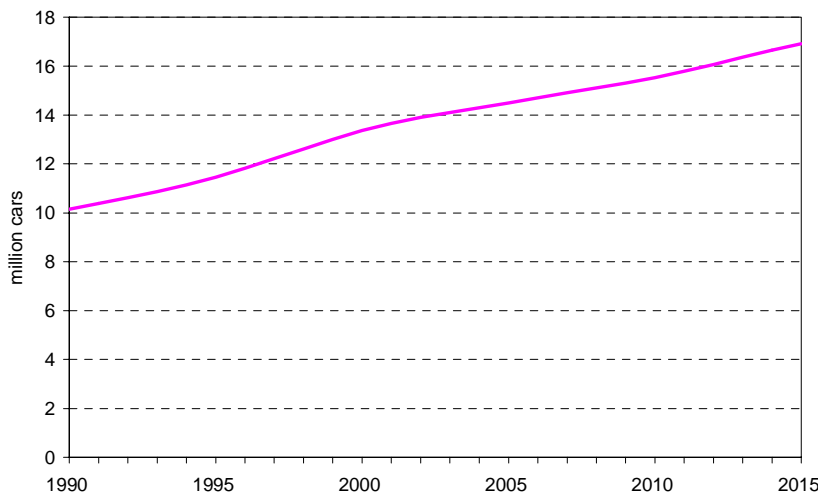


Indicator fact sheet

TERM 2002 11a EU (WMF13) — Generation of waste from end-of-life vehicles

⊗ **A substantial increase in the number of scrapped end-of-life vehicles in the EU + 3 countries is foreseen, due to constant replacement of passenger cars. The number of scrapped cars is estimated to increase by 27 % between 2000 and 2015. This indicates that there is a need to pursue the fulfilment of the targets on recycling and reuse of cars given in the EU waste strategy.**

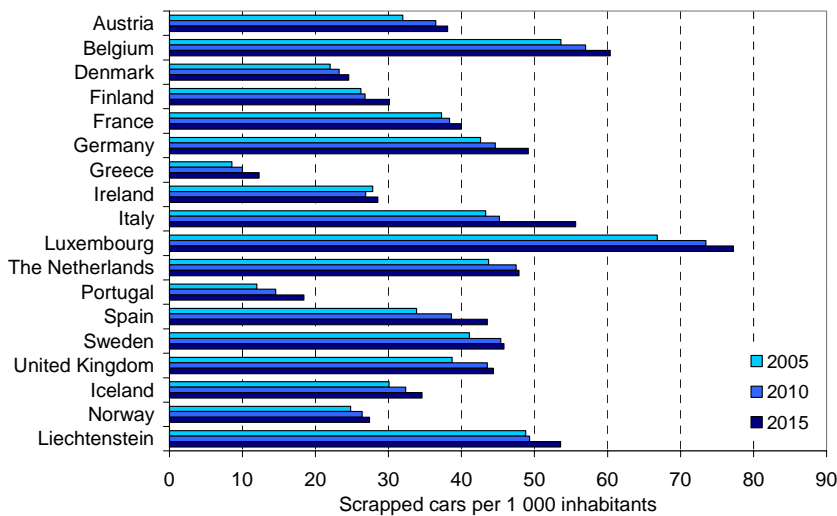
Figure 1: Modelled estimated number of scrapped cars in EU-15 + 3



NB: EU-15 + 3 refers to the 15 EU Member States and Iceland, Liechtenstein and Norway. The stock of cars in EU-15 + 3 was approximately 145.7 million cars in 1990. The development in scrapped cars and the estimates show a steady increase in stock. The scenario foresees about 213.8 million cars in 2015.

Sources: EEA-ETC/WMF, 2000; EEA-ETC/WMF, 2001.

Figure 2: Modelled estimated numbers of scrapped cars per capita in selected countries



Sources: EEA-ETC/WMF, 2000; EEA-ETC/WMF, 2001; United Nations population statistics.

