Monitoring of ACEA's commitment on CO_2 Emission Reduction from Passenger Cars (1995-1999)

Final version

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Joint Report
of the
European Automobile Manufacturers Association
and
the Commission Services

Annex 1

Joint Monitoring by European Commission and ACEA of Environmental Agreement on CO_2 Emission Reduction from Passenger Cars

ES SUMMARY OF PROGRESS IN DELIVERING THE AGREEMENT

E1 Trends in specific emissions of CO_2 (g/km) *(averaged over all newly registered passenger cars for the EU and for Member States: 1995-1999)*

On an EU-wide basis, ACEA's CO_2 emissions have decreased steadily, achieving in total reductions of more than 6% over the reporting period. From a new car average of 186 g/km in 1995, ACEA's CO_2 emissions reduced to 174 g/km in 1999. In each year since 1995 sizeable cuts have been achieved, culminating in a 2% reduction from 1998 to 1999.

ACEA CO_2 figures by fuel-type show that, between 1995 and 1999, new gasoline-fuelled cars reduced average CO_2 emissions by 4.3%, and for diesels there was a reduction of 8.5%. This corresponds to respectively 180 g/km and 161 g/km in 1999. In 1998 and 1999, the market share of diesel cars showed some expansion, as technically-advanced new direct-injection (DI) diesels came to market. A short-term increase in the market share of diesel cars is in line with expectations.

In broad terms, this EU performance was replicated in all the Member States (See Annex). Also at Member State-level, many markets showed greater interest in diesels as new direct injection models became available (see Annex).

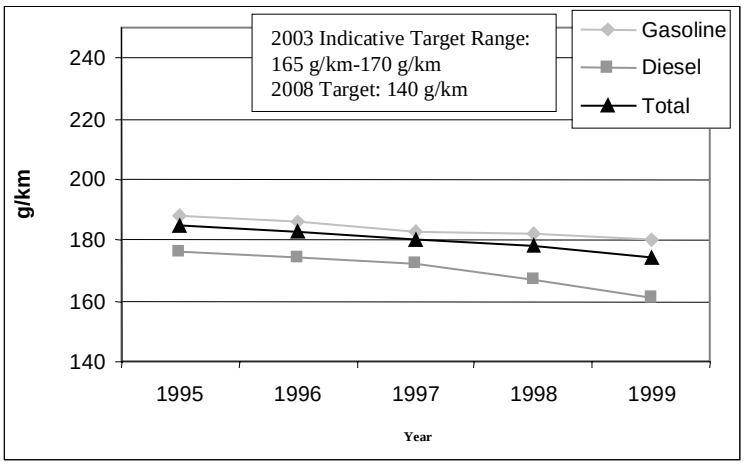


Figure 1: EU Trends of ACEA's fleet in specific average emissions of CO_2

E2 Trends in specific fuel consumption by fuel type (l/100km) *(averaged over all newly registered passenger cars for the EU and for Member States: 1995-1999)*

Between 1995 and 1999, new gasoline-fuelled cars and diesels cars have reduced their average fuel consumption from 7.9 l/100km to 7.5 l/100km and 6.6 l/100km to 6.0 l/100km, respectively.

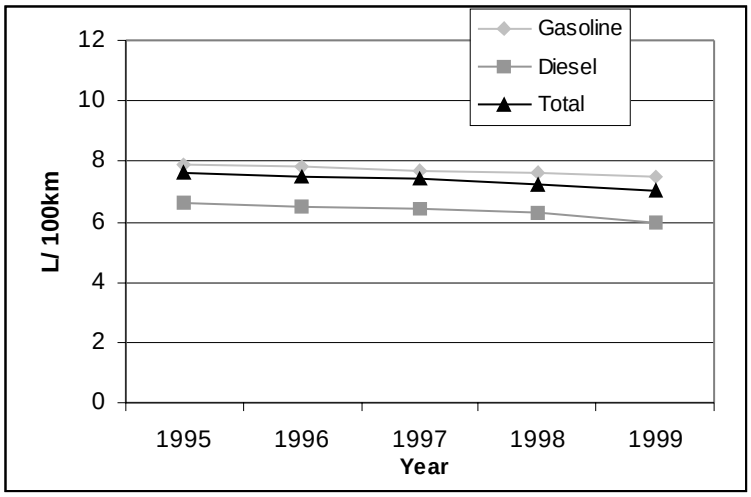


Figure 2: Trends of ACEA's Fleet in specific average fuel consumption by fuel type

Trends in specific fuel consumption in the Member States are presented in the Annex.

E3 Trends in physical fleet characteristics *(mass (kg), engine capacity (cm^3), engine power (kW)) averaged over all newly registered passenger cars in the EU (Optional) (1995-1999)*

Car physical characteristics have drifted upwards. Average engine capacity has remained nearly constant between 1995 and 1999 (+2.7%), whereas average car mass and engine power have increased by 8% and 12.7% over the reporting period. Mass increases have resulted from a range of factors such as: car safety improvements; other automotive regulations; the increased diesel car share; and customer-driven vehicle utility enhancement.

E4 Technical developments introduced to reduce CO_2 emissions *(including introduction of new technologies e.g. direct injection, low (less than 120 g/km) emission cars, and alternative concepts)*

The efforts of ACEA manufacturers to reduce CO_2 emissions are illustrated by: fuel consumption improvements associated with technical advances at new model introductions (by more than 15% for individual models); the launch of direct injection engine technologies; and their on-going development of alternative-fuelled vehicles.

E5 Brief overall assessment on progress in relation to the target

ACEA's member average specific emissions have decreased by 6% over the reporting period. To date, the main technological achievement is linked to the introduction of direct injection engine cars onto the EU market since 1998, including Diesel Direct Injection (1998) and Gasoline Direct Injection (1999) models. The market share of diesel engines increased within the reporting period. ACEA members have launched some models emitting less than 120 g/km

ACEA's 1995 to 1999 CO_2 performance is consistent with the achievement of the 2003 indicative target range 165 g/km-170 g/km.

Note: The reference 186 g/km in 1995 is based on data available at the time of the discussions for the agreement; further refinements by AAA led to a rounded figure of 185 g/km.

1. MONITORING OF TECHNOLOGICAL DEVELOPMENTS AFFECTING THE AGREEMENT

1.1. Agreement Initiatives (optional)

1.1.1 R&D

In view of the long-term dimension of climate change, the development of new breakthrough technologies will be essential. In support of this effort the industry (ACEA/EUCAR/CLEPA) launched, in 1998, a joint CO_2 R&D Programme, to identify, develop and demonstrate new technologies and system concepts enabling reduction of CO_2 emissions from vehicles. With wide participation from across the sector's research base (car manufacturers, suppliers, research establishments, and universities), project proposals were specified in each of the Programmes main areas of R&D (Powertrain, Materials and Manufacturing, Systems Efficiency, Mobility, System Assessment and Demonstrators).

The duration of the Programme is from later 1998 until 2004. Its expected overall budget is of the order 300M Euro.

In 1999 more than 30 CO_2 research project proposals, with a total budget of more than 200 M Euro, were submitted for funding to the First Call of the EU's Fifth Framework Programme (FP5), mainly under Key Action 3 of the Growth programme. Of these 15 were granted funding; they have a total project budget of about 80M Euro with an EU funding of 30 M Euro. The granted projects mainly focus on the Powertrain and Materials research area.

Sections 1.2 and 4.5 also cover ACEA technological developments and research programme activities.

1.2. Technological developments

1.2.1. Description of technological developments and their fuel efficiency characteristics (new technologies, alternative concepts)

1.2.2. Availability of New Technologies in the EU and Member States

1.2.3. Availability of alternative concepts passenger cars in the EU (optional: in Member States)

1.2.4. Availability of low emission passenger cars (e.g. emitting less than 120 g/km)in the EU (optional: in Member States)

European car manufacturers are continuing to gear research and product and process development towards attaining the 140 g CO_2/km target by 2008.

The efforts of ACEA manufacturers to reduce CO_2 emissions are illustrated by their new model introductions, which allow the latest technical advances to be brought to the market place. These new model and technology programmes show significant improvements in fuel consumption performance; typically fuel consumption reductions in excess of 15% are the norm (new models in 1998 compared to near equivalents in 1995; see Figure 3 below). It should be noted that advances of this magnitude can only occur at the time of major product renewal, not at mid-cycle.

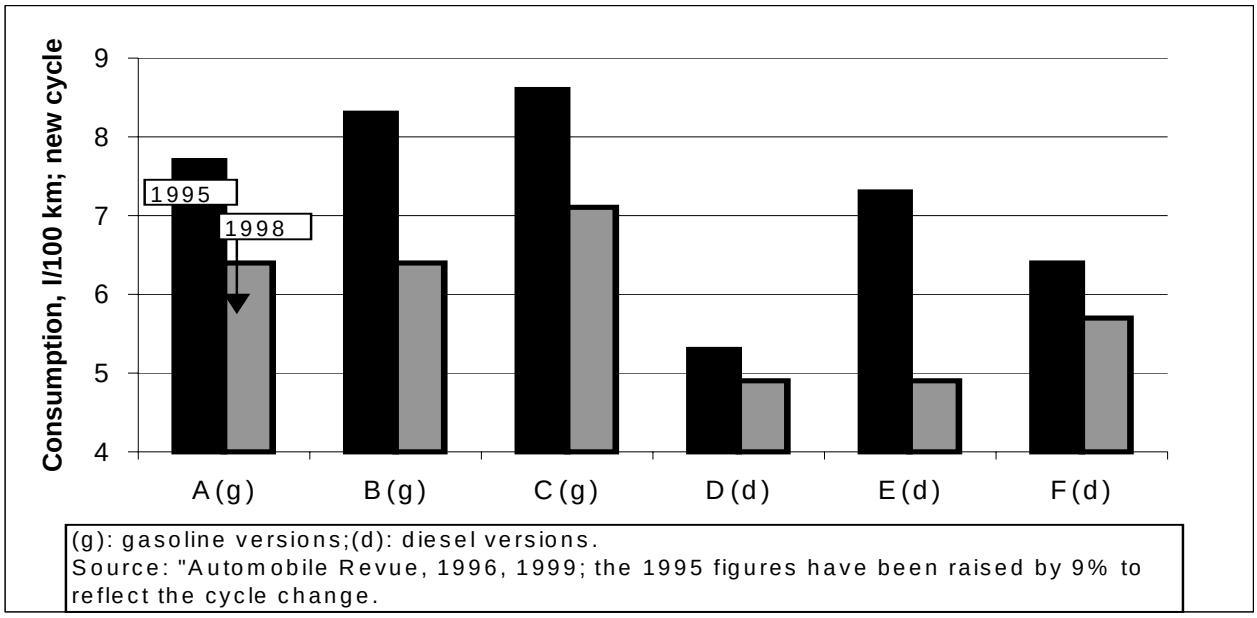


Figure 3: Improvement in Consumption Performance of New Models Introductions

ACEA's Commitment states that European manufacturers have high expectations of certain technologies, in particular those associated with Direct Injection gasoline and diesel engines. These are considered two of the most promising routes to achieve the central commitment; assuming that their cost-effectiveness can be addressed, ACEA will aim at a high share of new cars being equipped with these fuel-efficient technologies. Statistics available so far do not allow trends to be quantified**.**

During the 1995-1999 period, ACEA manufacturers were involved in the product development phase of Direct Injection (DI) gasoline engine technology, and only one Gasoline Direct Injection model was actually launched into the marketplace in 1999. In contrast, new Direct Injection diesel models were being launched by almost every ACEA manufacturer, and came to market particularly in 1998 and 1999. According to ACEA these new DI diesels had the drive-quality and performance of their gasoline alternatives, but with superior fuel consumption. These differing rates of DI technological developments/market presence, with DI diesel currently ahead, account for the recent increase in diesel's overall market share.

Over the 1995 -1999 period almost all ACEA member companies were involved in the on-going development, promotion and launch of alternative-fuelled vehicles (AFVs). Available statistics only cover sales of "Other Fuel" cars, however this category is thought likely to be made up virtually exclusively of AFVs. On this basis, AFV sales by ACEA members have grown from less than 500 units in 1995, to over 13,000 units in 1999; even so, the market share of these cars only amounted to 0.1%. However these statistics understate AFV activity in two respects; firstly, to date most AFVs have been after-market fitments, and therefore not recorded under "Other Fuel"; and secondly AFVs that are dual-fuelled generally get recorded under gasoline or diesel.

Even though the volume growth in AFVs is considered directionally significant, ACEA notes that technical progress is hampered by widely diverging national policies, discouraging manufacturers from advancing more strongly into AFVs, as well as by an inadequate fuelling infrastructure.

1.3. Description of market trends in physical fleet characteristics *(mass (kg), engine capacity (cm^3), engine power (kW) in the EU and Member States)*

Car physical characteristics have drifted upwards. Engine capacity has remained virtually constant between 1995 and 1999 (+2.7%), whereas car mass and engine power have increased by 8% and 12.7% respectively. Over the 1995-1999 period, mass increases have resulted from a range of factors such as: car safety improvements; other automotive regulations; the increased diesel share; and customer-driven vehicle utility enhancement. Safety improvements have affected the whole car structure from the floor-pan upwards, and have been driven by: legislative requirements (such as front and side-impact requirements); motorists' association tests (like Euro NCAP); and consumer wants and expectations, along with competitive considerations.

However, the capacity and power of car engines varies considerably from one EU country to another, reflecting the differing economic and geographic conditions in the various markets (See Annex).

2. STATISTICAL MONITORING (1995-1999)

2.1. Listing of all (M1) newly registered passenger cars (model level) in the EU

See Table 4 in Annex[1].

2.2. Trends in specific emissions of CO_2 (g/km) *(averaged over all newly registered passenger cars by fuel type in the EU and Member States)*

As shown in Figure 1 (recall chapter E1) ACEA's average specific CO_2 emissions have decreased from a new car average of 186 g/km in 1995 to 174 g/km in 1999. In each year since 1995 sizeable reductions in average specific emissions were achieved. In total between 1995 and 1999 ACEA's average specific CO_2 emissions were cut by more than 6%.

In broad terms, this EU performance was replicated in the Member States, with reductions in every country (see Annex). The variation between the highest and lowest country in CO_2 terms has narrowed over the period.

New gasoline-fuelled cars showed an average CO_2 emission reduction of 4.3%, and diesel cars a reduction of 8.5% over the reporting period. This corresponds to respectively 180 g/km and 161 g/km in 1999. In 1998 and 1999, the market share of diesel cars showed some expansion, as technically-advanced new DI diesel models came to market.

This short-term diesel share increase was widely anticipated, as explained in the Commission's 1998 Working Paper (SEC (98) 1047) on the ACEA Agreement. In this document, a "short-term increase in diesel share" is acknowledged, reflecting consumer benefits of the new generation, fuel-efficient Direct Injection diesels, currently being introduced. However, a reversal of this market trend is also anticipated in the Working Paper.

[1] Table 4 presents a list of M1 vehicles covered by the Commitment potentially registered as N1 in some Member States ('grey areas').

2.3. Number of newly registered passenger cars (*by fuel type in the EU and Member States)*

EU total registrations of new passenger cars marketed by ACEA's members have increased by 22% over the monitoring period.

The number of gasoline passenger cars sold increased from 7,518,525 vehicles in 1995 to 8,241,064 vehicles in 1999 (+9%) and represents about 65.8% of total sales by ACEA members (against 73% in 1995). The number of diesel passenger cars sold increased from 2,462,752 in 1995 to 3,886,904 in 1999 (+57.8%), and represents 31% of total new registrations (see Figure 4)[2].

The number of cars equipped with other fuel types have rapidly increased but remained relatively small in 1999 (13,013 cars)

ACEA's market share of total EU passenger cars (gasoline + diesel) was 88.4% in 1995, and 84.6% in 1999.

New registrations in Member States are shown in the Annex.

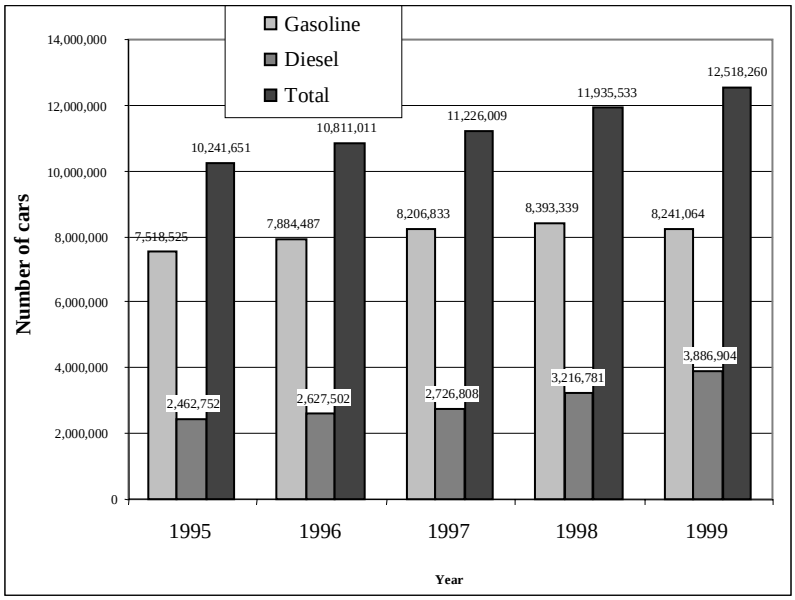


Figure 4: Number of Newly Registered Passenger Cars by ACEA[3]

ACEA's CO_2 related fleet composition has moved over the reporting period towards more fuel-efficient vehicles. The share of cars emitting more than 180 g/km has decreased by 15 %, from 46 % to 32 %of the total. The share of cars emitting between 161 g/km and 180 g/km has decreased by 6.6 % from 32.8 % to 26.2 %. The share of cars in lower categories 141-160 g/km, 121- 140 g/km and 101-120 g/km has increased by 15 %, 7 % and 0.7 % respectively. Globally the share of the cars emitting less than 160 g/km has increased by 23 %, from 19 % to 42 % (see Figure 5).

[2] The rest consists of statistically unidentified vehicles and 'Other Fuels'.

[3] 'Other fuel' not represented.

