

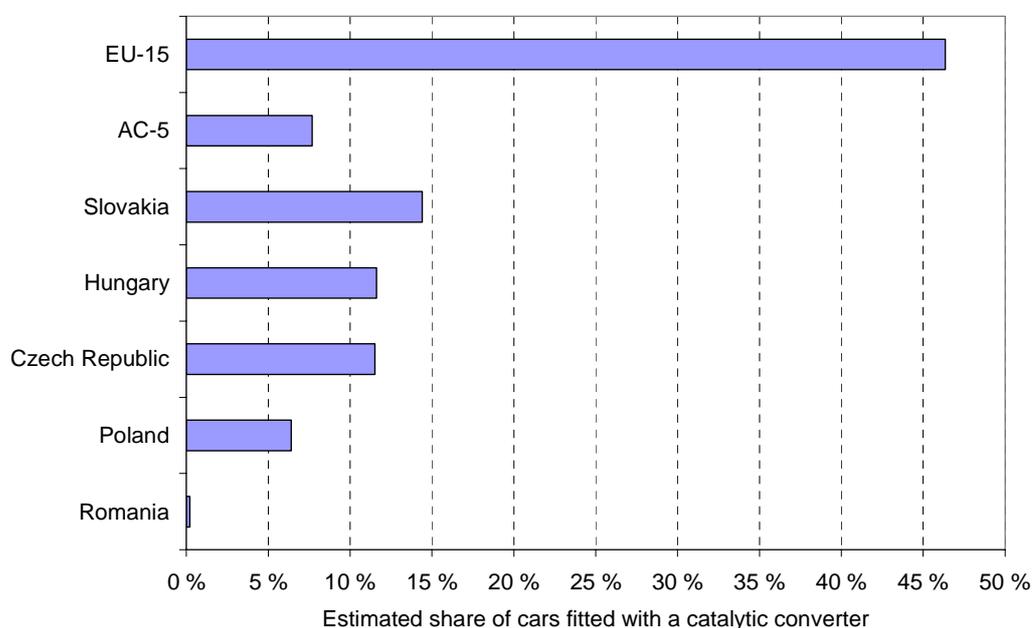


Indicator fact sheet

TERM 2002 34 AC — Proportion of vehicle fleet meeting certain emission standards (by mode)

☺ The penetration of vehicles equipped with a catalytic converter was limited compared with the corresponding EU-15 situation in 1996 — the only year for which such data are available. The lack of time series hampers a full assessment of the evolution over time of the number of cars fitted with a catalytic converter and thus of the rate of penetration of new technologies.

Figure 1: Estimated share of petrol vehicles fitted with a catalytic converter in the accession countries in 1996



NB: No data were available for Bulgaria, Estonia, Latvia, Lithuania and Slovenia.

Sources: REC, 1998; Eurostat, 2002; UNECE, 2001.

Results and assessment

Policy relevance

With the aim to lower the environmental and health impact from motorised transport, the EU has developed fuel quality (see TERM 2002 31 — Uptake of cleaner fuels) and vehicle emission standards. However, no target exists specifying or determining the fraction of the vehicle fleet that should meet these standards.

As part of the accession process, the accession countries need to bring their national legislation into line with EU legislation. Increasingly tight emission standards in the EU countries (see TERM 2002 34 EU — Proportion of the vehicle fleet meeting certain air and noise emission standards) have resulted in the gradual introduction of less-polluting and noiseless road vehicles, which has in turn lowered the environmental pressure of transport (see TERM 2002 03 EU — Transport emissions of air pollutants).

Policy context

Regarding the ACs' alignment with the EU's environmental *acquis* in the sector of implementation of air emission standards, significant progress has been reported from Bulgaria, Estonia, Poland and Romania, while some progress has been made in the Czech Republic, Hungary, Latvia, Slovakia and Slovenia. Less progress has been made in Lithuania. In the sector of noise emissions from vehicles, progress is quite limited. Except for the Czech Republic, where some measures have been proposed from the government's side, and Hungary, in the case of which alignment with the relevant directive has been mentioned, there is no indication on the progress of other accession countries towards harmonising and integrating the standards imposed by EU legislation (European Commission, 2001).

