged in vehicle collisions. By weight, the most reused components were doors, engines, glass, bumpers, front/rear lights and seats.

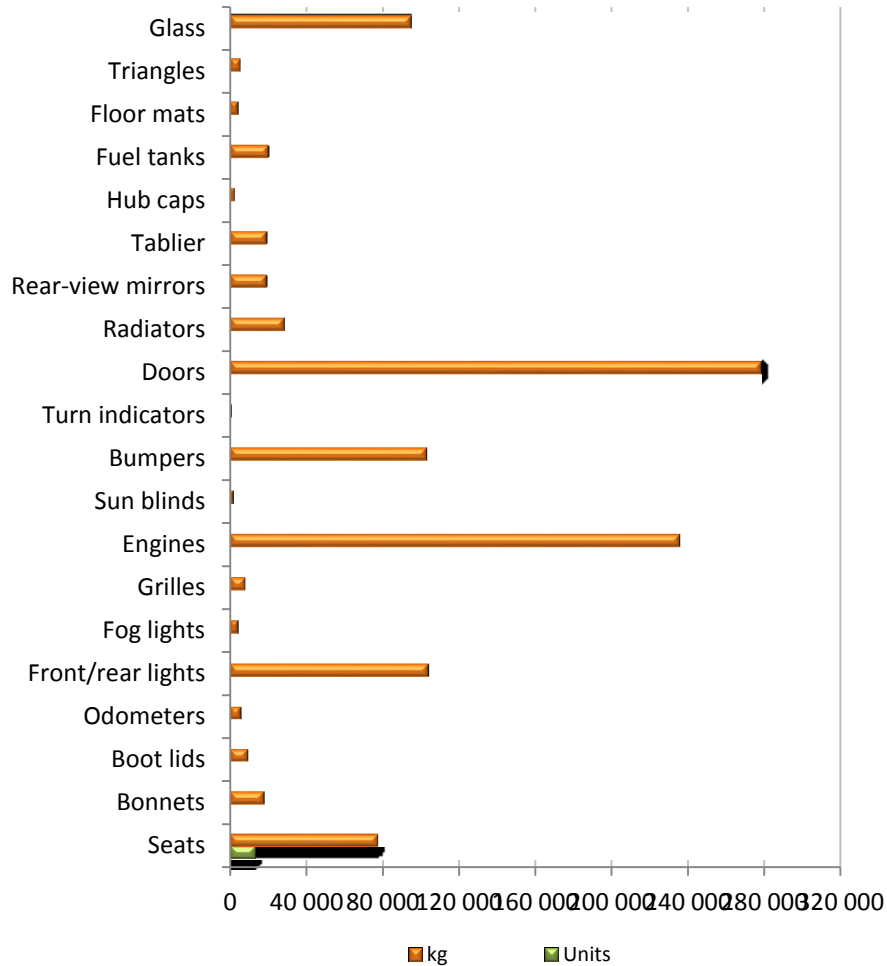


Figure 9 – Components most reused in 2019
(data based on 100% of certificates of destruction issued).

Methodology

Information supplied by the dismantling operators provided the basis for the data on ELV management at national level in 2019 used in completing the tables from the Commission Decision in question.

For the purpose of determining the amount of metal from recovered ELV, the metal content assumption was adopted: the total weight of metals sent for recycling (excluding batteries, filters and catalysts, which have to be removed by law) corresponds to 74,04% of the total weight of ELV received, as provided for in the metal content assumption method established in the shredding campaign (see 'Shredder Campaign').