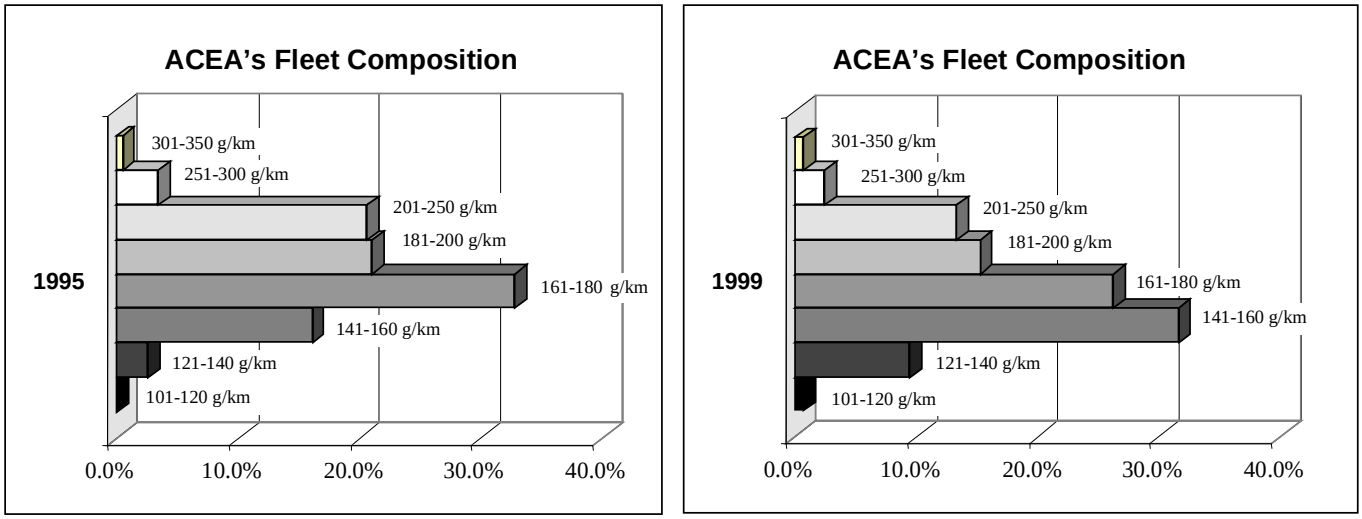


Figure 5: ACEA's Fleet Composition per CO_2 Category in Shares of Total

2.4. EU trends in physical fleet characteristics *(mass (kg), engine capacity (cm^3), engine power (kW)) by fuel type averaged over all newly registered passenger cars; and relationship to* CO_2 *emissions)*

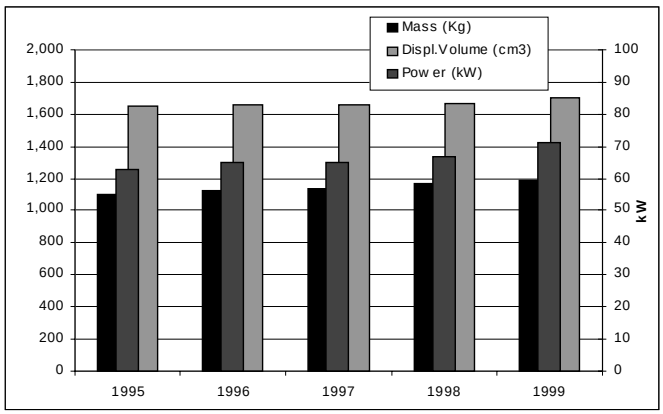
There is an upward drift in physical characteristics' averages at EU level (See Figure 6).

Average total automobile mass was 1,101 kg in 1995 and increased by 8% over the reporting period (1,190 kg in 1999). Gasoline automobiles' average mass has increased by 6% from 1,068 kg to 1,133 kg in 1999 within the reporting period. Diesel automobiles' average mass has increased by 8.8% within the reporting period, from 1,204 kg in 1995 to of 1,310 kg in 1999. No data on average mass of 'Other Fuels' is available. The overall trend in average mass shows an increase over the 1995-1999 period, both for gasoline and diesel cars.

Total engine capacity has increased by 2.7% within the monitoring period, from 1,654 cm^3 in 1995 to 1,699 cm^3 in 1999. Gasoline engine capacity has increased by 0.95% over the reporting period, from 1,564 cm^3 in 1995 to 1,579 cm^3 in 1999. Diesel engine capacity has increased by 1.2% over the reporting period, from 1,928 cm^3 in 1995 cm^3 to 1,952 cm^3 in 1999.

Total engine power has increased by 12.7% over the reporting period, from 63 kW in 1995 to 71 kW in 1999. Gasoline engine power has increased by 9.2%, achieving 65 kW in 1995 and 71 kW in 1999. Diesel engine power has steadily increased by 16.7%, i.e. from 60 kW in 1995 to 70 kW in 1999.

While the physical characteristics averages have increased over the period, average specific CO_2 emissions dropped by 6% over the reporting period (see Figure 6B). According to ACEA this indicates that technical improvements compensated the trends in physical characteristics. In Figure 7 below the evolution of the ratios of average specific CO_2 emissions to mass, power and cylinder capacity is given, as presented by ACEA.



Figures 6: Market Trends in physical ACEA fleet characteristics

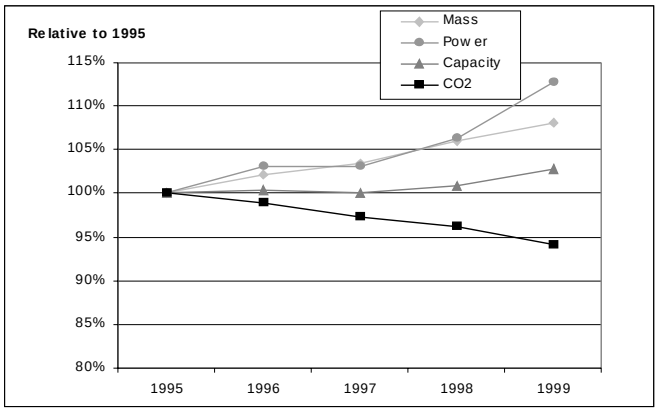


Figure 6B: Trends in physical fleet characteristics and specific CO_2 emissions

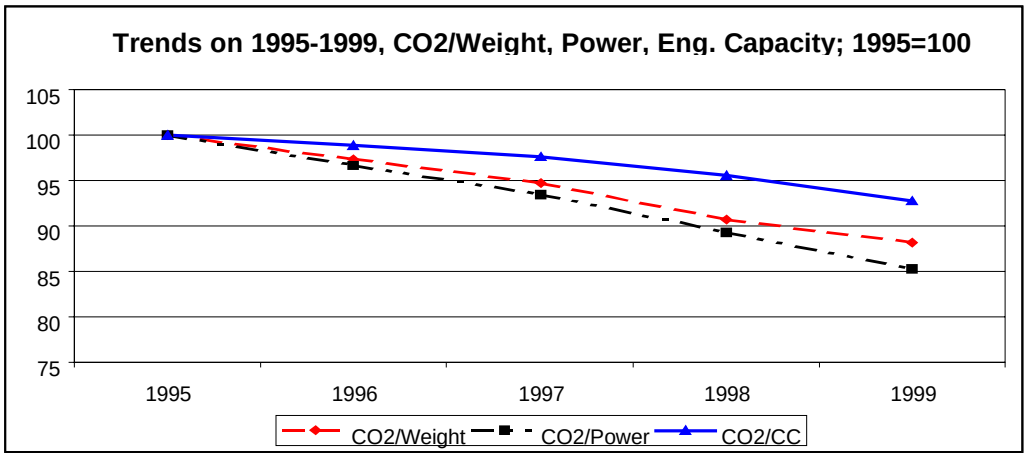


Figure 7: Trends in average specific CO_2 emissions per kg, kW and cm^3

2.5. Trends in new technologies in the EU and Member States supported by data when possible (optional) *(e.g. % or number of total newly registered passenger cars which are direct injection)*

Almost every ACEA member has launched new Direct Injection (DI) diesel models on the EU market, and these came to market particularly in 1998 and 1999. In addition the first European Gasoline Direct Injection (GDI) model was put on the market in 1999.

2.6. Trends in alternative concepts passenger cars in the EU and Member States supported by data when possible (optional) *(e.g. % or number of total newly registered passenger car)*

Nothing to report. See Section 1.2 above.

2.7. Trends in low emission passenger cars in the EU and Member States supported by data when possible (optional) (e.g. % or number of total newly registered passenger cars which emit less than 120 g/km)

As can be seen in the Annex, in 1999 ACEA members sold over 88,000 cars which emitted 120 g/km CO_2 or less; and this amounted to a 0.7% market share. In 1995 sales of such cars were virtually nil.

2.8. Data methods (Monitoring Decision annexes II & III), data sources, and data confidence levels

ACEA has utilised in this report CO_2 statistics supplied by the French-based association AAA (Association Auxiliaire de L'Automobile). AAA is an independent organisation under public mandate, whose business is to develop and sell data to clients. In France they are official providers of automobile statistics to the government agencies. They have devoted their resources to the development of a database to monitor CO_2 emissions. They use official data sources in the Member States for car registration data. AAA's CO_2 database covers, in a consistent manner, over 90% (90-92%) of the EU and the rest are unknown figures (data for Finland and Greece are not available), and is widely regarded as one of the most reliable data sources currently available. The uncertainties incorporated into the figures shown in this report due to the incompleteness of the data set cannot be numerically quantified. However, they are estimated to be small. It can be assumed that they do not influence the overall result of the monitoring.

ACEA has a high-level of confidence in the AAA data provided. However, 1995 figures should be taken as indicative and broadly correct, given the 9% "across the board" adjustment applied to "old" cycle data (as described in Section 2.9).

ACEA has used the above data-source because the official EU CO_2 monitoring scheme will not become operational until 2001/2.

2.9. Description of measurement issues for CO_2 Emission Factors *(pre and post 1995)*

Another important data issue is the change that occurred in the official test-cycle that measures new car fuel consumption/ CO_2. Official car CO_2 data is now being established according to Directive 93/116/EC, which replaced the «old» Directive 80/1268/EEC. This «new» test cycle was implemented, in large part, as from 1.1. 1997. Amongst other changes, the «new» cycle includes for the first time a cold start period, and consequently higher specific fuel consumption/specific CO_2 emissions values result. In ACEA's Commitment, a 9% correction has been agreed upon.

According to ACEA it is important to emphasize the point that the 9% adjustment has been applied "across the board" to 1995/old cycle figures. For greater accuracy differing rates of adjustment (non-linear) should have been applied, e.g., for large/small cars and for gasoline/diesel.

2.10. Other Issues

The ACEA Commitment signed in July 1998 covers specified car companies, including Daimler-Benz. Subsequently the Daimler-Chrysler group was formed. Although Chrysler was not included in the original commitment, ACEA has however stated that it is prepared to include Chrysler and it is agreed that:

- All M1 passenger cars marketed by DaimlerChrysler within the EU will be fully incorporated in the monitoring of ACEA's commitment on CO_2 emission reductions from new passenger cards, as endorsed by the Commission's recommendation 1999/125/EC.
- The full incorporation of all DaimlerChrysler passenger cars does not entail any change to the target value for 2008 and the intermediate target range for 2003.

3. KEY ASSUMPTIONS TO THE AGREEMENT

3.1. Availability of Enabling Fuels

3.1.1. Description of state of assumption

3.1.2. Statement on whether assumption is up-held or compromised

3.1.3. If necessary: Statement on implication for agreement and justification

ACEA 's commitment specifies that: « Given the outstanding importance of improved fuels for the CO_2 reductions ACEA assumes the full market availability of fuels with a sufficient quality to enable the application of technologies needed for the industry to achieve its CO_2 commitment during the life-time of this Commitment».

ACEA acknowledged in the Technical Annex to the Commitment the conciliation on Directive 98/70 on the Quality of Fuel and upholds its 140 g/km commitment. However, ACEA, at the time it took its Commitment, and given the outstanding importance of improved fuels for CO_2 reductions, assumed that fuels of better quality might be available on the market. In this respect ACEA specified in its commitment that a maximum sulphur content of 30 ppm should be provided throughout the Community in 2000 (some gasoline and some diesel only) and 2005 (full availability of diesel and gasoline).

Within the reporting period such low sulphur fuels were not available in the majority of European countries; only in Scandinavian countries and the UK does some availability exist. ACEA believes that European manufacturers have now reached a stage where the development of new after-treatment technologies is being delayed by the presence of sulphur in fuels.

In addition, ACEA has recently explained to the Commission services that new fuel-efficient lean-burn engine technologies need to use after-treatment systems (NOx traps, particulate filters and conventional catalysts) to meet CO_2 and tailpipe emissions at the same time. Therefore «Zero Sulphur Fuel» (less than 10 ppm sulphur) will be required as sulphur contaminates after-treatment systems and significantly reduces their efficiency.

The Commission services notes the importance which ACEA attributes to fuel quality but considers that the provisions of Directive 98/70 on fuel quality are being complied with. With respect to «Zero Sulphur Fuel» the Commission services are currently studying the need of such fuels and the possible repercussions of its production and distribution to other industrial sectors. The Commission services intend to report on the results of this investigation by the end of the year 2000.

3.2. Distortion of Competition - link to 4.7.1

3.2.1. Description of state of assumption

3.2.2. Statement on whether assumption is up-held or compromised

3.2.3. If necessary: Statement on implication for agreement and justification

ACEA was the first Association to finalize a car CO_2 Agreement, and based its Commitment on a "Distortion of Competition» assumption, in order to ensure a level playing field.

ACEA strongly stresses that the competitive environment is very sensitive to CO_2, with technical and economic factors being significantly affected by even small variations in fuel average performances.

3.3. Promotion of CO_2 efficient technologies

3.3.1. Description of state of assumption

3.3.2. Statement on whether assumption is up-held or compromised

3.3.3. If necessary: Statement on implication for agreement and justification

As indicated earlier, ACEA members have high expectations for certain technologies, in particular those associated with DI gasoline and diesel engines, which are two of the most promising routes to achieve the central commitment of 140 g CO_2/km in 2008. ACEA's commitment was therefore based on the assumption of an unhampered diffusion of car CO_2 efficient technologies into the market. Consequently it is fundamental that any measures which might hamper the diffusion process of CO_2 efficient technologies are taken into consideration in the monitoring procedure.

ACEA states that the beneficial effects of Direct Injection (DI) technology can be seen from ACEA's 1995-1999 CO_2 improvement performance. For gasoline cars, where only one DI model was introduced, a 4.3% average specific CO_2 emission reduction was achieved over this period. Whereas the equivalent figure for diesel cars was 8.5%, reflecting the launch of new DI diesels. These new models were launched particularly in 1998 and 1999, and diesel average specific CO_2 emissions were cut by 2.9% and 3.6%, respectively, in these two years (6.4 % in total).

In the context of this assumption, ACEA is concerned about Dutch tax measures on diesel cars that were announced in 1999. From the start of 2000 the purchase tax (BPM) was raised for all diesel-fuelled vehicles by the fixed amount of Fl 2000 (Euro 1000). Also car or fuel tax measures have been implemented or announced in a number of other Member States (e.g. France, Sweden and Britain) that penalize diesels. ACEA will be closely assessing such measures and if necessary ask that they be taken into account when monitoring ACEA's progress towards achieving its Commitment. ACEA would draw the attention of public authorities to the fact that, in ACEA's view, they compromise the "unhampered diffusion" assumption, with likely adverse consequences for the Commitment. ACEA considers that, at the very least, EU and national authorities are responsible for promoting contradictory messages across Europe.

3.4. Acceptance of innovation

3.4.1. Description of state of assumption

3.4.2. Statement on whether assumption is up-held or compromised

3.4.3. If necessary: Statement on implication for agreement and justification

Nothing to report.

4. OTHER ISSUES

4.1. New Measures affecting CO_2 - *and link to 3.3 (diffusion issues)*

4.1.1. Description

4.1.2. Comment on impact of the issue and on implication for agreement

Nothing to report, see comments in Section 3.3.

4.2. New regulatory measures

4.2.1. Description

4.2.2. Comment on impact of the issue and on implication for agreement

ACEA anticipates that the End-of-Life Vehicle (ELV) Directive will have adverse implications for the fuel efficiency of cars, as it may limit in its opinion the use of certain light materials and technologies, while burdening significantly the companies.

The Commission does not expect repercussions of the ELV Directive on the CO_2 commitment.

4.3. Fiscal Measures

4.3.1. Description

4.3.2. Comment on impact of the issue and on implication for agreement

Fiscal measures hampering the diffusion of CO_2 efficient technologies into the market are outlined in Section 3.3; also Section 1.2 refers to the discouraging effects of divergent national Alternative-Fuelled Vehicles (AFV) policies (which include fiscal incentive measures).

More generally, as stated in its Commitment, as long as the commitments are being honoured ACEA assumes they provide complete and sufficient substitute for additional fiscal measures in pursuit of the CO_2 objectives of the Commitment.

Moreover, ACEA explained that it does not find such instruments relevant in the light of its ambitious CO_2 objective, and the fact that, in 2003, ACEA will review the potential for additional CO_2 reduction towards 120 g/km by 2012.

ACEA members consider that prescriptive fiscal interventions are likely to further fragment the internal market, severely damage manufacturers' competitiveness (particularly by causing the misallocation of scarce industry resources), reduce their product diversity and generally undermine the business viability of whole sections of the European industry. These negative consequences would detract from CO_2 reduction efforts (by cutting margins, investments and R&D), and have major adverse effects throughout the EU economy.

The Commission draws attention to Community target of 120 g/km, to be met by 2005, and by 2010 at the latest. It gives reference to corresponding Council Conclusions and Resolutions of the European Parliament. The gap between the target of the Commitment (140 g/km) and the overall objective of the Community strategy (120 g/km) has to be closed by other measures. The Community strategy clearly specifies consumer information and fiscal measures as additional instruments to be applied. The Council invited the Commission to report about the possibilities of establishing a reference framework for fiscal incentives. Recently the Commission established working groups to study fiscal measures. ACEA agreed to provide a technical contribution to the study by participating in the working groups that have been set up.

4.4. Breakthrough technologies - *and link to 3.3 (diffusion issues)*

4.4.1. Description

4.4.2. Comment on impact of the issue and on implication for agreement

Nothing to report, see comments in Section 4.5.

4.5. Research Programmes

4.5.1. Description

4.5.2. Comment on impact of the issue and on implication for agreement

In view of the long-term dimension of climate change, the development of new breakthrough technologies will be essential. To support this process the industry (ACEA/EUCAR/CLEPA) launched, in 1998, a joint CO_2 R&D Programme, to identify, develop and demonstrate new technologies and system concepts enabling reduction of CO_2 emissions from vehicles. With wide participation from across the sector's research base (car manufacturers, suppliers, research establishments, and universities), project proposals were specified.

The Programme's main areas of R&D are:

- Powertrain: Development of traditional combustion engines, hybrid electric and fuel cells vehicles, transmissions, exhaust gas after treatments,…
- Material and Manufacturing: Aiming at light weights material solutions and cost efficient manufacturing.
- System Efficiency: Dealing with electronics and control systems of the vehicle, efficiency of peripheral systems, energy recovery,…
- Mobility: Concentrating on vehicle control, transport telematics and the overall efficiency of road transports with the view on its impact on CO_2 emissions.
- System Assessment: Evaluation of the technical development, considering in particular Life Cycle Assessment and Recycling.
- Demonstrators: Assessing and proving R&D achievements using a range of demonstrators (e.g. virtual, vehicle sub-systems, road operational vehicles).

The duration of the Programme is from later 1998 until 2004. Its expected overall budget is of the order 300M Euro; industry is already making sizeable contributions, additional funding is needed from EU and national R&D programmes. In support of this research initiative, and its funding requirements, the industry has established a CO_2 R&D Programme Organisation and Office; arranged an Information Day in Brussels (200 participants, including CEC); and held meetings with representatives of relevant "Key Actions" in FP5 (IST, "Growth", City of Tomorrow, Energy).