EU legislation on emissions from passenger cars applies only to new vehicles. Until the whole vehicle fleet is renewed, the overall effect of legislation will depend on phasing out older cars. Since the average age of the vehicle fleet in the ACs is much higher than that of the EU (see TERM 2002 33 AC — Average age of the vehicle fleet) the environmental benefit of new technologies in the ACs may be significantly delayed.

The introduction of scrappage schemes (or other financial incentives) will obviously increase the share of cars fitted with a catalytic converter, since it decreases the average age of cars and thereby increases the rate of penetration of new cars in the vehicle fleets. At present, however, information on implementation of car scrappage schemes in the ACs is available only for Hungary. Hungary has implemented the scrapping of old cars since 1993 (ECMT, 1999).

Additionally, import bans on second-hand vehicles that do not comply with certain emission standards help to increase the environmental performance of the vehicle fleet.

Environmental context

Poor air quality affects human health, ecosystems, crops and buildings. Transport contributes significantly to the impairment of air quality through pollutant emission (see TERM 2002 03 — Transport emissions of air pollutants). Setting more stringent emission standards and switching to more environment friendly fuels (see TERM 2002 31 — Uptake of cleaner fuels) contribute to improving air quality. Due to data limitations, the share of cars fitted with a catalytic converter is used as an indication of the environmental performance of the passenger car fleet (the most important mode in passenger transport).

Noise emissions affect human health as well as ecosystems (see TERM 2002 05 — Exposure to and annoyance by traffic noise). Setting more stringent noise emission standards for vehicles (see TERM 2002 34 EU — Proportion of vehicle fleet meeting certain air and noise emission standards) and aircraft eventually leads to less noise exposure and annoyance.

Assessment

The rate of renewal of the passenger car fleet in most accession countries is estimated to be low, since this fleet has a relatively high average age and low shares of new technology vehicles (e.g. vehicles equipped with a catalytic converter). In 1996, the share of passenger cars fitted with a catalytic converter in the ACs was between 0.2 and 14.4 %, while in the EU these figures reached 22 to 80 %.

The introduction of catalytic converters and, accordingly, the phase-out of leaded petrol will impact on a large percentage of the ACs' vehicle fleet. The percentage of passenger cars and light-duty vehicles equipped with petrol engines varies in the ACs, ranging from 78 % in Romania to 94 % in the Czech Republic. In addition, Bulgaria and Romania use a number of heavy-duty vehicles and buses equipped with petrol engines (2 and 5 % of the total number of vehicles per country, respectively), which constitute some 40–50 % of the total number of petrol-engined heavy-duty vehicles and buses in the ACs. In all the ACs, the share of diesel-driven passenger cars is small — between 6 and 12 % of the total number of vehicles (see Table 2).

In 1996 a small fraction of the petrol-driven vehicles had a catalytic converter, with wide variations between the accession countries (see Figure 1). The lowest share in 1996 was observed in Romania (close to 0 %) and the highest in Slovakia (14.5 %). No data were available for Estonia, Latvia, Lithuania, Slovenia and Bulgaria. The average share of vehicles fitted with a catalytic converter in the ACs is estimated to be approximately 7.7 % and is found to be significantly lower than the corresponding 1996 EU-15 figure (46 %).

References

ECMT, 1999, 'Conclusions and recommendations on scrappage schemes and their role in improving the environmental performance of the car fleet', CEMT/CM(99)26/FINAL, European Conference of Ministers of Transport, June, 1999 (<http://www1.oecd.org/cem/topics/env/CM9926Fe.pdf>).

European Commission, 2001b, '2001 regular report on ACs' progress towards accession' SEC(2001)1744, SEC(2001)1746-50, SEC(2001)1752-55, Commission of the European Communities, Brussels, Belgium, November 2001 (<http://europa.eu.int/comm/enlargement/report2001/>).

Eurostat, 2002, *Transport and environment: statistics for the transport and environment reporting mechanism (TERM) for the European Union, data 1980–2000*, unpublished electronic update, January 2002.