For the purpose of determining the amounts of materials and components from ELV undergoing reuse, recycling and energy recovery the following assumptions were taken into consideration:

- The total weight of ELV received corresponds to the total tare weight of all the Category M1 and N1 ELV for which a certificate of destruction was issued, obtained as follows:
 - o Vehicle tare shown in its registration documents, not including the weight of the driver, which is set at 75 kg and the weight of the fuel, which is set at 40 kg (ELV with registration documents);
 - o Vehicle tare obtained from a database of the Traffic Authority (IMTT) containing the average tare of all models of vehicles sold in the last 25 years, not including the weight of the driver, which is set at 75 kg and the weight of the fuel, which is set at 40 kg (ELV with no registration documents, e.g. abandoned vehicles).
- When operators that do not belong to the Valorcar network did not respond to the APA's request to provide data on ELV management, the value taken was the number of copies of certificates of destruction issued and received by the management body (to which all operators are obliged to forward the copies). For the remaining cases whose copies of the certificates were not sent to the management body, the number of ELV adopted were those recorded in the Integrated Map of Waste Registration (MIRR). The results for the de-pollution and dismantling of ELV of all the operators outside the Valorcar network that did not respond to the APA's request were extrapolated from the results of those operators that do not belong to the network but did provide that information.
- The total weight of materials sent for recycling and energy recovery corresponds to the total weight of all the materials dispatched by the dismantlers to recycling or energy recovery facilities (information contained in the weighing notes and waybills).

- For dismantlers outside the Valorcar network, information on the destination of materials was obtained directly from the dismantlers themselves or from the Integrated Map of Waste Registration (MIRR) of each dismantler.
- For dismantlers that reported the quantities of used oil by volume a conversion factor of 0,89 was applied.
- In the case of used oil/brake fluid sent to the integrated used oil management system run by Sogilub – Sociedade de Gestão Integrada de Óleos Lubrificantes Usados, Lda., the global results (%) achieved within that system during the current year were applied to the quantities dispatched (90,6% regeneration/recycling and 9,4% disposal);
- Given that the dismantlers send waste tyres to the integrated system of tyre management run by Valorpneu – Sociedade de Gestão de Pneus, Lda., the global results (%) achieved within this system were applied to the quantities dispatched (14,6% reuse, 60,2% recycling and 25,2% energy recovery). The quantities retreaded and prepared for reuse were recorded in the reuse column. Also included in the reuse column were tyres sold for reuse for the same purpose for which they were conceived.
- Regarding refrigerants only the fraction reused is taken into account and consignments dispatched to oil treatment facilities are considered to have been disposed of.
- Internal consumption of filters in the dismantlers of Valorcar network correspond to their processing (dismantling of filters, gravity draining, pressing and processing as scrap) by operators legally recognised to this end.
- Where the total quantity of dispatched consignments of a particular material exceeds the maximum limit to be attributed to ELV (Table 1), the surplus is not counted.

Table 1 - Maximum amount to be attributed to each material per ELV

Material	Maximum amount (kg/ELV)
Batteries	15,0
Catalysts	3,5
Filters	0,5
Brake fluid	0,4
Refrigerants	3,6
Oils	5,5
Bumpers	6,0
Other plastics	50,0
Tyres	35,4
Glass	26,0

The total weight of components sent for reuse corresponds to the sum of the weight of the non-metallic fraction of the 21 most commonly reused components (Table 2).

Table 2 - Maximum non-metallic content to be attributed to the 21 most reused components

Component	kg/unit
Seats	6,1
Bonnets	1,5
Boot lids	2,0
Odometers	0,7
Front/rear lights	2,5
Fog lights	0,7
Grilles	1,1
Engines	12,0
Other glass	6,4
Sun blinds	0,2
Bumpers	5,0
Turn indicators	0,1
Doors	10,2
Radiators	2,0
Rear-view mirrors	1,2
Tablier	5,0
Hub caps	0,5
Fuel tanks	9,0
Floor mats	1,0
Triangles	2,0
Windscreens	12,3

- From 2012, the batteries resold for reuse were taken into consideration separately.