In 1999 more than 30 CO_2 research project proposals, with a total budget of more than 200 M Euro, were submitted for funding to the First Call of the EU Fifth Framework Programme (FP5). Of these 15 were granted funding; they have a total project budget of about 80M Euro, - the funding from the EU is in the range of 30 M Euro. The granted projects mainly focus on two research areas. The first one is Powertrain - notably dealing with internal combustion engine (I.C.E.), aftertreatment and fuel cell systems. The other main area is Materials -- with the focus on low weight material and technologies for fibre reinforcement and hydro forming.

For year 2000, the CO_2 R&D Programme will continue to submit proposals to the FP 5. Technology R&D projects, e.g. dealing with Engine, Material, Manufacturing, will be one type of proposals. The other type is characterised as Technology Platforms and Demonstrators of different Powertrain systems. Integration of components and subsystems, and Verification of complete system (Powertrain, Vehicle) are the keywords for these proposals.

In the future, aspects of deployment and infrastructure (e.g. for fuel cell vehicles) also have to be investigated and solved for quick and successful exploitation of the R&D results.

ACEA draws attention to the important role RTD has to play in car CO_2 emission reductions. ACEA expects more support and co-operation from Community and national research programmes to ensure effective delivery of sustainable CO_2 reductions

The Commission services explained that the Commission will continue to provide significant opportunities for near and longer term RTD and demonstration on key technologies related to CO_2 reduction. Within the «European Research Area» (ERA), the research effort of the European Community for CO_2 reduction both at European and national level should be reinforced and co-ordinated.

4.6. Other measures - telematics, infrastructure, education

4.6.1. Description

4.6.2. Comment on impact of the issue and on implication for agreement

ACEA highlights that it co-organised (jointly with ECMT and OICA) a Conference on "Smart CO_2 Reductions" in Turin. It proved to be a highly productive, consensus building process between government, industry and experts on "Smart" (non-product) vehicle CO_2 emission reduction measures. Prime examples of these "Smart" measures are: incentives for park renewal; encouragement for correct vehicle maintenance; driver education and training schemes; telematics and infrastructure optimisation; and better integrated land use and transport planning. It was the conclusion of both government and industry participants at the Conference that such non-product measures have a very significant potential to deliver CO_2 reductions, and deliver them quickly and often cheaply.

In spite of our new car reduction efforts, and the massive contribution they will make to EU CO_2 reduction, ACEA manufacturers have always stressed the potential contribution of non-product measures. By acting, without delay on the European car fleet as a whole, these measures can generate immediate CO_2 reductions. ACEA believes that by creating an ethos of support for CO_2 reduction across society, non-product measures can have a much wider, multiplier impact than just their first-order, direct effects.

ACEA explained that during the monitoring period the European automotive industry has also been active on:

- Education: eco-driving training schemes has been introduced by a number of ACEA manufacturers, and the Industry Associations in Britain and German have published "greener" driving brochures.
- Telematics: ACEA and EUCAR, along with their member companies, have had extensive involvement in the development and promotion of intelligent transport systems (ITS) to: provided road/traffic information, facilitate route guidance, enhance intermodality and so on. The European industry's involvement in Conferences aimed at promoting this area of technology will include extensive participation in the World ITS Congress in November 2000 in Turin.

The Commission services draw attention to the fact that the internalisation of transport externalities and congestion charging are measures among the Commission's transport policy.

4.7. Economic situation of the car industry *(This includes, for KAMA only, a report on hampering measures*)

4.7.1. Description

4.7.2. Comment on impact of the issue and on implication for agreement

ACEA indicates that the economic situation of the European car industry, as reflected in its financial performance, competitiveness and employment situation, needs to be strong and healthy to provide the opportunity to focus resources on its CO_2 reduction Commitment as this goes far beyond any "business as usual" scenario. ACEA highlights that ACEA car manufacturers operate in a complex environment, and have to manage resources to meet a range of competing societal and customer demands, not just CO_2 abatement. ACEA believes that such demands, e.g., safety improvements, often detract from fuel efficiency gains.

ACEA believes that new "external" developments can also adversely affect the industry's economic situation, and consequently the ability of European manufacturers to meet their CO_2 Commitment. In ACEA's view the proposed End-of-Life Vehicle Directive is a case in point (see also Section 4.2).

For the reporting period, the Commission services have no evidence of negative impacts on the economic situation of ACEA's member companies associated with the CO_2 commitment. The Commission does not expect significant adverse repercussions of the ELV Directive on the industry's economic situation.

5. CONCLUSIONS

5.1. Progress Statement on Delivering the Agreement

ACEA's 1995 to 1999 CO_2 performance is consistent with achieving the 2003 indicative range, and in line with the overall ACEA Commitment.

5.2. Statement on Expected Future Progress of the Agreement

There is strong evidence to support ACEA's claim that its manufacturers will continue to focus significant research, product and process development towards attaining the 140g CO_2/km target by 2008.

According to ACEA, possible threats to the achievement include:

1. The non-full market availability of fuels with a sufficient quality to enable the application of technologies needed for the industry to achieve its CO_2 commitment.

2. New legislative measures that either impose «mutually exclusive» demands to CO_2 reduction, or undermine the European industry's financial viability.

3. The introduction of measures which might hamper the diffusion of the CO_2 efficient technologies.

However, up to now none of these issues hampered the improvement of fuel efficiency.

Data Annexes

Data Annexes (1995-1999) attached to the report

B1 : SPECIFIC FUEL CONSUMPTION AND EMISSIONS OF CO_2 AVERAGED OVER ALL NEWLY REGISTERED PASSENGER CARS FOR EACH DIFFERENT FUEL-TYPE, FOR THE EU AND EACH MEMBER STATE

B2 : THE DISTRIBUTION OF CO_2 EMISSIONS IN THE NEW PASSENGER CAR FLEET FOR EACH DIFFERENT FUEL TYPE, FOR THE EU

B3 : THE DISTRIBUTION OF AVERAGED MASS, POWER AND ENGINE CAPACITY OF NEW PASSENGER CARS FOR EACH FUEL TYPE FOR THE EU-15 AND EACH MEMBER STATE

B3a. The Distribution of New Passenger Cars: by Average Mass (kg)[4]

B3b. The Distribution of New Passenger Cars: by Average Engine Power (kW)

B3c. The Distribution of New Passenger Cars: by Average Engine Capacity (cm3)

B4 EU LIST OF M1 VEHICLES POTENTIALLY REGISTERED AS N1 (BY MODEL) IN EACH MEMBER STATE

[4] Curb weight of vehicles.

B1. SPECIFIC FUEL CONSUMPTION (L/100km) AND EMISSIONS OF CO2 (g/km) AVERAGED OVER ALL NEWLY REGISTERED PASSENGER CARS FOR EACH DIFFERENT FUEL-TYPE, FOR THE EU AND EACH MEMBER STATE

1995 - ACEA MEMBERS

Member State	Total	identified version										unknown version
		Petrol			Diesel			Petrol + Diesel			Other	
	Number	Number	average Fuel	average CO2	Number	average Fuel	average CO2	Number	average Fuel	average CO2	Number	Number
EU-15	**10,241,651**	**7,518,525**	**7.9**	**188**	**2,462,752**	**6.6**	**176**	**9,981,277**	**7.6**	**185**	**481**	**259,893**
A	217,690	111,128	8.1	193	103,166	6.6	175	214,294	7.4	184	3	3,393
B	292,388	140,181	8.0	191	151,697	6.4	171	291,878	7.2	181	12	498
DK	97,755	93,355	8.0	190	3,234	7.2	192	96,589	8.0	190	0	1,166
F	1,835,655	969,490	7.5	177	865,693	6.6	175	1,835,183	7.0	176	387	85
FIN	54,324	1,487	8.4	198	1,245	6.4	170	2,732	7.5	185	0	51,592
GER	2,854,623	2,341,864	8.2	196	426,043	6.9	183	2,767,907	8.0	194	69	86,647
GR	88,234	0	0.0	0	0	0.0	0	0	0.0	0	0	88,234
IRE	56,007	45,680	7.6	180	10,240	6.7	179	55,920	7.4	180	0	87
IT	1,639,643	1,447,032	7.5	179	170,748	6.7	179	1,617,780	7.4	179	0	21,863
LUX	24,464	17,152	8.6	203	7,213	6.7	179	24,365	8.0	196	1	98
NL	331,063	271,301	8.1	192	58,582	6.6	176	329,883	7.8	189	0	1,180
P	177,757	156,481	7.2	171	21,021	6.2	166	177,502	7.1	171	0	255
SP	776,972	508,036	7.6	181	266,768	6.2	164	774,804	7.1	175	0	2,168
SW	145,322	139,873	9.5	225	4,314	7.3	193	144,187	9.4	224	9	1,126
UK	1,649,754	1,275,465	8.1	193	372,788	6.7	179	1,648,253	7.8	190	0	1,501

B1. SPECIFIC FUEL CONSUMPTION (L/100) AND EMISSIONS OF CO2 (g/km) AVERAGED OVER ALL NEWLY REGISTERED PASSENGER CARS FOR EACH DIFFERENT FUEL-TYPE, FOR THE EU AND EACH MEMBER STATE

1996 - ACEA MEMBERS

Member State	Total	identified version										unknown version
		Petrol			Diesel			Petrol + Diesel			Other	
	Number	Number	average Fuel	average CO2	Number	average Fuel	average CO2	Number	average Fuel	average CO2	Number	Number
EU-15	**10,811,011**	**7,884,487**	**7.8**	**186**	**2,627,502**	**6.5**	**174**	**10,511,989**	**7.5**	**183**	**1,265**	**297,757**
A	238,659	102,104	8.0	190	132,773	6.5	173	234,877	7.1	180	14	3,768
B	328,244	160,561	7.9	188	167,066	6.4	171	327,627	7.1	179	38	579
DK	103,854	99,065	7.9	188	3,444	7.2	191	102,509	7.9	188	2	1,343
F	2,019,332	1,215,701	7.3	175	802,019	6.6	175	2,017,720	7.0	175	1,126	486
FIN	67,374	0	0.0	0	0	0.0	0	0	0.0	0	0	67,374
GER	3,002,394	2,430,812	8.1	194	458,251	6.6	177	2,889,063	7.9	191	17	113,314
GR	93,085	0	0.0	0	0	0.0	0	0	0.0	0	0	93,085
IRE	77,678	65,754	7.5	179	11,801	6.7	179	77,555	7.4	179	0	123
IT	1,631,453	1,349,749	7.4	176	271,049	6.7	178	1,620,798	7.3	177	12	10,643
LUX	26,414	17,372	8.4	200	8,557	6.7	177	25,929	7.8	192	5	480
NL	350,733	282,257	8.0	191	67,095	6.5	174	349,352	7.8	188	0	1,381
P	192,677	165,476	7.1	169	27,009	6.1	163	192,485	7.0	168	0	192
SP	833,012	499,096	7.5	179	332,301	6.2	166	831,397	7.0	174	0	1,615
SW	154,357	144,434	9.3	221	8,763	6.9	183	153,197	9.2	219	51	1,109
UK	1,691,745	1,352,106	8.0	191	337,374	6.6	177	1,689,480	7.7	188	0	2,265

B1. SPECIFIC FUEL CONSUMPTION (L/100) AND EMISSIONS OF CO2 (g/km) AVERAGED OVER ALL NEWLY REGISTERED PASSENGER CARS FOR EACH DIFFERENT FUEL-TYPE, FOR THE EU AND EACH MEMBER STATE

1997 - ACEA MEMBERS

Member State	Total	identified version										unknown version
		Petrol			Diesel			Petrol + Diesel			Other	
	Number	Number	average Fuel	average CO2	Number	average Fuel	average CO2	Number	average Fuel	average CO2	Number	Number
EU-15	**11,226,009**	**8,206,833**	**7.7**	**183**	**2,726,808**	**6.4**	**172**	**10,933,641**	**7.4**	**180**	**5,271**	**287,097**
A	212,113	83,450	7.8	187	125,190	6.3	167	208,640	6.9	175	15	3,458
B	327,173	146,793	7.7	184	179,952	6.3	169	326,745	7.0	176	94	334
DK	106,090	100,959	7.9	189	3,920	6.8	181	104,879	7.9	189	26	1,185
F	1,616,282	925,366	7.3	175	685,789	6.6	174	1,611,155	7.0	175	4,756	371
FIN	75,113	0	0.0	0	0	0.0	0	0	0.0	0	0	75,113
GER	3,026,020	2,474,038	8.0	192	453,177	6.6	175	2,927,215	7.8	189	56	98,749
GR	98,728	0	0.0	0	0	0.0	0	0	0.0	0	0	98,728
IRE	92,160	80,185	7.3	173	11,885	6.5	175	92,070	7.2	173	0	90
IT	2,221,084	1,824,161	7.1	168	396,062	6.5	173	2,220,223	7.0	169	77	784
LUX	27,261	17,219	8.3	198	9,570	6.6	175	26,789	7.7	190	3	469
NL	356,813	279,660	8.0	190	75,680	6.4	170	355,340	7.6	186	6	1,467
P	185,127	150,192	6.9	165	34,474	6.1	162	184,666	6.8	164	1	460
SP	907,283	496,063	7.4	177	410,058	6.1	163	906,121	6.8	170	0	1,162
SW	183,900	166,683	9.2	218	15,930	6.4	171	182,613	8.9	213	231	1,056
UK	1,790,862	1,462,064	8.0	191	325,121	6.6	177	1,787,185	7.7	188	6	3,671

B1. SPECIFIC FUEL CONSUMPTION (L/100) AND EMISSIONS OF CO2 (g/km) AVERAGED OVER ALL NEWLY REGISTERED PASSENGER CARS FOR EACH DIFFERENT FUEL-TYPE, FOR THE EU AND EACH MEMBER STATE

1998 - ACEA MEMBERS

Member State	Total	identified version										unknown version
		Petrol			Diesel			Petrol + Diesel			Other	
	Number	Number	average Fuel	average CO2	Number	average Fuel	average CO2	Number	average Fuel	average CO2	Number	Number
EU-15	**11,935,533**	**8,393,339**	**7.6**	**182**	**3,216,781**	**6.3**	**167**	**11,610,120**	**7.2**	**178**	**20,559**	**304,854**
A	233,133	92,028	7.6	182	137,474	6.1	163	229,502	6.7	171	13	3,618
B	370,484	157,090	7.6	181	213,025	6.2	166	370,115	6.8	172	212	157
DK	115,195	107,653	7.9	188	6,622	6.3	167	114,275	7.8	186	22	898
F	1,825,356	1,062,351	7.2	172	742,276	6.3	169	1,804,627	6.8	171	19,957	772
FIN	88,113	0	0.0	0	0	0.0	0	0	0.0	0	0	88,113
GER	3,214,692	2,551,390	7.9	189	566,386	6.3	167	3,117,776	7.6	185	92	96,824
GR	106,467	0	0.0	0	0	0.0	0	0	0.0	0	0	106,467
IRE	96,144	81,795	7.3	176	14,080	6.4	170	95,875	7.2	175	0	269
IT	2,139,136	1,644,711	7.0	167	493,068	6.4	170	2,137,779	6.8	168	24	1,333
LUX	31,274	18,651	8.2	197	12,587	6.3	168	31,238	7.5	185	9	27
NL	410,036	308,569	7.8	187	100,046	6.1	164	408,615	7.4	182	4	1,417
P	212,979	168,347	6.8	163	44,425	5.9	158	212,772	6.6	162	0	207
SP	1,051,317	506,978	7.4	176	543,527	6.0	162	1,050,505	6.7	169	0	812
SW	206,756	179,420	8.9	212	25,995	6.4	171	205,415	8.6	206	149	1,192
UK	1,834,451	1,514,356	8.0	191	317,270	6.5	174	1,831,626	7.7	188	77	2,748

B1. SPECIFIC FUEL CONSUMPTION (L/100) AND EMISSIONS OF CO2 (g/km) AVERAGED OVER ALL NEWLY REGISTERED PASSENGER CARS FOR EACH DIFFERENT FUEL-TYPE, FOR THE EU AND EACH MEMBER STATE

1999 - ACEA MEMBERS

Member State	Total	identified version										unknown version
		Petrol			Diesel			Petrol + Diesel			Other	
	Number	Number	average Fuel	average CO2	Number	average Fuel	average CO2	Number	average Fuel	average CO2	Number	Number
EU-15	**12,518,260**	**8,241,064**	**7.5**	**180**	**3,886,904**	**6.0**	**161**	**12,127,968**	**7.0**	**174**	**13,013**	**377,279**
A	251,392	93,560	7.5	180	157,149	5.9	158	250,709	6.5	166	3	680
B	409,621	165,940	7.4	178	243,337	6.0	162	409,277	6.6	168	253	91
DK	101,317	88,496	7.8	186	12,213	5.9	157	100,709	7.5	182	8	600
F	2,007,697	1,093,633	7.1	171	901,891	6.0	161	1,995,524	6.6	166	11,874	299
FIN	100,267	0	0.0	0	0	0.0	0	0	0.0	0	0	100,267
GER	3,327,541	2,468,640	7.8	187	746,331	6.0	162	3,214,971	7.4	181	149	112,421
GR	153,790	0	0.0	0	0	0.0	0	0	0.0	0	0	153,790
IRE	111,796	96,338	7.1	169	14,508	6.0	161	110,846	6.9	168	0	950
IT	2,052,561	1,417,447	6.9	166	631,437	6.1	164	2,048,884	6.7	165	112	3,565
LUX	35,143	19,585	8.2	195	15,542	6.1	163	35,127	7.2	181	7	9
NL	464,001	335,974	7.6	183	126,306	5.9	159	462,280	7.2	177	117	1,604
P	231,326	176,740	6.7	161	54,557	5.7	153	231,297	6.5	159	3	26
SP	1,243,027	560,059	7.3	175	682,527	5.8	156	1,242,586	6.5	165	0	441
SW	242,146	221,778	8.6	206	19,655	6.3	170	241,433	8.4	203	53	660
UK	1,786,635	1,502,874	7.8	187	281,451	6.2	168	1,784,325	7.5	184	434	1,876

B2. THE DISTRIBUTION OF CO2 EMISSIONS (g/km)
IN THE NEW PASSENGER CAR FLEET
FOR EACH DIFFERENT FUEL TYPE, FOR THE EU

1995 - ACEA MEMBERS

CO2 (category)	identified version					
	Petrol		Diesel		Petrol + Diesel	
	Number	average CO2	Number	average CO2	Number	average CO2
60 - 80	0	0	2	72	2	72
121 - 140	2,294	135	260,512	133	262,806	133
141 - 160	1,237,232	150	415,775	154	1,653,007	151
161 - 180	2,459,197	170	904,243	170	3,363,440	170
181 - 200	1,601,699	190	557,614	189	2,159,313	190
201 - 250	1,860,644	218	252,008	219	2,112,652	218
251 - 300	281,559	269	67,143	269	348,702	269
301 - 350	49,188	322	2,701	330	51,889	323
351 - 450	26,327	388	2,754	383	29,081	387
>450	385	476	0	0	385	476