Results and assessment

Policy relevance

The specified targets of EU waste management strategy (European Commission, 1996) are to reuse or recycle as much waste as possible. In the EU directive on end-of-life vehicles (Directive 2000/53/EC⁽¹⁾) this is emphasised through the targets set up on treatment of scrapped cars. Before 2006, 80 % of the waste from car scrapping should be reused or recycled and, by the year 2015, 85 % should be reused or recycled. For recovery, the targets are 85 % for 2006 and 95 % after 2015.

Policy context

The directive on end-of-life vehicles is new and has a strong focus on recovery, reuse and recycling of cars. As a consequence, Member States will need to focus on improvement in the dismantling and shredder industry.

Environmental context

Existing cars contain materials such as lead, mercury, cadmium, hexavalent chromium and other environmental harmful substances. By weight, about three-quarters of a car is steel and aluminium, which is recycled. The rest, which is mainly plastics, is disposed of by incineration or in landfills. Cars also contain dangerous liquid substances (anti-freeze, brake fluid, oil, etc.) that are harmful to the environment if not handled properly.

Assessment

According to the modelled estimates, the number of scrapped cars increased by approximately 28 % between 1990 and 1999. In 1999, a total of 13 million cars were scrapped in the EU-15 + 3, which corresponds to 7.5 % of the entire vehicle fleet in that year. On average, approximately 34 cars per 1 000 inhabitants were scrapped in the EU-15 + 3 in 1999, with wide variation between countries. The highest numbers of scrapped cars per 1 000 inhabitants can be observed in Luxembourg (61) and Belgium (49), the lowest in Greece (6) and Portugal (8).

According to the estimates, the amount of scrapped cars will increase by approximately 21 % between 2000 and 2015, from 13.4 million to about 17 million. The objective of a recovery rate of 85 % will be more difficult to reach taking this projected increase into consideration. There will be a need for enhancement of processing technologies and facilities.

There are five countries (Spain, Germany, France, Italy and the UK) that stand out from the rest of the countries by accounting for about 82 % of all scrapped cars and 80 % of the total population in EU-15 + 3.

References

European Commission, 1996, 'Communication from the Commission on the review of the Community strategy for waste management', COM(96) 399, Commission of the European Communities.

EEA-ETC/WMF, 2000, *Scrapping of passenger cars*, assessment/scenario made for the European Topic Centre on Waste and Material Flows of the European Environment Agency (EEA-ETC/WMF), Risø National Laboratory (Kilde, N., and Larsen, H.), Denmark, December 2000.

EEA-ETC/WMF, 2001, *Scrapping of passenger cars in 16 accession countries to the European Union until 2015*, assessment/scenario made for the European Topic Centre on Waste and Material Flows of the European Environment Agency (EEA-ETC/WMF), Risø National Laboratory (Kilde, N., and Larsen, H.), Denmark, December 2001.

Eurostat, 2000, *Waste generation in Europe (2000 edition)*, Joint questionnaire 1998 and 2000.

(¹) OJ L 269, 21.10.2000, pp. 34–43.

Eurostat, 2002, NewCronos population urban/rural: <http://europa.eu.int/comm/eurostat/>
 United Nations population statistics, 2001: <http://esa.un.org/unpp/>

Data:

Table 1: Modelled number of scrapped passenger cars

Unit: Number of scrapped cars per 1 000 inhabitants

	1990	1995	1999	2005	2010	2015
Austria	22	24	26	32	36	38
Belgium	41	46	50	54	57	60
Denmark	19	20	21	22	23	25
Finland	19	23	26	26	27	30
France	33	33	35	37	38	40
Germany	30	33	37	43	45	49
Greece	2	4	6	9	10	12
Ireland	21	19	24	28	27	29
Italy	28	32	39	43	45	56
Luxembourg	49	55	61	67	73	77
The Netherlands	39	41	43	44	48	48
Portugal	4	5	8	12	15	18
Spain	20	22	29	34	39	44
Sweden	35	39	40	41	45	46
United Kingdom	28	35	36	39	44	44
Iceland	26	30	31	30	32	35
Norway	22	26	26	25	26	27
Liechtenstein			44	49	49	54

NB: No NewCronos data for population in Liechtenstein in 1990 and 1995.