- The most relevant licensed shredding facilities are part of the Valorcar network; the results obtained in the shredding campaign carried out by the management body were therefore adopted for the operators that do and do not belong to the network.
- Comparing to previous years, from 2013 there is a difference in the amount of shredding waste dispatched for the production of Refuse Derived Fuel (RDF) and subsequent co-incineration. Instead of taking into the account only the shredding waste of the ELV received and dismantled in the shredding facilities, it was taken into account the shredding waste of all the ELV. Given that the shredding facilities receive other types of waste and that there is a quantity limit on ELV, it was considered that the amount of shredding waste dispatched to co-incineration cannot exceed the remaining amount of ELV material, which can be recovered, after removal of the materials in the dismantling and shredding process.
Also, in the remaining amount of ELV material sent to co-incineration were considered fractions of filters, oils, brake fluid, non-metallic components including plastics and glass that even after depollution and dismantling remain in the ELV and that can be accounted as energy recovery since they integrate the shredding waste.

Shredder campaign

In 2012 Valorcar conducted a new shredding campaign that focused on the activity of 4 shredding facilities and a total number of ELV of 246. The campaign was based on the following:

- Trials were made in all the shredders to evaluate its efficiency;
- The sample of ELV involved several makes and models;
- The dismantling process was carried out by a representative number of authorised treatment facilities with different dimensions and locations as well as treatment procedures that result in different reuse rates;
- The sample of ELV, facilities, ELV carcasses and shredding waste was random;
- In the depollution and dismantling process all the mandatory materials and components were removed.

Even though trials were made in 4 shredders, 2 were not considered in the metal content calculation: one shredder did not have yet installed equipments for separation of non-ferrous metals; the other shredder had staff changes so the shredding trial was not completely controlled.

Thus, the results of the new campaign are a metal content assumption, based on 2 shredders trials, of 74,04% of the total weight of the ELV. The determined metal content excludes catalysts, batteries and oil filters but these materials are removed mandatorily so they are not subjected to shredding.

Comparing to the 2006 campaign, there is a raise of 1% justified by the installation of new hammer mills and lines of separation of nonferrous metals.

Export of (parts of) end-of-life vehicles

APA, the national competent authority for the application of Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste, published Decree-Law No 45/2008 of 11 March 2008, which aims to implement and monitor compliance with the Regulation in question.

The cross-border movements of waste subject to prior notification and to request information were thus identified (Table 3 and Table 4). Since these data include waste that does not arise exclusively from the de-pollution and dismantling of ELV it shall not be used in this report.

Table 3 – Cross-border movements of waste subject to prior notification from ELV and vehicle maintenance in 2019.

Material	European Waste List Code	Country of destination	Operation ⁽¹⁾	Amounts (t)
Other engine, gear and lubricating oils	130208*	Spain	R9	104
Other engine, gear and lubricating oils	130208*	Norway	R1	1541
Chlorofluorocarbons, HCFC, HFC	140601*	France	D10	32
Lead-acid accumulators	160601*	Spain	R4	12 289

(1) **R4** - Recycling/reclamation of metals and metal compounds; **R9** - Oil re-refining or other reuses of oil; **D1** - Incineration on land

Table 4 – Cross-border movements of waste subject to request information from ELV and vehicle maintenance in 2019.

Material	European Waste List Code	Country of destination	Operation ⁽¹⁾⁽²⁾	Amounts (t)
End-of-life tyres	160103	Spain	R4	59,62
End-of-life vehicles, containing neither liquids nor other hazardous components	160106	Spain	R4	20 770,90
			R13	529,44
			R5	55,79
Ferrous metal	160117	Spain	R4	867,94
			R12	1,00
			R13	1408,98
Non-ferrous metal	160118	Spain	R12	3,35

			R13	0,98
			R4	219,46
Plastic	160119	Spain	R12	117,06
			R5	0,48
		Italy	R3	43,74
Spent catalysts containing gold, silver, rhenium, rhodium, palladium, iridium or platinum (except 16 08 07)	160801	Germany	R4	9,41
			R8	35,37
		Belgium	R8	21,48
			Spain	R4
		R8		8,89
		R13		15,64
		R11		3,76
		Ireland	R4	0,02
		Italy	R13	41,74
		Bulgaria	R4	1,40
		United Kingdom	R4	1,64
R8	34,8			

(1) Subsequent operation.