B2. THE DISTRIBUTION OF CO2 EMISSIONS (g/km)
IN THE NEW PASSENGER CAR FLEET
FOR EACH DIFFERENT FUEL TYPE, FOR THE EU

1996 - ACEA MEMBERS

CO2 (category)	identified version					
	Petrol		Diesel		Petrol + Diesel	
	Number	average CO2	Number	average CO2	Number	average CO2
121 - 140	1,863	135	329,849	135	331,712	135
141 - 160	1,686,444	151	418,116	152	2,104,560	151
161 - 180	2,449,062	171	955,200	171	3,404,262	171
181 - 200	1,621,140	190	600,584	188	2,221,724	190
201 - 250	1,789,146	218	272,095	219	2,061,241	218
251 - 300	266,188	268	45,248	271	311,436	268
301 - 350	42,672	318	4,848	319	47,520	318
351 - 450	27,714	386	1,562	385	29,276	386
>450	258	519	0	0	258	519

B2. THE DISTRIBUTION OF CO2 EMISSIONS (g/km)
IN THE NEW PASSENGER CAR FLEET
FOR EACH DIFFERENT FUEL TYPE, FOR THE EU

1997 - ACEA MEMBERS

CO2 (category)	identified version					
	Petrol		Diesel		Petrol + Diesel	
	Number	average CO2	Number	average CO2	Number	average CO2
101 - 120	0	0	813	119	813	119
121 - 140	57,941	139	363,881	135	421,822	136
141 - 160	2,363,670	150	430,112	149	2,793,782	150
161 - 180	1,973,015	172	1,140,470	171	3,113,485	171
181 - 200	1,854,646	191	479,975	187	2,334,621	190
201 - 250	1,641,641	219	261,900	218	1,903,541	219
251 - 300	241,057	267	43,613	270	284,670	267
301 - 350	51,950	320	5,502	316	57,452	319
351 - 450	22,397	388	542	378	22,939	387
>450	516	519	0	0	516	519

B2. THE DISTRIBUTION OF CO2 EMISSIONS (g/km)
IN THE NEW PASSENGER CAR FLEET
FOR EACH DIFFERENT FUEL TYPE, FOR THE EU

1998 - ACEA MEMBERS

CO2 (category)	identified version					
	Petrol		Diesel		Petrol + Diesel	
	Number	average CO2	Number	average CO2	Number	average CO2
101 - 120	9,547	120	10,792	119	20,339	119
121 - 140	203,872	138	566,984	135	770,856	136
141 - 160	2,607,265	151	681,628	151	3,288,893	151
161 - 180	1,911,248	171	1,232,567	171	3,143,815	171
181 - 200	1,801,156	190	406,384	186	2,207,540	189
201 - 250	1,522,660	220	275,643	217	1,798,303	220
251 - 300	250,698	267	36,607	268	287,305	267
301 - 350	67,317	321	5,792	315	73,109	321
351 - 450	19,071	390	384	377	19,455	390
>450	505	516	0	0	505	516

B2. THE DISTRIBUTION OF CO2 EMISSIONS (g/km)
IN THE NEW PASSENGER CAR FLEET
FOR EACH DIFFERENT FUEL TYPE, FOR THE EU

1999 - ACEA MEMBERS

CO2 (category)	identified version					
	Petrol		Diesel		Petrol + Diesel	
	Number	average CO2	Number	average CO2	Number	average CO2
81 - 100	0	0	4,104	81	4,104	81
101 - 120	57,916	118	26,154	119	84,070	118
121 - 140	277,097	137	877,515	135	1,154,612	135
141 - 160	2,539,234	151	1,294,302	151	3,833,536	151
161 - 180	2,106,519	170	1,073,704	170	3,180,223	170
181 - 200	1,541,449	190	310,594	188	1,852,043	189
201 - 250	1,366,221	220	251,653	218	1,617,874	219
251 - 300	252,336	270	41,307	267	293,643	270
301 - 350	80,876	321	7,554	309	88,430	320
351 - 450	18,832	385	17	375	18,849	385
>450	584	500	0	0	584	500

**B3. (3a) THE DISTRIBUTION OF AVERAGED MASS (KG)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE**

1995 - ACEA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average mass	average CO2	average mass	average CO2	average mass	average CO2
EU-15	**1,068**	**188**	**1,204**	**176**	**1,101**	**185**
A	1,112	193	1,220	175	1,164	184
B	1,076	191	1,215	171	1,148	181
DK	1,068	190	1,297	192	1,076	190
F	939	177	1,151	175	1,039	176
FIN	1,065	198	1,151	170	1,104	185
GER	1,150	196	1,332	183	1,178	194
IRE	1,023	180	1,206	179	1,057	180
IT	1,004	179	1,265	179	1,031	179
LUX	1,152	203	1,237	179	1,177	196
NL	1,081	192	1,210	176	1,104	189
P	939	171	1,119	166	960	171
SP	1,020	181	1,130	164	1,058	175
SW	1,299	225	1,374	193	1,301	224
UK	1,089	193	1,203	179	1,115	190

**B3. (3a) THE DISTRIBUTION OF AVERAGED MASS (KG)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE**

1996 - ACEA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average mass	average CO2	average mass	average CO2	average mass	average CO2
EU-15	**1,085**	**186**	**1,239**	**174**	**1,124**	**183**
A	1,126	190	1,238	173	1,189	180
B	1,097	188	1,256	171	1,178	179
DK	1,097	188	1,343	191	1,106	188
F	961	175	1,189	175	1,051	175
GER	1,175	194	1,372	177	1,205	191
IRE	1,025	179	1,237	179	1,058	179
IT	1,015	176	1,272	178	1,058	177
LUX	1,185	200	1,293	177	1,221	192
NL	1,102	191	1,246	174	1,129	188
P	955	169	1,145	163	982	168
SP	1,032	179	1,151	166	1,080	174
SW	1,302	221	1,384	183	1,307	219
UK	1,111	191	1,243	177	1,138	188

**B3. (3a) THE DISTRIBUTION OF AVERAGED MASS (KG)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE**

1997 - ACEA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average mass	average CO2	average mass	average CO2	average mass	average CO2
EU-15	**1,096**	**183**	**1,267**	**172**	**1,139**	**180**
A	1,134	187	1,266	167	1,213	175
B	1,097	184	1,280	169	1,198	176
DK	1,116	189	1,352	181	1,125	189
F	1,006	175	1,228	174	1,100	175
GER	1,201	192	1,416	175	1,233	189
IRE	1,031	173	1,252	175	1,060	173
IT	978	168	1,255	173	1,028	169
LUX	1,198	198	1,345	175	1,250	190
NL	1,121	190	1,260	170	1,151	186
P	979	165	1,195	162	1,019	164
SP	1,048	177	1,165	163	1,101	170
SW	1,295	218	1,353	171	1,300	213
UK	1,124	191	1,287	177	1,154	188

B3. (3a) THE DISTRIBUTION OF AVERAGED MASS (KG) OF NEW PASSENGER CARS FOR EACH FUEL TYPE FOR THE EU AND EACH MEMBER STATE

1998 - ACEA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average mass	average CO2	average mass	average CO2	average mass	average CO2
EU-15	**1,118**	**182**	**1,294**	**167**	**1,167**	**178**
A	1,142	182	1,310	163	1,243	171
B	1,104	181	1,311	166	1,223	172
DK	1,139	188	1,324	167	1,149	186
F	1,023	172	1,246	169	1,115	171
GER	1,233	189	1,448	167	1,272	185
IRE	1,070	176	1,294	170	1,103	175
IT	984	167	1,273	170	1,050	168
LUX	1,208	197	1,366	168	1,271	185
NL	1,129	187	1,276	164	1,165	182
P	995	163	1,236	158	1,046	162
SP	1,087	176	1,206	162	1,148	169
SW	1,301	212	1,386	171	1,311	206
UK	1,139	191	1,306	174	1,168	188

B3. (3a) THE DISTRIBUTION OF AVERAGED MASS (KG) OF NEW PASSENGER CARS FOR EACH FUEL TYPE FOR THE EU AND EACH MEMBER STATE

1999 - ACEA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average mass	average CO2	average mass	average CO2	average mass	average CO2
EU-15	**1,133**	**180**	**1,310**	**161**	**1,190**	**174**
A	1,176	180	1,382	158	1,305	166
B	1,107	178	1,321	162	1,235	168
DK	1,164	186	1,318	157	1,182	182
F	1,039	171	1,253	161	1,136	166
GER	1,238	187	1,450	162	1,287	181
IRE	1,071	169	1,304	161	1,101	168
IT	997	166	1,298	164	1,090	165
LUX	1,219	195	1,368	163	1,285	181
NL	1,138	183	1,293	159	1,180	177
P	1,011	161	1,261	153	1,070	159
SP	1,101	175	1,218	156	1,165	165
SW	1,321	206	1,437	170	1,330	203
UK	1,154	187	1,336	168	1,183	184

B3. (3b) THE DISTRIBUTION OF POWER (KW)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE

1995 - ACEA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average Power	average CO2	average Power	average CO2	average Power	average CO2
EU-15	**65**	**188**	**60**	**176**	**63**	**185**
A	69	193	60	175	64	184
B	66	191	61	171	63	181
DK	66	190	66	192	66	190
F	53	177	58	175	55	176
FIN	74	198	50	170	63	185
GER	70	196	67	183	70	194
IRE	54	180	59	179	55	180
IT	58	179	66	179	59	179
LUX	79	203	65	179	75	196
NL	66	192	60	176	65	189
P	49	171	54	166	49	171
SP	61	181	53	164	58	175
SW	94	225	73	193	94	224
UK	69	193	60	179	67	190

B3. (3b) THE DISTRIBUTION OF POWER (KW)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE

1996 - ACEA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average Power	average CO2	average Power	average CO2	average Power	average CO2
EU-15	**66**	**186**	**63**	**174**	**65**	**183**
A	71	190	61	173	66	180
B	67	188	63	171	65	179
DK	68	188	71	191	68	188
F	55	175	60	175	57	175
GER	72	194	72	177	72	191
IRE	54	179	60	179	55	179
IT	60	176	67	178	61	177
LUX	80	200	69	177	76	192
NL	67	191	63	174	66	188
P	51	169	58	163	52	168
SP	61	179	57	166	59	174
SW	94	221	77	183	93	219
UK	71	191	62	177	69	188

B3. (3b) THE DISTRIBUTION OF POWER (KW)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE

1997 - ACEA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average Power	average CO2	average Power	average CO2	average Power	average CO2
EU-15	**67**	**183**	**66**	**172**	**67**	**180**
A	72	187	65	167	68	175
B	67	184	64	169	65	176
DK	71	189	73	181	71	189
F	58	175	64	174	61	175
GER	75	192	75	175	75	189
IRE	55	173	62	175	56	173
IT	55	168	67	173	57	169
LUX	82	198	72	175	79	190
NL	69	190	66	170	68	186
P	53	165	63	162	55	164
SP	62	177	58	163	61	170
SW	95	218	77	171	94	213
UK	74	191	65	177	72	188

B3. (3b) THE DISTRIBUTION OF POWER (KW)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE

1998 - ACEA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average Power	average CO2	average Power	average CO2	average Power	average CO2
EU-15	**69**	**182**	**68**	**167**	**69**	**178**
A	72	182	69	163	70	171
B	67	181	65	166	66	172
DK	72	188	73	167	73	186
F	60	172	66	169	62	171
GER	77	189	77	167	77	185
IRE	61	176	66	170	62	175
IT	56	167	69	170	59	168
LUX	85	197	75	168	81	185
NL	70	187	67	164	69	182
P	54	163	68	158	57	162
SP	66	176	61	162	63	169
SW	96	212	78	171	94	206
UK	76	191	68	174	74	188

B3. (3b) THE DISTRIBUTION OF POWER (KW)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE

1999 - ACEA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average Power	average CO2	average Power	average CO2	average Power	average CO2
EU-15	**71**	**180**	**70**	**161**	**71**	**174**
A	72	180	73	158	72	166
B	67	178	67	162	67	168
DK	74	186	71	157	74	182
F	63	171	67	161	65	166
GER	79	187	79	162	79	181
IRE	61	169	67	161	62	168
IT	58	166	72	164	62	165
LUX	88	195	77	163	83	181
NL	71	183	69	159	70	177
P	55	161	71	153	58	159
SP	67	175	63	156	65	165
SW	98	206	81	170	96	203
UK	77	187	71	168	76	184

B3. (3c) THE DISTRIBUTION OF ENGINE CAPACITY (CM3) OF NEW PASSENGER CARS FOR EACH FUEL TYPE FOR THE EU AND EACH MEMBER STATE

1995 - ACEA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average Cm3	average CO2	average Cm3	average CO2	average Cm3	average CO2
EU-15	**1,564**	**188**	**1,928**	**176**	**1,654**	**185**
A	1,649	193	1,920	175	1,779	184
B	1,594	191	1,933	171	1,770	181
DK	1,619	190	2,142	192	1,637	190
F	1,383	177	1,909	175	1,631	176
FIN	1,700	198	1,872	170	1,779	185
GER	1,703	196	2,046	183	1,755	194
IRE	1,416	180	1,901	179	1,505	180
IT	1,390	179	1,956	179	1,450	179
LUX	1,815	203	1,987	179	1,866	196
NL	1,637	192	1,917	176	1,686	189
P	1,273	171	1,683	166	1,321	171
SP	1,486	181	1,872	164	1,619	175
SW	2,087	225	2,114	193	2,088	224
UK	1,626	193	1,878	179	1,683	190

**B3. (3c) THE DISTRIBUTION OF ENGINE CAPACITY (CM3)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE**

1996 - ACEA MEMBERS

	identified version					
	Petrol		Diesel		Petrol + Diesel	
Member State	average Cm3	average CO2	average Cm3	average CO2	average Cm3	average CO2
EU-15	**1,566**	**186**	**1,946**	**174**	**1,661**	**183**
A	1,641	190	1,935	173	1,807	180
B	1,586	188	1,932	171	1,763	179
DK	1,627	188	2,258	191	1,648	188
F	1,380	175	1,925	175	1,597	175
GER	1,711	194	2,068	177	1,767	191
IRE	1,392	179	1,903	179	1,469	179
IT	1,392	176	1,960	178	1,487	177
LUX	1,814	200	2,011	177	1,879	192
NL	1,631	191	1,927	174	1,687	188
P	1,280	169	1,712	163	1,340	168
SP	1,483	179	1,878	166	1,641	174
SW	2,036	221	2,140	183	2,042	219
UK	1,643	191	1,908	177	1,696	188

**B3. (3c) THE DISTRIBUTION OF ENGINE CAPACITY (CM3)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE**

1997 - ACEA MEMBERS

	identified version					
	Petrol		Diesel		Petrol + Diesel	
Member State	average Cm3	average CO2	average Cm3	average CO2	average Cm3	average CO2
EU-15	**1,559**	**183**	**1,950**	**172**	**1,656**	**180**
A	1,633	187	1,953	167	1,825	175
B	1,559	184	1,927	169	1,761	176
DK	1,650	189	2,181	181	1,670	189
F	1,427	175	1,945	174	1,647	175
GER	1,718	192	2,069	175	1,773	189
IRE	1,388	173	1,928	175	1,458	173
IT	1,310	168	1,920	173	1,419	169
LUX	1,818	198	2,016	175	1,888	190
NL	1,635	190	1,945	170	1,701	186
P	1,272	165	1,782	162	1,367	164
SP	1,497	177	1,881	163	1,671	170
SW	2,003	218	2,061	171	2,008	213
UK	1,664	191	1,938	177	1,714	188

**B3. (3c) THE DISTRIBUTION OF ENGINE CAPACITY (CM3)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE**

1998 - ACEA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average Cm3	average CO2	average Cm3	average CO2	average Cm3	average CO2
EU-15	**1,561**	**182**	**1,950**	**167**	**1,669**	**178**
A	1,608	182	1,959	163	1,818	171
B	1,544	181	1,927	166	1,765	172
DK	1,642	188	2,057	167	1,666	186
F	1,432	172	1,938	169	1,640	171
GER	1,704	189	2,042	167	1,765	185
IRE	1,435	176	1,952	170	1,510	175
IT	1,306	167	1,941	170	1,452	168
LUX	1,829	197	2,005	168	1,900	185
NL	1,617	187	1,948	164	1,698	182
P	1,264	163	1,850	158	1,386	162
SP	1,528	176	1,891	162	1,715	169
SW	1,958	212	2,021	171	1,966	206
UK	1,669	191	1,945	174	1,717	188

B3. (3c) THE DISTRIBUTION OF ENGINE CAPACITY (CM3) OF NEW PASSENGER CARS FOR EACH FUEL TYPE FOR THE EU AND EACH MEMBER STATE

1999 - ACEA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average Cm3	average CO2	average Cm3	average CO2	average Cm3	average CO2
EU-15	**1,579**	**180**	**1,952**	**161**	**1,699**	**174**
A	1,637	180	1,972	158	1,847	166
B	1,541	178	1,925	162	1,769	168
DK	1,658	186	1,984	157	1,698	182
F	1,461	171	1,937	161	1,676	166
GER	1,709	187	2,027	162	1,783	181
IRE	1,405	169	1,938	161	1,475	168
IT	1,329	166	1,949	164	1,520	165
LUX	1,849	195	2,005	163	1,918	181
NL	1,612	183	1,947	159	1,703	177
P	1,281	161	1,866	153	1,419	159
SP	1,547	175	1,897	156	1,739	165
SW	1,965	206	2,054	170	1,972	203
UK	1,674	187	1,961	168	1,719	184