Sources: Modelled estimation by ETC/WMF, 2002; population data from Eurostat, 2002; United Nations population statistics, 2001.

Table 2: Scrapping of passenger cars (collected data)

Unit: 1 000 tonnes

	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Austria			250			240				165		
Belgium								154				
Denmark							121	70	83	107	156	
France				1 400						1 400		
Greece					20					1		
Ireland								52			30	
The Netherlands		547	411	369	306	249	331	350	251	257		
Norway			72	81	82	84	81	93	324	65	115	126
Sweden	99	108	131	119	182	135	104	93	98	119	115	130
Switzerland			280		240				97			

Source: Eurostat, 2000.

File: TERM 2002 11a EU — Waste from road vehicles (elv).xls

Metadata

Technical information

1. Data source: EEA–ETC/WMF, 2000; EEA–ETC/WMF, 2001, for number of scrapped cars. United Nations population statistics, 2001, for estimations of population in EU-15 + 3 in 2005, 2010 and 2015. Data on car density 1970–98 used for the modelling are from Eurostat (*EU transport in figures, Statistical pocketbook 2000*).
2. Description of data: Projections for scrapped cars are in numbers and all figures used for the estimations of scrapped cars are provided by Eurostat. The number of scrapped cars is estimated by means of a model, which uses information on car density in EU Member States combined with information on development of the EU population and the expected lifetime-function of new cars in the respective Member States (see EEA–ETC/WMF, 2000, and EEA–ETC/WMF, 2001, for more detailed information).
3. Geographical coverage: EU Member States and Iceland, Liechtenstein and Norway (EU-15 + 3)
4. Temporal coverage: The number of scrapped cars is projected by using data on Eurostat figures on car density 1970–98. These figures are used in the model to project the number scrapped from 1970 to 2015
5. Methodology and frequency of data collection: Yearly collection of population and car density, which are the input variables for model estimations.
6. Methodology of data manipulation, including making 'early estimates': The methodology used is a scenario model on the development of trends on ELV. (For information on Liechtenstein, Switzerland and Norway, see fact sheet TERM 2002 11a AC — End-of-life vehicles (ELV).) The methodology has been described in EEA Technical report No 28, *Baseline projections of selected waste streams — development of a methodology*.

Quality information

1. Strength and weakness (at data level): The directive on end-of life vehicles is a new one, therefore data from the Eurostat on number of end-of life vehicles is scarce. Instead, model estimates have been used.
2. Reliability, accuracy, robustness, and uncertainty (at data level): There are some 'factual' explanations of differences that could be seen between the data in the projections and the data reported through the joint questionnaire. In the data section, both the collected data and, especially, the lack of collected data can be seen. If used cars are exported they will not be reported as waste from end-of life vehicles. Net import of used cars will have the opposite effect. Old cars stored for spare parts or illegally disposed of will probably not be reported as waste from end-of-life vehicles.
3. Overall scoring (give 1 to 3 points: 1 = no major problems, 3 = major reservations): 2
Relevancy: 2 (Volume of waste only, rather than volume and type of waste.)
Accuracy: 3 (Modelled data rather than based on vehicle registrations.)
Comparability over time: 1
Comparability over space: 1

Further work required

Updating of Weibull parameters is not included in this project but is recommended in a coming version of the model as there are indications that newer cars have a longer lifetime than older cars. The reason is supposed to be better corrosion protection and, therefore, mainly relevant for northern countries.

Further information on the outlet of end-of-life vehicles and the environmental impact of the shredder industry and the different options in treatment of cars is required.

The indicator should in time be expanded to also show the treatment of scrapped cars, in order to make it possible to evaluate if the recovery, reuse and recycling targets are achieved.

Furthermore, the number of end-of-life vehicles should be determined by using registration and deregistration information rather than models.