(2) **R4** - Recycling/reclamation of metals and metal compounds; **R5** - Recycling/reclamation of other inorganic materials; **R8** - Recovery of components from catalysts; **R9** - Oil re-refining or other reuses of oil; **R11** - Use of wastes obtained from any of the operations numbered R1 to R10; **R12** - Exchange of wastes for submission to any of the operations numbered R1 to R11; **R13** - Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced); **D10** - Incineration on land

The table 5 bellow correspond to the declarations from dismantlers of Valorcar network, information taken into account to fill in Table 3 of the annex, plus the data from the end-of-life vehicles, containing neither liquids nor other hazardous components, present on Table 4 above.

The most updated recycling and recovery rates on ELV¹ of the destination countries² were applied to the depolluted exported end-of-life vehicles values, in order to consider the relevant parcel.

Table 5 – Export of waste from ELV in 2019 according to information from Valorcar.

Country of destination	Material	Total weight exported (t)	Total recycling (t)	Total recovery (t)	Total disposal (t)
Spain	Catalysts	136,485	136,485	136,485	0
Spain	Batteries	884.738	884.738	884.738	0
Spain	Tires	275.953	275.953	275.953	0
France	Plastis	58.507	58.507	58.507	0
Spain	Ferrous scrap (steel) from shredding	181.075	181.075	181.075	0

¹ This information was obtained from the Eurostat website, at: <https://ec.europa.eu/eurostat/web/waste/key-waste-streams/elvs>

² Spain recycling and recovery rate on ELV in 2016: 85,4% and 93,4%; Netherlands recycling and recovery rate on ELV in 2014: 86,1% e 96%.

Spain	Non-ferrous material from shredding	3583.616	3583.616	3583.616	0
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In order to avoid double counting of quantities of treated materials, the amounts exported set out in Table 5 were deducted from Tables 1 and 2 in the Annex. The shredding amounts, related to the metal parcel considering the Portuguese metal content assumption, were deducted to the amount of end-of-life vehicles exported, containing neither liquids nor other hazardous components, present on Table 4 above.

Export of used light vehicles

According to the Portuguese Tax and Customs Authority data (Table 8) in 2019, 1505 used light vehicles were exported to the countries identified in Figure 13.

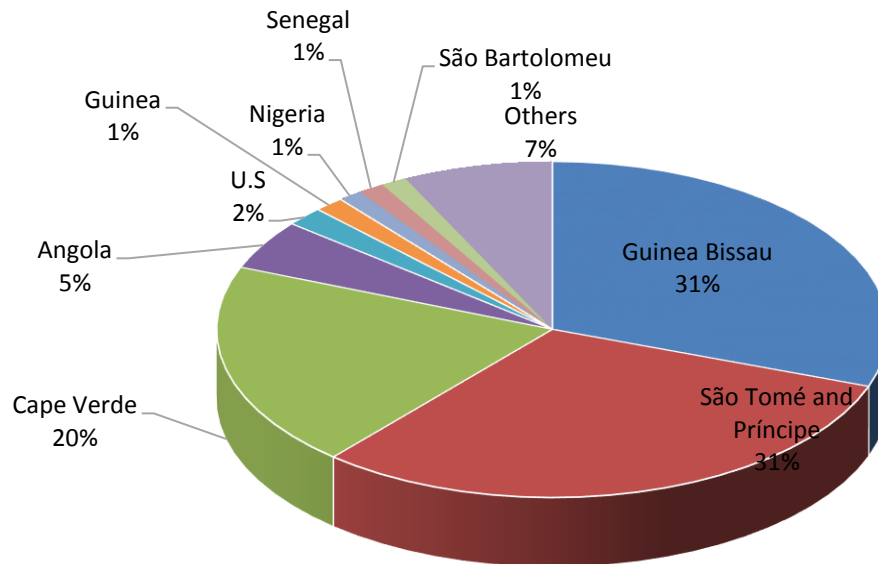


Figure 13 - Used light vehicles exported in 2019
(Source: Portuguese Tax and Customs Authority)