B4. EU LIST OF M1 VEHICLES POTENTIALLY REGISTERED AS N1
(BY MODEL) IN EACH MEMBER STATE

1999 - ACEA MEMBERS

			1999													
CARROS	MARQUE	MODELE	A	B	GER	DK	SP	F	UK	GR	IT	IRL	LUX	NL	P	Sw
BERLINE	AUDI	A3	0	0	0	1	0	0	0	0	0	0	0	0	0	0
		A4	0	0	2	0	0	0	0	0	0	0	0	0	0	0
		A6	0	0	1	0	0	0	0	0	0	0	0	0	0	0
	B.M.W.	SERIE 3	0	0	2	0	0	65	0	0	0	0	0	0	0	0
		SERIE 5	0	0	9	0	0	0	0	0	0	0	0	0	0	0
	CITROEN	SAXO	0	101	2	15	665	13,015	0	92	873	0	1	0	3,024	0
		XANTIA	0	0	0	0	0	155	0	0	0	0	0	0	0	0
		XM	0	0	0	0	0	21	0	0	0	0	0	0	0	0
		XSARA	0	19	0	0	0	5,638	0	0	0	198	1	0	546	0
		ZX	0	0	0	0	0	11	0	0	0	0	0	0	1	0
	FIAT	BRAVA	0	0	0	0	0	19	0	0	0	0	0	0	0	0
		BRAVO	0	0	0	0	0	455	0	0	0	74	0	0	842	0
		PANDA	1	0	35	0	0	199	0	94	7,134	0	0	0	11	0
		PUNTO	0	103	1	54	119	2,437	497	0	7,159	73	0	0	1,726	0
		SEICENTO	0	14	1	0	698	48	0	0	1,679	0	0	0	0	0
	FORD	ESCORT	0	0	0	0	2	222	0	0	0	0	0	0	0	0
		FIESTA	0	112	1	0	391	3,444	3,138	54	1,733	230	0	0	1,833	0
		FOCUS	0	2	0	0	0	336	0	0	0	0	0	0	0	0
		KA	0	0	0	0	0	219	0	0	0	0	0	0	0	0
		MONDEO	0	0	0	0	0	50	0	0	0	0	0	0	0	0
	MERCEDES	CLASSE A	0	0	3	0	0	773	0	0	0	0	0	0	0	0
		CLASSE E	0	0	65	0	0	0	0	0	5	0	0	0	0	0
		SERIE C	0	0	16	0	0	0	0	0	0	0	0	0	0	0
	OPEL	ASTRA	0	19	5	0	10	1,386	0	0	0	0	0	240	0	0
		CORSA	0	63	9	0	739	1,425	1,074	0	1,418	123	0	0	6,971	0
		OMEGA	0	0	2	0	0	0	0	0	0	0	0	0	0	0
		VECTRA	0	1	2	0	0	0	0	0	0	0	0	0	0	0
	PEUGEOT	106	0	26	0	0	222	5,574	60	0	294	0	0	0	140	0
		205	0	0	0	0	0	349	0	0	0	0	0	0	0	0
		206	0	53	0	0	174	15,965	0	0	0	0	0	0	0	0
		306	0	60	0	0	40	6,945	0	0	684	500	1	0	1,667	0
	RENAULT	CLIO	1	147	0	0	253	40,699	25	0	2,114	1	4	0	6,452	0
		LAGUNA	0	0	0	0	0	106	0	0	0	0	0	0	0	0
		MEGANE	0	28	0	0	0	7,638	0	0	0	343	0	0	919	0
		TWINGO	0	0	0	0	0	2,661	0	0	292	0	0	0	0	0
	ROVER	200	0	1	0	0	0	85	0	0	0	0	0	0	508	0
		400	0	0	0	0	0	6	0	0	0	0	0	0	0	0
	SAAB	9-3	0	2	0	0	0	2	0	0	0	0	0	0	0	0
	SEAT	AROSA	0	5	0	0	0	83	0	0	0	0	0	0	0	0
		IBIZA	0	32	0	0	0	301	0	0	229	0	0	0	5,688	0
	SKODA	FELICIA	0	2	0	0	0	9	0	0	0	0	0	0	521	0
		OCTAVIA	0	1	0	0	0	5	0	0	0	0	0	0	0	0
	SMART	SMART	0	0	1	0	0	0	0	0	0	0	0	0	0	0
	VOLKSWAGEN	GOLF	1	146	2	0	0	1,787	0	0	0	1	2	0	0	0
		LUPO	0	17	0	0	0	111	0	0	0	0	0	0	0	0
		PASSAT	0	0	13	8	0	0	0	0	0	0	0	0	0	0
		POLO	91	69	9	0	184	1,090	0	0	0	35	0	0	1,162	0
	VOLVO	S40	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		S70	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total		**94**	**1,023**	**181**	**78**	**3,497**	**113,334**	**4,794**	**240**	**23,614**	**1,578**	**9**	**240**	**32,011**	**0**

B4. EU LIST OF M1 VEHICLES POTENTIALLY REGISTERED AS N1
(BY MODEL) IN EACH MEMBER STATE

1999 - ACEA MEMBERS

			1999														
CARROS	MARQUE	MODELE	A	B	GER	DK	SP	F	UK	GR	IT	IRL	LUX	NL	P	Sw	FIN
BREAK	AUDI	A4	0	0	38	14	0	5	0	0	0	0	0	0	0	0	0
		A6	0	0	54	7	0	1	0	0	0	0	0	0	0	0	0
	B.M.W.	SERIE 3	0	0	7	2	0	2	0	0	0	0	0	0	0	0	0
		SERIE 5	0	0	65	2	0	0	0	0	0	0	0	0	0	0	0
	CITROEN	BERLINGO	0	0	4	0	14,792	10	0	0	0	0	0	0	0	0	0
		XANTIA	0	34	0	33	0	294	0	0	0	0	0	13	0	0	0
		XM	0	2	0	0	0	32	0	0	0	0	1	3	0	0	0
		XSARA	0	96	0	25	0	1,053	0	0	205	0	0	35	1	0	0
		ZX	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	FIAT	FIORINO	0	0	0	0	671	1	0	0	0	0	0	0	0	0	0
		MAREA	0	108	2	8	0	116	0	0	2,986	0	1	37	152	0	1
		PALIO	0	5	0	15	0	251	0	0	0	0	0	0	0	0	0
		TEMPRA	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
	FORD	COURIER	0	336	11	0	11	1	0	0	0	0	0	0	0	0	0
		ESCORT	1	40	0	75	0	135	0	0	0	0	0	87	0	0	0
		FOCUS	0	18	0	58	0	147	0	0	0	0	0	15	0	0	0
		MONDEO	8	24	44	43	0	150	0	0	0	0	0	88	0	9	3
	MERCEDES	CLASSE E	0	0	100	1	0	15	0	0	8	0	0	0	0	0	0
		COMPACTE	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0
		SERIE C	0	0	104	0	0	27	0	0	0	0	0	0	0	0	0
	OPEL	ASTRA	324	98	421	256	5	570	10,054	111	1,177	232	0	738	1,073	0	0
		COMBO	0	0	0	0	22	0	0	0	0	0	0	0	0	0	0
		OMEGA	0	5	13	0	0	0	0	0	0	0	0	0	0	0	0
		VECTRA	0	4	0	49	0	0	0	0	0	0	0	0	0	0	0
	PEUGEOT	306	0	47	1	57	3	307	0	0	0	0	0	111	24	0	0
		406	0	21	1	72	0	51	0	0	0	0	0	0	0	0	0
		PARTNER	0	1	8	0	4,611	5	0	0	0	0	0	0	0	0	0
	RENAULT	KANGOO	0	3	15	0	0	50	0	0	0	0	0	0	0	0	0
		LAGUNA	0	21	1	10	0	273	0	0	0	0	0	136	0	0	0
		MEGANE	0	18	0	0	0	210	0	0	0	0	0	41	0	0	0
	SAAB	9-5	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
	SEAT	CORDOBA	0	6	0	0	0	39	0	0	0	0	0	70	129	0	0
		INCA	0	358	3	0	892	2	0	0	0	0	0	0	0	0	0
	SKODA	FELICIA	106	1	284	2	0	4	0	0	234	30	0	0	66	0	0
		OCTAVIA	0	11	1	8	0	9	0	0	0	0	0	1	0	0	0
	VOLKSWAGE	CADDY	0	0	4	0	607	2	0	0	0	0	0	0	914	0	0
		DIVERS	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
		GOLF	6	43	6	84	0	16	0	0	0	0	0	94	0	2	0
		PASSAT	0	43	29	102	0	23	0	0	0	0	0	0	0	0	0
		POLO CLAS	19	21	1	101	0	0	0	0	0	0	0	214	0	0	0
	VOLVO	940	0	0	15	0	0	0	0	0	0	0	0	0	0	18	0
		960	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0
		V40	0	1	0	13	0	86	0	0	0	0	0	0	0	0	0
		V70	0	49	9	34	0	27	0	0	0	0	0	0	0	0	0
	Total		**464**	**1,414**	**1,248**	**1,073**	**21,614**	**3,915**	**10,054**	**111**	**4,624**	**262**	**2**	**1,683**	**2,359**	**29**	**4**

B4. EU LIST OF M1 VEHICLES POTENTIALLY REGISTERED AS N1
(BY MODEL) IN EACH MEMBER STATE

1999 - ACEA MEMBERS

			1999													
CARROS	MARQUE	MODELE	A	B	GER	DK	SP	F	UK	GR	IT	IRL	LUX	NL	P	Sw
COUPE	CHEVROLET	CAMARO	0	0	0	11	0	0	0	0	0	0	0	0	0	0
	MERCEDES	CLK	0	0	1	0	0	0	0	0	0	0	0	0	0	0
		CLK-GTR	0	0	1	0	0	0	0	0	0	0	0	0	0	0
	OPEL	TIGRA	0	0	0	0	0	0	0	0	0	0	0	0	6	0
	SAAB	9-3	0	2	0	0	0	4	0	0	0	0	0	0	0	0
		900	0	0	0	0	0	3	0	0	0	0	0	0	0	0
	Total		**0**	**2**	**2**	**11**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**
MONOSPACE	CHEVROLET	ASTRO	0	2	2	16	1	0	0	0	0	0	0	0	0	13
		TRANS SP.	0	136	3	72	0	0	0	0	0	0	0	30	0	0
	CHRYSLER	VOYAGER	0	75	28	268	0	14	0	0	0	0	0	244	344	0
	CITROEN	EVASION	0	0	2	259	0	51	0	0	0	0	0	13	0	0
	DODGE	CARAVAN	0	5	0	22	0	0	0	0	0	0	11	0	0	0
		RAM	0	0	0	0	0	0	0	0	0	0	0	1,372	0	0
	FIAT	MULTIPLA	0	5	0	0	0	258	0	0	0	0	0	1	0	0
		ULYSSE	0	0	69	64	0	29	0	0	0	0	0	0	0	0
	FORD	GALAXY	0	33	74	608	0	152	0	0	0	0	0	38	564	0
	FORD USA	AEROSTAR	0	0	1	0	0	0	0	0	0	0	0	0	0	0
		WINDSTAR	0	6	23	0	0	0	0	0	0	0	0	0	0	0
	G.M.C.	SAFARI	0	1	0	5	1	0	0	0	0	0	0	0	0	0
	MERCEDES	CLASSE V	0	0	5	97	0	12	0	0	0	1	0	690	122	0
	OPEL	SINTRA	0	19	1	0	0	0	0	0	0	0	0	31	0	0
		ZAFIRA	0	7	1	16	0	0	0	0	0	0	0	0	0	0
	PEUGEOT	806	0	0	3	233	0	148	0	0	0	0	0	57	0	0
	PLYMOUTH	VOYAGER	0	0	0	1	0	0	0	0	0	0	0	0	0	0
	PONTIAC	TRANS SP.	0	1	0	0	0	0	0	0	0	0	0	0	0	0
	RENAULT	ESPACE	26	0	6	0	0	488	0	0	0	0	0	0	848	0
		MEGANE	0	55	143	0	0	2,434	0	0	0	0	0	0	0	0
	SEAT	ALHAMBRA	0	12	1	130	0	15	0	0	0	0	0	142	737	0
	VOLKSWAGEN	SHARAN	0	29	3	911	0	11	0	0	0	0	0	150	621	0
	Total		**26**	**386**	**365**	**2,702**	**2**	**3,612**	**0**	**0**	**0**	**1**	**11**	**2,768**	**3,236**	**13**

B4. EU LIST OF M1 VEHICLES POTENTIALLY REGISTERED AS N1
(BY MODEL) IN EACH MEMBER STATE

1999 - ACEA MEMBERS

			1999													
CARROS	MARQUE	MODELE	A	B	GER	DK	SP	F	UK	GR	IT	IRL	LUX	NL	P	Sw
TS TERRAINS	ARO	ARO	0	0	0	0	6	15	0	0	0	0	0	0	0	0
	ASIA	RETONA	0	0	0	0	1	0	0	0	0	0	0	0	0	0
		ROCSTA	0	2	0	0	66	1	1	0	0	0	0	0	3	0
	BERTONE	FREECLIM.	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	CHEVROLET	BLAZER	6	26	31	41	126	0	0	0	0	0	0	0	0	0
		TAHOE	0	1	2	5	3	0	0	0	0	0	0	0	0	4
	CHRYSLER	DURANGO	0	0	0	0	3	0	0	0	0	0	0	0	0	0
	DIV FRANCE	AUVERLAND	0	0	0	0	0	15	0	0	0	0	0	0	0	0
		GRANDIN	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	DIV P. EST	UAZ	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	DIV U.S.A.	HUMMER	0	2	0	0	1	0	0	0	0	0	0	0	0	0
	DODGE	DURANGO	0	1	0	6	0	0	0	0	0	0	0	0	0	0
	FORD	MAVERICK	0	0	0	0	22	1	0	0	0	2	0	0	0	0
	FORD USA	BRONCO	0	0	0	0	2	0	0	0	0	0	0	0	0	0
		EXPEDITI.	0	3	0	0	0	0	0	0	0	0	0	0	0	0
		EXPLORER	0	21	25	62	383	0	0	0	0	0	0	0	0	0
	G.M.C.	JIMMY	0	0	0	0	2	0	0	0	0	0	0	0	0	0
		TAHOE	0	0	0	0	1	0	0	0	0	0	0	0	0	0
		YUKON	0	0	0	0	0	0	0	0	0	0	1	0	0	0
	JEEP	G.CHEROKE	0	19	22	240	5,220	12	0	0	0	0	0	0	1,101	0
		WRANGLER	0	0	2	0	471	2	0	0	0	0	0	0	24	0
		XJ	0	40	2	35	2,324	21	0	0	0	186	0	0	206	0
	LADA	NIVA	0	2	0	0	163	41	0	0	0	0	0	0	15	0
	LAND ROVER	DEFENDER	104	227	686	67	1,530	1,173	5,304	0	0	0	7	315	701	112
		DISCOVERY	0	53	5	102	1,810	102	75	0	0	290	0	397	832	0
		DIVERS	0	0	2	0	1	0	0	0	0	0	0	15	0	0
		FREELAND.	0	84	3	489	5,029	281	72	0	0	39	0	381	2,878	0
		R.ROVER	0	16	0	0	640	118	0	0	0	0	0	0	228	0
	LINCOLN	NAVIGATOR	0	6	0	0	3	0	0	0	0	0	0	0	0	0
	MERCEDES	CLASSE ML	0	2	7	83	1,138	0	0	0	0	0	0	0	109	0
		SERIE G	49	6	25	15	30	4	0	0	0	0	0	9	1	0
	OPEL	FRONTERA	2	114	2	198	4,136	25	0	0	0	128	0	51	2,145	0
		MONTEREY	0	0	0	0	625	0	0	0	0	0	0	1	31	0
	ROVER	DIVERS	0	0	0	0	0	0	0	1	0	0	0	0	0	0
	SANTANA	SJ	0	0	0	0	0	521	0	0	0	0	0	0	677	0
		VITARA	0	0	0	0	0	203	0	0	0	0	0	0	0	0
	Total		**161**	**625**	**814**	**1,343**	**23,739**	**2,535**	**5,452**	**1**	**0**	**645**	**8**	**1,169**	**8,951**	**116**

Note: While ACEA has produced a list of M1 vehicles potentially registered as N1 in some Member States, KAMA and JAMA have produced a list of marketed M1 vehicles.

Monitoring of JAMA's commitment on CO_2 Emission Reduction from Passenger Cars (1995-1999)

Final Version

11.07.2000

Joint Report
of the
Japan Automobile Manufacturers Association
and
the Commission Services

Annex 2

Joint Monitoring by European Commission and JAMA of Environmental Agreement on CO_2 Emission Reduction from Passenger Cars

ES SUMMARY OF PROGRESS IN DELIVERING THE AGREEMENT

E1 Trends in specific emissions of CO_2 (g/km) *(averaged over all newly registered passenger cars for the EU and for Member States: 1995-1999)*

In the EU, averaged specific CO_2 emissions of passenger cars sold by JAMA Members showed a decreasing trend within the reporting period. Specific CO_2 emission (g/km) levels of Japanese cars have tended to decrease by an average of roughly 1% each year and fell from 196 g/km in 1995 to 187 g/km in 1999, achieving a 4.6% reduction as compared with 1995. (See Figure 1).

The average CO_2 emission levels of gasoline-fuelled cars recorded a decrease from 191g/km in 1995 to 181g/km in 1999 achieving a 5.2% reduction as compared with 1995.
The average CO_2 emission levels of diesel cars recorded a decrease from 239g/ km in 1995 to 221g/km achieving a 7.5% reduction as compared with 1995.

In 1997 passenger vehicles using other fuels were introduced, with higher specific CO_2 emissions than gasoline and diesel cars, but have not influenced the trend otherwise, due to their decreasing specific CO_2 emissions (-17%) and low sales volume (0.1% of total fleet in 1999).

Trends in Member States are presented in the Annex.

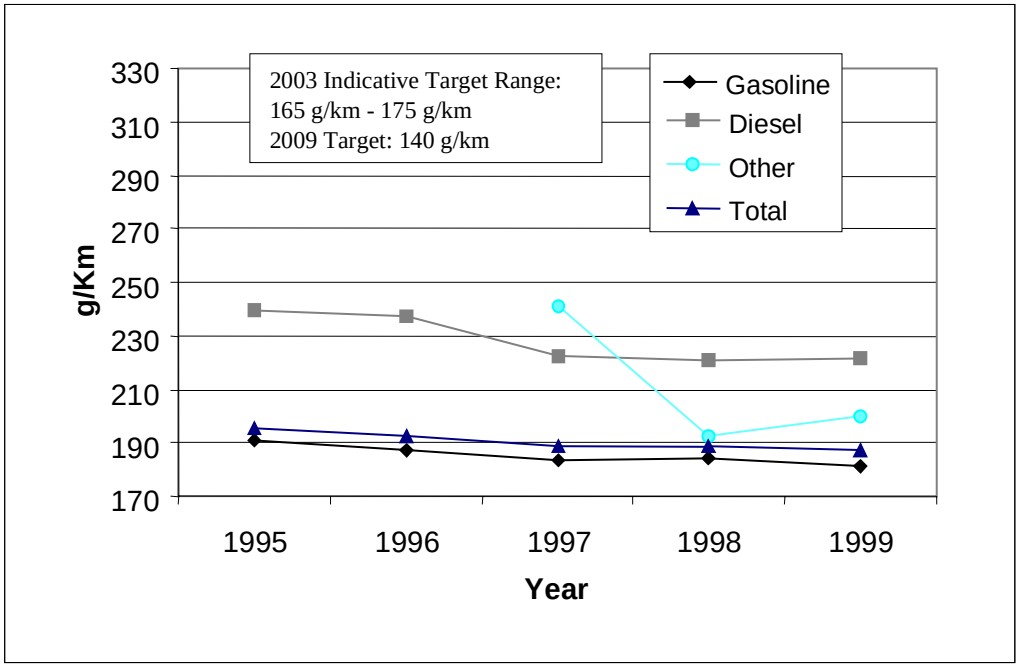


Figure 1. EU Trends of JAMA's fleet in average specific emissions of CO_2

E2 Trends in specific fuel consumption by fuel type (l/ 100 km) *(averaged over all newly registered passenger cars for the EU and for Member States: 1995-1999)*

Gasoline passenger cars, which occupied most of JAMA's sales volumes in over the reporting period, consumed about 8 l/ 100 km in 1995. Over the reporting period, their average fuel consumption has decreased to achieve 7.5 l/ 100 km in 1999. Diesel cars consumed an average of 9 l/ 100 km in 1995, and achieved an average fuel consumption of 8.2 l/ 100 km in 1999. 'Other fuels' introduced in 1997 with an average fuel consumption of 10.1 l/ 100 km, have improved their fuel consumption over the 3 past years, with fuel consumption being less than diesel engines at the end of the reporting period.