REC, 1998, *Sofia initiative on local air quality — Phase-out of leaded gasoline — Synthesis report*, Regional Environmental Centre for Central and Eastern Europe (REC), Szentendre, Slovak Republic, May 1998 (<http://www.rec.org/REC/Publications/LeadOut/Lead.pdf>).

UNECE, 2001, *Annual bulletin of transport statistics for Europe and North America*, United Nations Economic Commission for Europe, data received by e-mail, July 2001.

Data

Table 1: Share of petrol vehicles fitted with a catalytic converter in 1996, by country

Unit:	%
	Share
Romania	0.2
Poland	6.4
Czech Republic	11.5
Hungary	11.6
Slovakia	14.4
AC-5	7.7
EU-15	46

Source: REC, 1998; Eurostat, 2002; UNECE, 2001.

Table 2: Structure of the vehicle fleet in the ACs in 1996

Unit:	% Passenger cars and light duty vehicles		% Heavy duty vehicles and buses	
	Petrol engines	Diesel engines	Petrol engines	Diesel engines
Bulgaria	89.0	6.3	1.9	2.8
Czech Republic	93.9	6.1		
Hungary	85.8	10.6	0.5	3.1
Poland	86.2	7.4	0.6	5.7
Romania	77.9	8.1	5.0	9.1
Slovakia	85.6	2.2	0.3	11.9
Slovenia	86.8	12.4	0.0	0.8

Source: REC, 1998.

Spreadsheet file: TERM 2002 34 AC — Emission standards.xls

Metadata

Technical information

1. Data source: Regional Environmental Centre for Central and Eastern Europe (REC, 1998); Eurostat, 2002 (for EU data); UNECE, 2001 for AC vehicle fleet statistics.
2. Description of data: Share of petrol-engined cars fitted with a catalytic converter: data for ACs obtained from the Regional Environmental Centre for Central and Eastern Europe (REC, 1998); data for EU-15 countries obtained from Eurostat (Eurostat, 2002).
3. Geographical coverage: AC-5 (Czech Republic, Hungary, Poland, Romania and Slovakia). No data were available for Bulgaria, Estonia, Latvia, Lithuania and Slovenia.
4. Temporal coverage: Data available only for the year 1996.
5. Methodology and frequency of data collection: Unknown. The limited data obtained so far (complete lack of time series) imply that a methodology for data collection does not exist.
6. Methodology of data manipulation, including making 'early estimates': AC-5 average is calculated by using data for the size of the vehicle fleet (UNECE, 2001) in the ACs in 1996. For each country, the share of cars fitted with a catalytic converter times the total number of cars is calculated. Summing the result of the five countries, divided by the total number of cars in these five countries results in the average AC-5 share.

Quality information

1. Strength and weakness (at data level): Data were derived from REC and Eurostat, which are considered to be reliable data sources. However time series are missing and data was available for only 5 out of 10 countries.
2. Reliability, accuracy, robustness, uncertainty (at data level): Ambiguous, although data were derived from a reliable data source.
3. Overall scoring (give 1 to 3 points: 1 = no major problems, 3 = major reservations): 3
Relevancy: 3 (Catalytic converters are just one aspect of emission standards for vehicles (and cover only petrol engined cars for road vehicles).)
Accuracy: 3 (Data refers to 1996, which is no longer representative.)
Comparability over time: 3 (No time series available.)
Comparability over space: 3 (Only a limited number of countries available, possibly using different methodologies in making estimations.)

Further work required

Ideally, this indicator contains an overview of the entire vehicle fleet (all modes) and the (noise and pollutant) emission standards they comply with, as well as data on vehicle maintenance, control programmes and their enforcement.

In questionnaires submitted to the EEA from ACs, certain countries (the Czech Republic, Latvia, Lithuania, Hungary) indicated that data exist on the share of cars fitted with a catalytic converter. However, these data are not regularly reported to any international organisation (e.g. UNECE, ECMT). Streamlining data exchange seems therefore necessary.