Annex: Tables 1, 2, 3 and 4 from the Annex to Commission Decision 2005/293/EC of 1 April 2005 with data for 2017

Annex

2019 data

**Table 1: Materials from de-pollution and dismantling (in tonnes)
of end-of-life vehicles arising in the Member State and treated within the Member State.**

Materials from de-pollution and dismantling	Reuse (A)	Recycling (B1)	Energy recovery (C1)	Total recovery (D1 = B1 + C1)	Disposal (E1)
Batteries	72	577	0	577	0
Brake fluid	0	21	0	21	2
Air conditioning fluids	0	0	0	0	0
Refrigerants	6	0	0	0	139
Oils	0	520	0	520	61
Oil filters	0	48	0	48	1
Other materials arising from de-pollution (excluding fuel)	0	0	0	0	0
Catalysts	29	113	0	113	0
Tyres	556	2243	1448	3691	5
Large plastic parts	79	880	0	880	1
Glass	126	2214	0	2214	0
Other materials arising from dismantling	4716	0	0	0	1
Total	5584	6596	1448	8064	210

Table 2: Materials arising from shredding (tonnes) of ELV originating and treated in the Member State

Materials arising from shredding	Recycling (B2)	Energy recovery (C2)	Total recovery (D2 = B2 + C2)	Disposal E2
Ferrous scrap (steel)	60358	0	60358	0
Non-ferrous material (aluminium, copper, zinc, lead, etc.)	4119	0	4119	0
Shredder Light Fraction	0	6083	6083	2858
Others	0	0	0	0
Total	64477	6083	70560	2858

Table 3: Monitoring of (parts of) end-of-life vehicles originating in the Member State and exported for further treatment (in tonnes per year)

Country exported to	Material arising from ELV treatment	Total weight exported (t)	Total recycling (F1) (t)	Total recovery (F2) (t)	Total disposal (t)
Spain	Catalysts	136.485	136.485	136.485	0
Spain	Batteries	884.738	884.738	884.738	0
Spain	Ferrous scrap (steel) from shredding	181.075	181.075	181.075	0
Spain	Non-ferrous material from shredding	3583.616	3583.616	3583.616	0
Spain	Tires	275.953	275.953	275.953	0
Spain	Plastics	58.507	58.507	58.507	0

Table 4: Total reuse, recovery and recycling (in tonnes per year) of end-of-life vehicles arising in the Member State and treated within or outside the Member State

Reuse (A)	Total recycling (B1 + B2 + F1)	Total recovery (D1 + D2 + F2)	Total reuse and recycling (X1 = A + B1 + B2 + F1)	Total reuse and recovery (X2 = A + D1 + D2 + F2)
5584	93465	103002	99049	108586
W (total number of ELV) = 111112			88,2%	96,7%
W1 (total vehicle weight) = 112347			X1/W1 = 0,882	X2/W1 = 0,967

Verification of total balance

$$X2 + E1 + E2 + F3 = 100071$$

$$W1 = 104274$$

The equation $X2 + E1 + E2 + F3 = W1$ is not verified in the data collected. There is a difference of 4203 tonnes whose destination is not accounted for in the tables in this Annex. This difference arises mainly because of the following:

- the conditions in which the ELV are surrendered. The basic assumption that the total weight of received ELV corresponds to the total tare weight of all the vehicles shown in the corresponding documents or the vehicle tare obtained from a database of the former DGV is not borne out in practice since the ELV received by dismantlers do not contain all the constituent materials of the vehicles. On the other hand, there may be certain inaccuracies in the total weight of ELV given by dismantlers not integrated in the Valorcar network.
- In some cases, dismantlers not integrated in the Valorcar network did not report the destination or amount of certain materials, which may therefore have remained in storage or not have been quantified or declared.
- In some cases, the dismantlers do not remove certain materials at the dismantling stage. Consequently such materials end up being dispatched with the ELV carcasses for shredding.