Total fuel consumption did not differ much from that of gasoline passenger cars due to the small sales volume of diesel cars and other fuels (see Figure 2).

Trends in Member States are presented in the Annex.

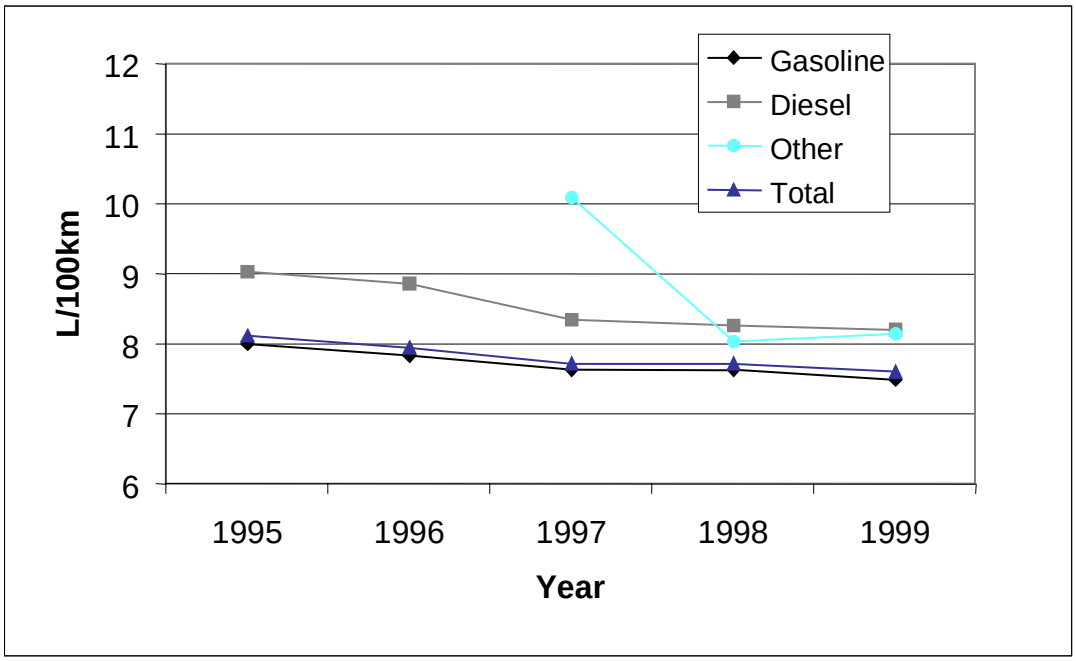


Figure 2. Trends of JAMA's fleet in average specific fuel consumption by fuel

E3 Trends in physical fleet characteristics *(mass (kg), engine capacity (cm^3), engine power (kW)) averaged over all newly registered passenger cars in the EU (Optional) (1995-1999)*

General trends in physical characteristics show an increase over the reporting period, notably in mass (+ 7.1%). This is mainly due to increasing gasoline car weight (+ 6.3%) and increased diesel car sales (+ 117%) over the reporting period, which resulted in an overall increase in the average vehicle mass, the engine capacity (+ 0.8%), and the engine power (+ 1.4%).

E4 Technical developments introduced to reduce CO_2 emissions *(including introduction of new technologies e.g. direct injection, low (less than 120 g/km) emission cars, and alternative concepts)*

The main new technologies introduced since 1995 include the gasoline and diesel direct injection engines. The Lean-Burn Engine and Continuous Variable Transmission Technology (CVT) have already been introduced and are continuing to be used on cars sold on the market. Development efforts are being sustained with a view

to marketing hybrid cars and other technologies.

E5 Brief overall assessment on progress in relation to the target

JAMA fleet's average specific CO_2 emissions fell from 196 g/km to 187 g/km over the reporting period. Japanese automobile manufacturers have produced passenger cars achieving lower specific CO_2 emission levels since 1995, achieving a 4.6% decrease in average CO_2 specific emissions. JAMA's fleet average shows a constant trend downwards, despite the trend upward for passenger cars with diesel and other fuel engines and despite the increase in car weight. In this respect it should be mentioned that the reporting covers a period before the Environmental Agreement with the Commission on CO_2 reduction from passenger cars was in place.

The composition of JAMA's fleet has slightly changed over the reporting period, with the share of diesel cars increasing. While gasoline cars accounted for 89.6% of the fleet and diesel cars for 10.4% in 1995, diesel cars share increased to 15.6% and gasoline cars share decreased accordingly to 84.3%. The share of cars using other fuels is not yet significant (0.1% in 1999).

An important achievement before the 2003 review is the launch on the EU market of gasoline cars emitting an average of 120 g/km in 1999. Although sales remain small (5,544 vehicles in 1999), this shows a positive effort made by JAMA. To achieve the CO_2 emission targets agreed upon in the commitment by 2003 and 2009, Japan automobile manufacturers will further explore various technologies namely Direct Injection (DI), hybrid vehicles and Continuous Variable Transmission Technology (CVT).

1. MONITORING OF TECHNOLOGICAL DEVELOPMENTS AFFECTING THE AGREEMENT

1.1. Agreement Initiatives (optional)

1.1.1. Research & Development

Sections 1.2 and 2.5 cover JAMA technological developments and research activities.

1.2. Technological developments

1.2.1. Description of technological developments and their fuel efficiency characteristics (new technologies, alternative concepts)

1.2.2. Availability of New Technologies in the EU and Member States

1.2.3. Availability of alternative concepts passenger cars in the EU (optional: in Member States)

1.2.4. Availability of low emission passenger cars (e.g. emitting less than 120 g/km)in the EU (optional: in Member States)

Description

JAMA has committed itself to achieving a 140 g/km emission target by 2009 and JAMA's members are continuing CO_2 emission reduction R&D toward this goal. Ongoing efforts are made to make technological improvements successively available to the market. Technological developments achieved by JAMA's members within the reporting period include lean burn engines, Direct Gasoline and Diesel Injection engines and Continuous Variable Transmission Technology (CVT). Other current research developments include hybrid vehicles.

Availability of these new technologies

The CO_2 emission reduction technologies made available by JAMA to the market are shown in Figure 6 in Section 2.5. A direct injection gasoline model has been on the market since 1997 and it steadily achieved greater market penetration by 1999 (3% of JAMA's sales on the EU market in 1999). Similarly, a direct injection diesel car debuted on the market in 1998 and has rapidly penetrated the markets in 1999 (1% of JAMA's sales in 1999). Efforts are also made to diffuse the Lean-Burn engine car available on the market prior to 1995 and the Continuous Variable Transmission Technology (CVT) on the market.

No alternative concept passenger cars have been made available on the EU market between 1995 and 1999. Japanese manufacturers are currently developing a gasoline-hybrid passenger car to be launched in Fall 2000 in order to meet this requirement.

One low-emission passenger car has been put on the EU market within the reporting period, achieving 120 g/km (launched in 1999). In 2000, a 80 g/km gasoline-hybrid car and another119 g/km car have been put on the market by JAMA member companies. Another 120 g/km gasoline-hybrid model will be launched in Fall 2000.

1.3 Description of market trends in physical fleet characteristics *(mass (kg), engine capacity (cm^3), engine power (kW) in the EU and Member States)*

For Japanese cars as a whole, mass increased by approximately 7.1% in 1999 as compared with 1995. The main factor is the increase in the weight of gasoline-fuelled cars (approx. 6.3%). Engine capacity of Japanese cars showed a shift towards an increase by approximately 0.8% and their engine power presented an increase by approximately 1.4% in 1999 as compared with 1995. CO_2 emission levels, however, showed a decrease of approximately 4.6% for Japanese cars as a whole in 1999 as compared with 1995, a sign that the cars available on the market have benefited from CO_2 reduction technologies (see Section 2.4 for further details and linkage to CO2).

Trends in Member States are presented in the Annex.

2. STATISTICAL MONITORING (1995-1999)

2.1. Listing of all (M1) newly registered passenger cars (model level) in the EU

See Table 4 in Annex[5].

2.2. Trends in specific emissions of CO_2 (g/km)*(averaged over all newly registered passenger cars by fuel type in the EU and Member States)*

As shown in Figure 1 (recall chapter E1), the average specific CO_2 emission levels of Japanese cars over the 1995 - 1999 period showed a decreasing trend. Their average specific CO_2 emission levels tended to decrease

[5] Table 4 presents a list of available M1 vehicles covered by the Commitment, not the 'grey areas' around M1 vehicles potentially registered as N1 in some Member States.

by an average of roughly 1% each year and fell from 196 g/km in 1995 to 187 g/km in 1999 (marking a 4.6% reduction as compared with 1995).

The averaged specific CO_2 emission levels of gasoline-fuelled cars recorded a decrease from 191 g/km in 1995 to 181 g/km in 1999, an approximate 5.2% reduction as compared with 1995.

The averaged specific CO_2 emission levels of diesel cars recorded a decrease from 239 g/km in 1995 to 221 g/km in 1999, an approximately 7.5% reduction as compared with 1995.

Although other fuel types are not influential in terms of EU CO_2 trend due to a very small sale volume over the reporting period, their average specific CO_2 emissions have decreased very significantly in 2 years, from 241 g/km, 200 g/km in 1999 (-17%), falling under diesel cars specific emission levels.

Total average fuel consumption decreased within the reporting period: the diesel fuel consumption decreased from about 9 l/100 km to 8.2 l/100km, and the gasoline fuel consumption from 8 l/100 km to 7.5 l/100km. Trends in average CO_2 emissions in Member States are given in the Annex.

2.3. Number of newly registered passenger cars (*by fuel type in the EU and Member States)*

The number of gasoline passenger cars sold steadily increased from 1,013,138 vehicles in 1995 to 1,379,723 vehicles in 1999 (+36%) and represents about 84% of total sales by JAMA members. The number of diesel passenger cars sold increased from 117,577 in 1995 to 255,165 in 1999 (+117%), - although remaining small as compared to gasoline cars (see Figure 3).

JAMA's market share of total EU passenger cars (gasoline + diesel) was 9.9% in 1995, and 11.5% in 1999.

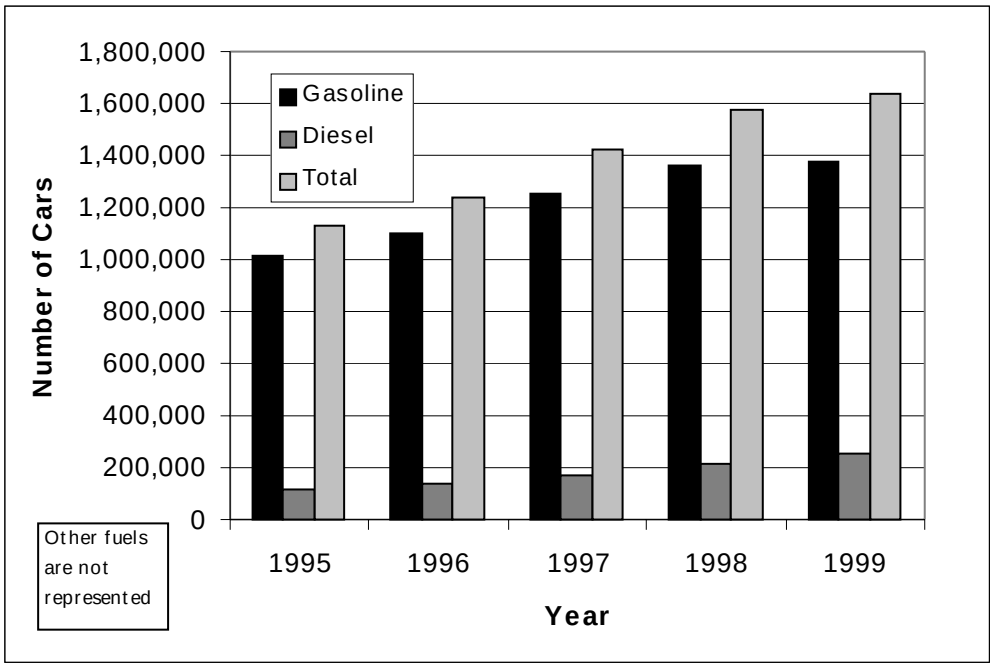


Figure 3. Number of newly registered passenger cars by JAMA's members

JAMA's fleet composition has changed over the reporting period. The share of cars emitting more than 181 g/km has decreased in all upper categories, with the exception of the 201-250 g/km category (+4.3%). The share of cars emitting between 161 g/km and 180 g/km has increased by 3.6% while the share of cars in the 181-200 g/km category has decreased by 13.5%. The share of cars in lower categories 121 g/km and 101-120 g/km has increased by 8.9% and 0.3% respectively (see Figure 4).

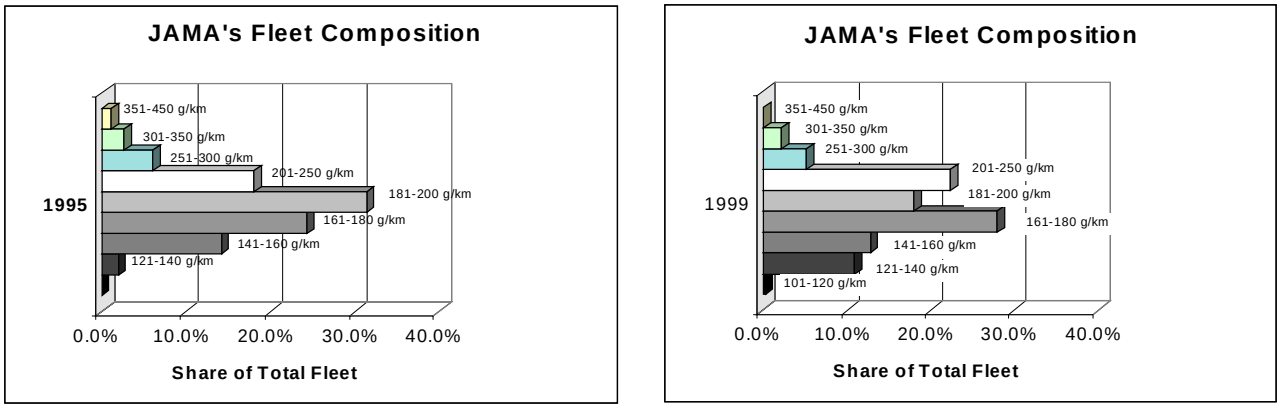


Figure 4: JAMA's Fleet Composition per CO_2 Category in Shares of Total (%)

2.4. EU trends in physical fleet characteristics *(mass (kg), engine capacity (cm^3), engine power (kW)) by fuel type averaged over all newly registered passenger cars; and relationship to CO_2 emissions)*

Although there is no significant trend in physical characteristics, the overall trend is either upwards or constant (with some very small reductions for some parameters) (see Figure 5).

Average total automobile mass was 1,095 kg in 1995 and increased by 7.1% over the reporting period (1,173 kg in 1999).

Gasoline automobiles' average mass has increased by 6.3% within the reporting period, from 1,056 kg in 1995 to 1,123 kg in 1999. Diesel automobiles' average mass reached the minimum of 1,447 kg in 1997 (against 1,461 kg in 1995) but increased up to 1,507 kg in 1999; i.e. +3.1% within the reporting period. Other fuels cars' mass has decreased by 6% since 1997 (1,284 kg in 1999). The overall trend in average mass shows an increase over the 1995-1999 period, for gasoline and diesel cars.

Total engine capacity has increased by 0.8% within the monitoring period, from 1,621 cm^3 in 1995 to 1,634 cm^3 in 1999 (with a maximum in 1998, 1,659 cm^3). Gasoline engine capacity reached the maximum 1,558 cm^3 capacity in 1998 (against 1,543 cm^3 in 1995) and decreased to 1,511 cm^3 in 1999 (-2.1% as compared with 1995) Diesel engine capacity reached a minimum 2,285 cm^3 capacity in 1997 (against 2,298 cm^3 in 1995) but remained constant over the reporting period (2,296 cm^3 in 1999). The overall trend shows no clear variations in engine capacity over the reporting period.

Total engine power has remained constant around the value of 70 kW (71 kW in 1999), reaching a maximum of 72 kW in 1998 (against 70 kW in 1995). On the whole, there was a 1.4% increase in EU average. Gasoline engine power has remained constant around 70 kW (70 kW in 1995 and 71 kW in 1999), reaching a maximum of 72 kW in 1998. Diesel engine power has steadily increased by 10.6%within the reporting period, i.e. from 66 kW in 1995 to 73 kW in 1999. The overall constancy of average engine power of JAMA's fleet has not been influenced by the upward trend in diesel engine power.

While the physical characteristics increased over the period, average specific CO_2 emissions dropped by 4.6% over the reporting period (see Figure 5B).

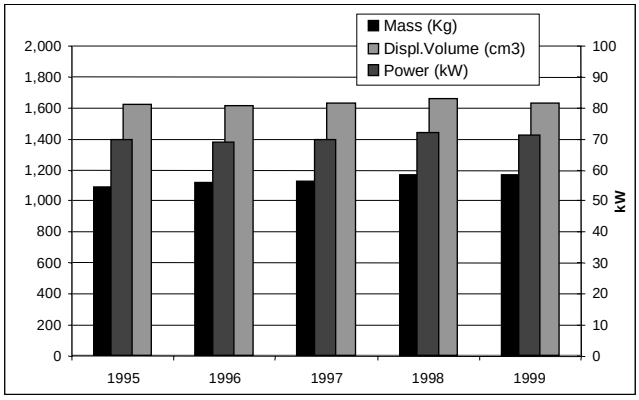


Figure 5: Market trends in physical fleet characteristics for JAMA Members

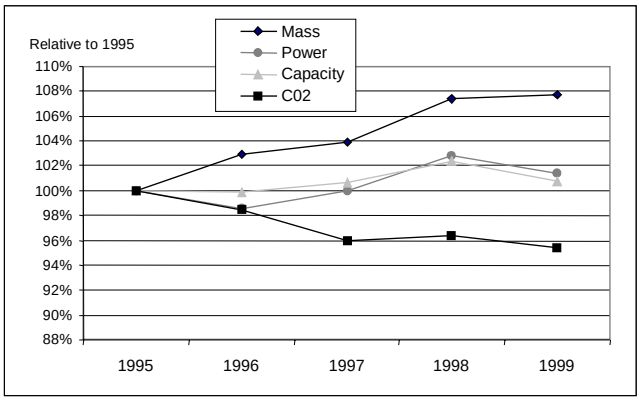


Figure 5B: Relative trends in physical fleet characteristics and specific CO_2 emissions

2.5. Trends in new technologies in the EU and Member States supported by data when possible (optional)
(e.g. % or number of total newly registered passenger cars which are direct injection)

JAMA's Members have introduced several new technologies on the EU market over the monitoring period (see description in 1.2). Trends in sales vary across technologies, but overall, shares of JAMA total new sales remain small (less than 3%). The shares of cars equipped with gasoline & diesel direct injection engines have increased from 0% to 2.5% and 1% (respectively) since their respective launch in 1997 and 1998. Shares of cars with lean burn engines have decreased since 1997 (launched in 1992) from 4.5% to 2.5% and sales of cars equipped with Continuous Variable Transmission Technology (CVT) have not shown any particular trends.

The trends for each technology, as well as the share of new passenger cars equipped with these technologies in total new passenger car sales by JAMA, are shown in Figure 6 below:

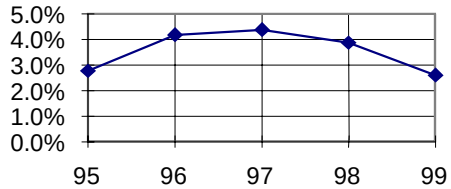
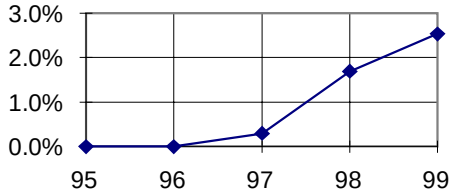
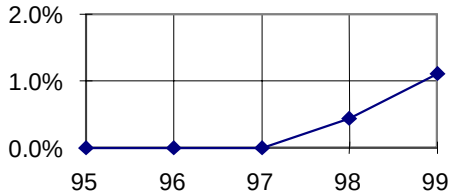
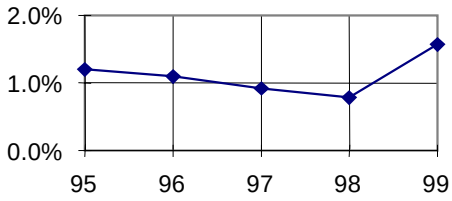
	Qualitative Discription	Quantitative (Optional)
Lean burn	* Marketed in 1992. * Has shown a somewhat receding trend since 1997.	
Direct Injection, gasoline	* Since it was first marketed in 1997 it has shown definite growth.	
Direct Injection, diesel	* Has been marketed in 1998. * Showed rapid growth in 1999.	
CVT	* Marketed in 1998. * No particular trend between 1995 and 1999.	
Alternative Concepts	Alternative concepts are not defined by manufacturers but are modified on the market.	

Figure 6: Trends in New Technologies launched by JAMA on the EU market

2.6. Trends in alternative concepts passenger cars in the EU and Member States supported by data when possible (optional) *(e.g. % or number of total newly registered passenger car)*

Nothing to report.

2.7. Trends in low emission passenger cars in the EU and Member States supported by data when possible (optional) *(e.g. % or number of total newly registered passenger cars which emit less than 120 g/km)*

JAMA released its first 120 g/km car on the EU market in 1999. In 2000, JAMA has launched a 119g/km car and a 80 g/km gasoline-hybrid car. Furthermore, JAMA intends to release a 120 g/km gasoline-hybrid model in the autumn of 2000 (see Section 1.2.4).

2.8. Data methods (Monitoring Decision annexes II & III), data sources, and data confidence levels

JAMA has utilised in this report CO_2 statistics supplied by Marketing Systems Corporation. Marketing Systems Corporation is a consultancy, whose business is to forecast and sell data to clients. They use official data sources in the Member States for car registration data. Marketing Systems Corporation's CO_2 database covers, in a consistent manner, most of the EU market (with some unknown figures) and is widely regarded as one of the most reliable data sources currently available. The uncertainties incorporated into the figures shown in this report due to the incompleteness of the data set cannot be numerically quantified. However, they are estimated to be small. It can be assumed that they do not influence the overall result of the monitoring.

2.9. Description of measurement issues for CO_2 Emission Factors *(pre and post 1995)*

JAMA's CO_2 emissions figures have been established according to Directive 93/116/EC, which replaced the old Directive 80/1268/EC. The new test cycle has been fully implemented as from 1.1.1997, and will be applicable for the coming years. Among other changes, the new cycle includes for the first time a cold start period, and consequently values for fuel consumption and CO_2 emissions are higher under the new system. The implementation of this new measuring procedure has led to an artificial average increase of 9% of the CO_2 emission figures, compared to the previously used Directive, whereas the CO_2 emissions from cars in the real world have not changed.

2.10. Other Issues

Nothing to report.

3. KEY ASSUMPTIONS TO THE AGREEMENT

3.1. Availability of Enabling Fuels

3.1.1. Description of state of assumption
3.1.2. Statement on whether assumption is up-held or compromised
3.1.3. If necessary: Statement on implication for agreement and justification

JAMA indicates that the premise on which the achievement of the CO_2 emission targets rests is not only the development of technology necessary for improving fuel efficiency but also for upgrading the quality of the fuel

products that make this possible. JAMA states that the lean-burn gasoline engine will not become an effective technology without exhaust gas treatment technologies such as NOx catalyst. According to JAMA the same can be said for the diesel engine and it will not be effective until Diesel Particulate Filter (DPF) and NOx catalyst are fitted.

The Commission services notes the importance which JAMA attributes to fuel quality but considers that the provisions of Directive 98/70 on fuel quality are being complied with. With respect to «Zero Sulphur Fuel» the Commission services are currently studying the need of such fuels and the possible repercussions of its production and distribution to other industrial sectors. The Commission services intend to report on the results of this investigation by the end of the year 2000.

3.2. Distortion of Competition - link to 4.7.1

3.2.1. Description of state of assumption
3.2.2. Statement on whether assumption is up-held or compromised
3.2.3. If necessary: Statement on implication for agreement and justification

In the negotiations between JAMA and the Commission on JAMA's CO_2 Commitment all key factors of competition were taken into account when determining the intermediate and final reduction levels and timetable needed to undertake a reduction effort equivalent to ACEA's. JAMA is satisfied that the Environment Council of October 1999 concluded that JAMA committed itself to CO_2 reduction efforts equivalent to those of other associations.

3.3. Promotion of CO_2 efficient technologies

3.3.1. Description of state of assumption
3.3.2. Statement on whether assumption is up-held or compromised
3.3.3. If necessary: Statement on implication for agreement and justification

Nothing to report.

3.4. Acceptance of innovation

3.4.1. Description of state of assumption
3.4.2. Statement on whether assumption is up-held or compromised
3.4.3. If necessary: Statement on implication for agreement and justification

Nothing to report.

4. OTHER ISSUES

4.1. New Measures affecting CO_2 - *and link to 3.3 (diffusion issues)*

4.1.1. Description
4.1.2. Comment on impact of the issue and on implication for agreement

Nothing to report.

4.2. New regulatory measures

4.2.1. Description
4.2.2. Comment on impact of the issue and on implication for agreement

JAMA anticipates that the End-of-Life Vehicle (ELV) Directive will have adverse implications for the fuel efficiency of cars, as it may limit in its opinion the use of certain light materials and technologies, while burdening significantly the companies.

The Commission does not expect repercussions of the ELV Directive on the CO_2 commitment.

4.3. Fiscal Measures

4.3.1. Description
4.3.2. Comment on impact of the issue and on implication for agreement)

Nothing to report.

4.4. Breakthrough technologies - *and link to 3.3 (diffusion issues)*

4.4.1. Description
4.4.2. Comment on impact of the issue and on implication for agreement

Nothing to report.

4.5. Research Programmes

4.5.1. Description
4.5.2. Comment on impact of the issue and on implication for agreement

Nothing to report.

4.6. Other measures - telematics, infrastructure, education

4.6.1. Description
4.6.2. Comment on impact of the issue and on implication for agreement

JAMA believes that measures such as the promotion of trade-in purchase of new cars, presentation of correct and proper car maintenance methods, driver training, optimisation of infrastructure, effective and efficient land use, and efforts to achieve a smoother traffic flow will have a beneficial effect on CO_2 reduction. JAMA thinks that such measures should therefore be embraced in a positive manner under government lead and with the co-operation of the industrial sectors involved.
JAMA, for its part, also engages in driver education activities for more environmentally friendly driving in the EU.

4.7. Economic situation of the car industry *(This includes, for KAMA only, a report on hampering measures*)

4.7.1. Description
4.7.2. Comment on impact of the issue and on implication for agreement

In the European market, JAMA believes that Japanese car manufacturers have lost their competitive price edge to European manufacturers as a result of the combination of a weak Euro and a strong Pound.

While the domestic Japanese market is showing signs of a recovery the situation remains strained.
JAMA explains that the Japanese government is considering the introduction of measures such as the imposition of a green or environment tax to tackle the issue of global warming. JAMA argues that these measures are believed to impact demand trends. The Amended Japanese Energy Saving Act spells out what are seen as stiff target values for car manufacturers. They will have a substantial impact on management.

For the reporting period, the Commission services have no evidence of negative impacts on the economic situation of JAMA's member companies associated with the CO_2 commitment.

5. CONCLUSIONS

5.1. Progress Statement on Delivering the Agreement

Japanese automobile manufacturing companies will concentrate on CO_2 emission reductions by developing low-emission cars. Although Japanese companies have begun to put more CO_2 efficient gasoline cars (emitting 119 g/km) on the EU market in 1999 and have launched a 80 g/km gasoline-hybrid car on the market in 2000, there was no sign of significant CO_2 emissions reductions due to these factors during the period 1995 to 1999 due to low sales volumes.

5.2. Statement on Expected Future Progress of the Agreement

The estimated target range of 165-175 g/km in 2003 and the final target value of 140 g/km in 2009 require further serious effort by the Japanese automobile manufacturers. Importantly, and as agreed upon, this target will mainly be achieved by technological developments affecting different car characteristics and market changes linked to these developments. Regarding technological developments, JAMA reiterated that its members would aim at a high share of new cars equipped with CO_2 efficient technologies. Japanese automobile manufacturers have agreed to make every endeavour to contribute to the achievement of JAMA's goals.

In order to achieve the targets JAMA believes that the following would be desirable:

1. Improving the quality of the fuels available on the market.
2. Sound development of automobile industry and manufacturers' stable profitability.
3. Adopting measures to diffuse CO_2 emission reduction technologies in consideration of a balanced approach with regard to other regulatory requirements.

However, up to now; none of these issues hampered the improvement of fuel efficiency.

Data Annexes

Data Annexes (1995-1999) attached to the report

B1 : SPECIFIC FUEL CONSUMPTION AND EMISSIONS OF CO_2 AVERAGED OVER ALL NEWLY REGISTERED PASSENGER CARS FOR EACH DIFFERENT FUEL-TYPE, FOR THE EU AND EACH MEMBER STATE

B2 : THE DISTRIBUTION OF CO_2 EMISSIONS IN THE NEW PASSENGER CAR FLEET FOR EACH DIFFERENT FUEL TYPE, FOR THE EU

B3 : THE DISTRIBUTION OF AVERAGED MASS, POWER AND ENGINE CAPACITY OF NEW PASSENGER CARS FOR EACH FUEL TYPE FOR THE EU-15 AND EACH MEMBER STATE

B3a. The Distribution of New Passenger Cars: by Average Mass (kg)[6]

B3b. The Distribution of New Passenger Cars: by Average Engine Power (kW)

B3c. The Distribution of New Passenger Cars: by Average Engine Capacity (cm3)

B4 EU-15 LIST OF ALL M1 VEHICLES (BY MODEL) COVERED BY THE COMMITMENT (1995-1999), AND THEIR MEMBER STATE AVAILABILITY

[6] Curb weight of vehicles.

B1. SPECIFIC FUEL CONSUMPTION (L/100km) AND EMISSIONS OF CO2 (g/km) AVERAGED OVER ALL NEWLY REGISTERED PASSENGER CARS FOR EACH DIFFERENT FUEL-TYPE, FOR THE EU AND EACH MEMBER STATE

1995 - JAMA MEMBERS

1995	Petrol			Diesel			Other			All			CO2	Total
	Number	Fuel Efficiency	CO2	Number	Fuel Efficiency	CO2	Number	Fuel Efficiency	CO2	Number	Fuel Efficiency	CO2	unknown	Number
EU-15	1,013,138	8.0	191	117,577	9.0	239	0	0.0	0	1,130,715	8.1	196	103260	1233975
A	39,489	8.0	190	12,013	7.7	204	0	0.0	0	51,502	7.9	193	4583	56085
B	30,345	7.7	183	13,631	7.0	187	0	0.0	0	43,976	7.5	184	13831	57807
DK	30,311	7.8	186	694	8.3	219	0	0.0	0	31,005	7.8	187	5763	36768
F	46,535	7.9	187	25,631	8.4	222	0	0.0	0	72,166	8.0	200	4203	76369
FIN	18,324	7.8	187	466	7.4	197	0	0.0	0	18,790	7.8	187	2816	21606
GER	351,451	8.1	193	21,640	10.6	282	0	0.0	0	373,091	8.2	198	5435	378526
GR	12,345	7.9	187	58	6.6	176	0	0.0	0	12,403	7.8	187	15856	28259
IRE	25,166	7.5	179	3,276	7.4	197	0	0.0	0	28,442	7.5	181	3637	32079
IT	70,869	7.9	189	7,331	11.4	302	0	0.0	0	78,200	8.2	199	5568	83768
LUX	2,014	8.3	198	535	8.1	216	0	0.0	0	2,549	8.3	202	751	3300
NL	89,793	7.7	183	3,133	6.9	184	0	0.0	0	92,926	7.7	183	6296	99222
P	18,762	7.5	178	851	10.1	269	0	0.0	0	19,613	7.6	182	5925	25538
SP	36,168	8.0	190	7,834	7.9	209	0	0.0	0	44,002	8.0	194	24972	68974
SW	18,605	8.4	201	184	10.8	287	0	0.0	0	18,789	8.5	202	2403	21192
UK	222,961	8.2	195	20,300	10.5	277	0	0.0	0	243,261	8.4	202	1221	244482

B1. SPECIFIC FUEL CONSUMPTION (L/100km) AND EMISSIONS OF CO2 (g/km) AVERAGED OVER ALL NEWLY REGISTERED PASSENGER CARS FOR EACH DIFFERENT FUEL-TYPE, FOR THE EU AND EACH MEMBER STATE

1996 - JAMA MEMBERS

1996	Petrol			Diesel			Other			All			CO2	Total
	Number	Fuel Efficiency	CO2	Number	Fuel Efficiency	CO2	Number	Fuel Efficiency	CO2	Number	Fuel Efficiency	CO2	unknown	Number
EU-15	1,101,565	7.8	187	139,093	8.9	238	0	0.0	0	1,240,658	7.9	193	101486	1342144
A	43,746	7.8	186	13,481	7.5	200	0	0.0	0	57,227	7.7	189	2064	59291
B	31,067	7.4	177	11,171	6.7	178	0	0.0	0	42,238	7.2	178	14888	57126
DK	28,971	7.5	180	244	7.6	202	0	0.0	0	29,215	7.5	180	6864	36079
F	53,668	7.6	182	29,049	8.1	215	0	0.0	0	82,717	7.8	193	3707	86424
FIN	22,325	7.7	185	1,249	7.7	204	0	0.0	0	23,574	7.7	186	1832	25406
GER	373,822	7.9	188	19,657	10.6	282	0	0.0	0	393,479	8.0	193	6547	400026
GR	24,069	7.5	180	21	6.9	184	0	0.0	0	24,090	7.5	180	12493	36583
IRE	28,015	7.3	174	3,174	7.6	203	0	0.0	0	31,189	7.3	177	6379	37568
IT	69,422	7.7	184	12,997	10.5	278	0	0.0	0	82,419	8.1	199	3742	86161
LUX	2,209	8.0	190	506	7.4	197	0	0.0	0	2,715	7.9	192	421	3136
NL	87,407	7.5	179	4,148	7.0	188	0	0.0	0	91,555	7.5	179	6888	98443
P	22,064	7.1	170	2,272	10.9	288	0	0.0	0	24,336	7.5	181	4609	28945
SP	40,693	7.8	186	16,618	8.3	224	0	0.0	0	57,311	7.9	197	24283	81594
SW	20,974	8.1	194	355	11.5	304	0	0.0	0	21,329	8.2	196	3047	24376
UK	253,113	8.2	196	24,151	10.0	275	0	0.0	0	277,264	8.3	203	3722	280986

B1. SPECIFIC FUEL CONSUMPTION (L/100km) AND EMISSIONS OF CO2 (g/km) AVERAGED OVER ALL NEWLY REGISTERED PASSENGER CARS FOR EACH DIFFERENT FUEL-TYPE, FOR THE EU AND EACH MEMBER STATE

1997 - JAMA MEMBERS

1997	Petrol			Diesel			Other			All			CO2	Total
	Number	Fuel Efficiency	CO2	Number	Fuel Efficiency	CO2	Number	Fuel Efficiency	CO2	Number	Fuel Efficiency	CO2	unknown	Number
EU-15	1,256,914	7.6	184	168,736	8.3	222	95	10.1	241	1,425,745	7.7	188	85073	1510818
A	37,510	7.6	183	14,888	7.3	194	0	0.0	0	52,398	7.5	186	2288	54686
B	36,503	7.5	179	14,403	6.5	173	4	10.3	245	50,910	7.2	177	8753	59663
DK	34,791	7.5	180	662	9.1	242	0	0.0	0	35,453	7.5	181	7174	42627
F	50,332	7.9	188	27,644	8.0	213	91	10.1	241	78,067	7.9	197	1714	79781
FIN	25,763	7.6	184	1,948	7.6	204	0	0.0	0	27,711	7.6	186	840	28551
GER	412,706	7.7	185	18,398	9.2	246	0	0.0	0	431,104	7.8	188	3325	434429
GR	29,812	7.3	174	202	6.7	180	0	0.0	0	30,014	7.3	174	15427	45441
IRE	29,751	7.2	173	3,491	7.7	207	0	0.0	0	33,242	7.2	176	10381	43623
IT	112,186	7.3	175	17,744	9.1	242	0	0.0	0	129,930	7.5	185	4299	134229
LUX	2,433	8.1	196	873	7.6	203	0	0.0	0	3,306	8.0	198	344	3650
NL	92,456	7.4	177	4,819	6.7	184	0	0.0	0	97,275	7.3	178	4628	101903
P	22,213	7.1	172	3,130	8.5	228	0	0.0	0	25,343	7.3	179	8000	33343
SP	53,267	7.7	181	35,826	8.3	222	0	0.0	0	89,093	7.9	197	13388	102481
SW	32,802	7.9	190	571	10.6	280	0	0.0	0	33,373	8.0	192	2162	35535
UK	284,389	7.9	191	24,137	9.6	257	0	0.0	0	308,526	8.0	196	2350	310876

B1. SPECIFIC FUEL CONSUMPTION (L/100km) AND EMISSIONS OF CO2 (g/km) AVERAGED OVER ALL NEWLY REGISTERED PASSENGER CARS FOR EACH DIFFERENT FUEL-TYPE, FOR THE EU AND EACH MEMBER STATE

1998 - JAMA MEMBERS

1998	Petrol			Diesel			Other			All			CO2	Total
	Number	Fuel Efficiency	CO2	Number	Fuel Efficiency	CO2	Number	Fuel Efficiency	CO2	Number	Fuel Efficiency	CO2	unknown	Number
EU-15	1,359,947	7.6	184	219,186	8.2	221	354	8.0	192	1,579,487	7.7	189	87329	1666816
A	35,182	7.5	181	18,471	7.1	191	0	0.0	0	53,653	7.4	184	2220	55873
B	39,470	7.6	181	17,893	6.8	182	15	10.3	245	57,378	7.4	182	16178	73556
DK	38,366	7.4	178	1,629	8.3	222	0	0.0	0	39,995	7.5	180	5986	45981
F	61,392	7.8	186	36,316	8.4	224	339	7.9	190	98,047	8.0	200	765	98812
FIN	33,341	7.5	185	2,692	7.4	197	0	0.0	0	36,033	7.5	186	762	36795
GER	423,097	7.7	186	22,870	9.3	250	0	0.0	0	445,967	7.8	189	187	446154
GR	36,220	7.3	175	651	6.6	176	0	0.0	0	36,871	7.3	175	12595	49466
IRE	39,024	7.2	174	4,480	7.7	205	0	0.0	0	43,504	7.3	177	5765	49269
IT	114,278	7.4	179	32,495	8.9	238	0	0.0	0	146,773	7.7	192	4757	151530
LUX	2,556	8.0	192	1,170	8.2	219	0	0.0	0	3,726	8.0	201	442	4168
NL	98,348	7.3	176	9,782	7.0	190	0	0.0	0	108,130	7.3	178	3547	111677
P	26,915	7.2	174	8,435	8.0	222	0	0.0	0	35,350	7.4	185	6314	41664
SP	63,211	7.4	180	35,217	7.9	211	0	0.0	0	98,428	7.6	191	24936	123364
SW	37,149	8.0	191	1,159	8.9	240	0	0.0	0	38,308	8.0	192	1640	39948
UK	311,398	7.8	189	25,926	9.3	250	0	0.0	0	337,324	7.9	194	1235	338559

B1. SPECIFIC FUEL CONSUMPTION (L/100km) AND EMISSIONS OF CO2 (g/km) AVERAGED OVER ALL NEWLY REGISTERED PASSENGER CARS FOR EACH DIFFERENT FUEL-TYPE, FOR THE EU AND EACH MEMBER STATE

1999 - JAMA MEMBERS

1999	Petrol			Diesel			Other			All			CO2	Total
	Number	Fuel Efficiency	CO2	Number	Fuel Efficiency	CO2	Number	Fuel Efficiency	CO2	Number	Fuel Efficiency	CO2	unknown	Number
EU-15	1,379,723	7.5	181	255,165	8.2	221	1,093	8.1	200	1,635,981	7.6	187	80067	1716048
A	34,227	7.4	178	19,378	7.1	192	0	0.0	0	53,605	7.3	183	1898	55503
B	44,494	7.2	173	19,398	6.9	186	5	7.5	180	63,897	7.1	177	5537	69434
DK	29,209	7.2	174	2,474	7.4	215	0	0.0	0	31,683	7.2	178	11062	42745
F	75,069	7.4	179	39,349	8.3	223	880	8.3	205	115,298	7.8	194	3108	118406
FIN	32,204	7.4	182	2,563	7.7	206	0	0.0	0	34,767	7.4	184	601	35368
GER	372,179	7.7	185	24,397	8.6	234	0	0.0	0	396,576	7.7	188	10986	407562
GR	58,589	7.1	173	481	6.5	175	0	0.0	0	59,070	7.1	173	9186	68256
IRE	40,220	7.0	171	5,772	8.2	221	0	0.0	0	45,992	7.2	177	10982	56974
IT	131,940	7.2	173	40,809	8.6	232	0	0.0	0	172,749	7.5	187	616	173365
LUX	3,176	7.8	188	1,145	7.9	213	0	0.0	0	4,321	7.8	195	277	4598
NL	104,338	7.3	176	12,590	6.7	181	208	7.5	179	117,136	7.2	176	2816	119952
P	32,756	7.1	172	9,230	9.0	238	0	0.0	0	41,986	7.5	187	5846	47832
SP	66,447	7.5	180	54,691	8.2	223	0	0.0	0	121,138	7.8	199	16168	137306
SW	42,906	7.9	189	1,042	9.0	245	0	0.0	0	43,948	7.9	191	596	44544
UK	311,969	7.7	186	21,846	9.5	255	0	0.0	0	333,815	7.8	190	388	334203

B2. THE DISTRIBUTION OF CO2 EMISSIONS (g/km)
IN THE NEW PASSENGER CAR FLEET
FOR EACH DIFFERENT FUEL TYPE, FOR THE EU

1995-1999 - JAMA MEMBERS

CO2			<60	60-80	81-100	101-120	121-140	141-160	161-180	181-200	201-250	251-300	301-350	351-450	450<	Total
1995	Petrol	Number	0	0	0	0	22035	161007	225633	345548	199747	51936	3629	3196	407	1013138
		CO2	0	0	0	0	138	153	173	189	225	267	327	369	483	191
	Diesel	Number	0	0	0	0	20	0	50118	10379	4609	17115	25651	9685	0	117577
		CO2	0	0	0	0	137	0	170	192	238	276	325	359	0	239
	Other	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		CO2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	All	Number	0	0	0	0	22055	161007	275751	355927	204356	69051	29280	12881	407	1130715
		CO2	0	0	0	0	138	153	172	189	225	269	325	361	483	196
1996	Petrol	Number	0	0	0	0	27949	164922	362093	280939	209651	48532	4219	1865	1395	1101565
		CO2	0	0	0	0	133	153	170	188	222	272	324	366	526	187
	Diesel	Number	0	0	0	0	0	4748	54677	10948	10783	16376	30649	10853	59	139093
		CO2	0	0	0	0	0	148	170	186	240	275	324	358	1440	238
	Other	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		CO2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	All	Number	0	0	0	0	27949	169670	416770	291887	220434	64908	34868	12718	1454	1240658
		CO2	0	0	0	0	133	153	170	188	223	272	324	359	563	193
1997	Petrol	Number	0	0	0	0	40827	202448	448349	258645	269861	27923	7344	515	1002	1256914
		CO2	0	0	0	0	132	153	170	188	220	270	317	389	481	184
	Diesel	Number	0	0	0	0	0	16003	44674	24107	23943	47437	11256	1316	0	168736
		CO2	0	0	0	0	0	155	170	184	234	279	327	371	0	222
	Other	Number	0	0	0	0	0	0	0	0	95	0	0	0	0	95
		CO2	0	0	0	0	0	0	0	0	241	0	0	0	0	241
	All	Number	0	0	0	0	40827	218451	493023	282752	293899	75360	18600	1831	1002	1425745
		CO2	0	0	0	0	132	153	170	187	221	275	323	376	481	188
1998	Petrol	Number	0	0	0	0	57083	197702	492486	267905	304948	29672	8285	695	1171	1359947
		CO2	0	0	0	0	133	151	170	188	220	267	316	399	552	184
	Diesel	Number	0	0	0	0	6005	19811	64222	19940	32371	48304	27267	580	686	219186
		CO2	0	0	0	0	137	151	172	184	226	282	320	359	1209	224
	Other	Number	0	0	0	0	0	0	0	291	63	0	0	0	0	354
		CO2	0	0	0	0	0	0	0	184	234	0	0	0	0	192
	All	Number	0	0	0	0	63088	217513	556708	288136	337382	77976	35552	1275	1857	1579487
		CO2	0	0	0	0	133	151	170	188	220	276	319	381	794	190
1999	Petrol	Number	0	0	0	5544	165242	182406	396529	274980	327196	23142	3828	856	0	1379723
		CO2	0	0	0	120	135	152	170	189	219	270	321	393	0	181
	Diesel	Number	0	0	0	0	13808	27718	61449	19536	38483	61715	32456	0	0	255165
		CO2	0	0	0	0	135	153	172	183	223	279	319	0	0	221
	Other	Number	0	0	0	0	0	0	221	304	568	0	0	0	0	1093
		CO2	0	0	0	0	0	0	179	188	215	0	0	0	0	200
	All	Number	0	0	0	5544	179050	210124	458199	294820	366247	84857	36284	856	0	1635981
		CO2	0	0	0	120	135	152	170	189	219	276	319	393	0	187

B3. (3a) THE DISTRIBUTION OF AVERAGED MASS (KG)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE

1995 - JAMA MEMBERS

1995	Petrol		Diesel		Other		All		inc. Mass unknown	
	Mass	CO2	Mass	CO2	Mass	CO2	Mass	CO2	Mass u.k.	All
EU-15	1,032	188	1,295	204	0	0	1,089	191	215	193
A	1,014	181	1,212	181	0	0	1,071	181	217	184
B	1,069	185	1,189	168	0	0	1,071	184	206	187
DK	1,056	189	1,461	236	0	0	1,095	194	219	196
F	1,021	187	1,391	222	0	0	1,155	199	201	200
FIN	1,089	186	1,327	198	0	0	1,095	186	191	187
GER	1,068	192	1,655	282	0	0	1,102	198	226	198
GR	988	184	1,073	176	0	0	988	184	223	187
IRE	1,025	177	1,277	188	0	0	1,053	178	197	181
IT	1,019	187	1,761	304	0	0	1,097	199	201	199
LUX	1,074	198	1,365	215	0	0	1,132	201	208	202
NL	1,009	182	1,208	180	0	0	1,016	182	195	183
P	1,001	176	1,247	179	0	0	1,003	176	241	182
SP	1,044	187	1,174	172	0	0	1,060	185	245	194
SW	1,145	201	1,806	287	0	0	1,152	202	206	202
UK	1,085	194	1,640	268	0	0	1,122	198	262	202

B3. (3a) THE DISTRIBUTION OF AVERAGED MASS (KG)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE

1996 - JAMA MEMBERS

1996	Petrol		Diesel		Other		All		inc. Mass unknown	
	Mass	CO2	Mass	CO2	Mass	CO2	Mass	CO2	Mass u.k.	All
EU-15	1,080	187	1,479	233	0	0	1,121	191	221	193
A	1,056	185	1,307	199	0	0	1,117	189	211	189
B	1,033	176	1,213	178	0	0	1,089	177	182	178
DK	1,065	179	1,202	170	0	0	1,066	178	197	180
F	1,023	182	1,376	213	0	0	1,146	192	273	193
FIN	1,117	184	1,371	202	0	0	1,131	185	202	186
GER	1,093	188	1,708	282	0	0	1,124	192	237	193
GR	1,015	180	1,100	184	0	0	1,015	180	177	180
IRE	1,040	172	1,227	178	0	0	1,057	172	216	177
IT	1,030	183	1,666	278	0	0	1,133	198	218	199
LUX	1,087	189	1,299	198	0	0	1,124	191	206	192
NL	1,032	178	1,236	181	0	0	1,041	178	210	179
P	1,041	169	1,243	170	0	0	1,042	169	283	181
SP	1,058	183	1,219	174	0	0	1,090	181	272	197
SW	1,163	194	1,920	304	0	0	1,176	196	204	196
UK	1,118	196	1,744	286	0	0	1,165	203	199	203

B3. (3a) THE DISTRIBUTION OF AVERAGED MASS (KG)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE

1997 - JAMA MEMBERS

1997	Petrol		Diesel		Other		All		inc. Mass unknown	
	Mass	CO2	Mass	CO2	Mass	CO2	Mass	CO2	Mass u.k.	All
EU-15	1,094	184	1,447	216	1,365	241	1,131	187	236	188
A	1,088	183	1,318	195	0	0	1,153	186	185	186
B	1,078	178	1,198	172	1,539	245	1,113	176	196	177
DK	1,092	179	1,246	177	0	0	1,093	179	198	181
F	1,073	188	1,413	215	1,357	241	1,192	198	153	197
FIN	1,142	184	1,370	204	0	0	1,156	186	202	186
GER	1,123	185	1,648	246	0	0	1,146	188	268	188
GR	997	174	1,276	181	0	0	998	174	172	174
IRE	1,033	172	1,268	181	0	0	1,052	173	256	176
IT	1,023	175	1,584	243	0	0	1,101	185	187	185
LUX	1,152	195	1,312	192	0	0	1,190	195	262	198
NL	1,055	177	1,256	177	0	0	1,064	177	213	178
P	1,055	171	1,234	166	0	0	1,064	170	252	179
SP	1,071	178	1,230	172	0	0	1,111	176	260	197
SW	1,163	190	1,837	280	0	0	1,174	192	225	192
UK	1,108	190	1,678	257	0	0	1,152	196	242	196

B3. (3a) THE DISTRIBUTION OF AVERAGED MASS (KG)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE

1998 - JAMA MEMBERS

1998	Petrol		Diesel		Other		All		inc. Mass unknown	
	Mass	CO2	Mass	CO2	Mass	CO2	Mass	CO2	Mass u.k.	All
EU-15	1,121	184	1,510	218	1,231	192	1,170	188	223	189
A	1,116	181	1,398	200	0	0	1,202	187	157	184
B	1,075	181	1,263	179	1,539	245	1,136	194	194	182
DK	1,130	177	1,368	172	0	0	1,137	177	196	180
F	1,072	186	1,505	224	1,217	190	1,229	199	237	200
FIN	1,179	185	1,426	196	0	0	1,196	185	230	186
GER	1,157	186	1,772	250	0	0	1,188	189	287	189
GR	1,042	175	1,356	176	0	0	1,047	175	179	175
IRE	1,059	173	1,358	183	0	0	1,084	173	239	177
IT	1,083	179	1,616	239	0	0	1,200	192	142	192
LUX	1,172	192	1,559	220	0	0	1,294	201	197	201
NL	1,084	176	1,339	178	0	0	1,104	176	261	178
P	1,067	170	1,242	167	0	0	1,080	170	230	185
SP	1,089	176	1,262	179	0	0	1,137	177	253	191
SW	1,197	191	1,778	240	0	0	1,215	192	199	192
UK	1,124	189	1,693	249	0	0	1,167	194	298	194

B3. (3a) THE DISTRIBUTION OF AVERAGED MASS (KG)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE

1999 - JAMA MEMBERS

1999	Petrol		Diesel		Other		All		inc. Mass unknown	
	Mass	CO2	Mass	CO2	Mass	CO2	Mass	CO2	Mass u.k.	All
EU-15	1,123	181	1,507	214	1,284	200	1,173	185	234	187
A	1,116	178	1,446	200	0	0	1,224	185	141	183
B	1,104	173	1,327	183	1,135	180	1,168	176	192	177
DK	1,115	172	1,348	161	0	0	1,124	172	198	178
F	1,066	179	1,505	222	1,329	205	1,214	194	229	194
FIN	1,175	182	1,443	194	0	0	1,193	183	261	184
GER	1,167	185	1,715	234	0	0	1,200	188	201	188
GR	1,070	173	1,348	175	0	0	1,072	173	186	173
IRE	1,064	171	1,428	189	0	0	1,094	172	245	177
IT	1,080	173	1,580	233	0	0	1,198	187	164	187
LUX	1,165	188	1,532	213	0	0	1,261	195	244	195
NL	1,097	176	1,349	170	1,098	179	1,121	175	262	176
P	1,090	171	1,246	163	0	0	1,099	171	249	187
SP	1,080	175	1,254	176	0	0	1,134	175	252	199
SW	1,218	189	1,799	245	0	0	1,232	191	201	191
UK	1,125	186	1,757	254	0	0	1,164	190	247	190

B3. (3b) THE DISTRIBUTION OF POWER (KW) OF NEW PASSENGER CARS FOR EACH FUEL TYPE FOR THE EU AND EACH MEMBER STATE

1995 - JAMA MEMBERS

1995	Petrol		Diesel		Other		All	
	Power	CO2	Power	CO2	Power	CO2	Power	CO2
EU-15	70	191	66	239	0	0	70	196
A	66	190	59	204	0	0	65	193
B	63	183	56	187	0	0	61	184
DK	72	186	54	212	0	0	72	187
F	67	187	64	222	0	0	66	200
FIN	75	187	59	197	0	0	74	187
GER	70	193	75	282	0	0	70	198
GR	62	187	50	176	0	0	62	204
IRE	64	179	58	197	0	0	64	181
IT	71	189	72	302	0	0	71	199
LUX	76	198	61	216	0	0	73	202
NL	68	183	56	184	0	0	67	183
P	64	178	71	269	0	0	65	182
SP	73	190	55	209	0	0	70	194
SW	81	201	71	287	0	0	80	202
UK	74	195	73	277	0	0	74	202

1996 - JAMA MEMBERS

1996	Petrol		Diesel		Other		All	
	Power	CO2	Power	CO2	Power	CO2	Power	CO2
EU-15	69	187	68	235	0	0	69	192
A	64	186	62	200	0	0	63	189
B	63	177	56	178	0	0	61	178
DK	67	180	56	187	0	0	67	180
F	67	182	65	215	0	0	66	193
FIN	74	185	64	204	0	0	73	186
GER	67	188	78	282	0	0	68	193
GR	64	180	51	184	0	0	64	180
IRE	63	174	60	202	0	0	63	176
IT	68	184	74	278	0	0	69	199
LUX	74	190	61	197	0	0	71	192
NL	67	179	59	188	0	0	66	179
P	64	170	70	288	0	0	65	181
SP	73	185	57	192	0	0	69	187
SW	79	194	82	304	0	0	79	196
UK	75	196	75	275	0	0	75	203

1997 - JAMA MEMBERS

1997	Petrol		Diesel		Other		All	
	Power	CO2	Power	CO2	Power	CO2	Power	CO2
EU-15	70	184	70	222	95	241	70	188
A	67	183	64	194	0	0	66	186
B	66	179	57	173	110	245	63	177
DK	68	180	63	235	0	0	68	181
F	71	188	68	213	94	241	70	197
FIN	73	184	64	204	0	0	73	186
GER	69	185	78	246	0	0	69	188
GR	62	174	64	181	0	0	62	174
IRE	61	173	64	199	0	0	62	175
IT	64	175	74	242	0	0	65	185
LUX	78	196	63	194	0	0	75	195
NL	67	177	61	184	0	0	67	178
P	66	172	73	228	0	0	67	179
SP	75	181	70	222	0	0	73	197
SW	79	190	89	280	0	0	79	192
UK	75	191	77	257	0	0	75	196

1998 - JAMA MEMBERS

1998	Petrol		Diesel		Other		All	
	Power	CO2	Power	CO2	Power	CO2	Power	CO2
EU-15	72	184	72	221	74	192	72	189
A	68	181	66	191	0	0	67	184
B	66	181	62	182	110	245	65	194
DK	71	178	73	222	0	0	72	180
F	71	186	73	224	73	190	72	200
FIN	74	185	67	197	0	0	74	186
GER	72	186	83	250	0	0	72	189
GR	63	175	66	176	0	0	63	175
IRE	64	174	68	200	0	0	64	176
IT	65	179	75	238	0	0	67	192
LUX	82	192	76	219	0	0	80	201
NL	68	176	66	190	0	0	68	178
P	67	174	70	222	0	0	68	185
SP	75	180	67	211	0	0	72	191
SW	80	191	83	240	0	0	80	192
UK	76	189	81	250	0	0	76	194

1999 - JAMA MEMBERS

1999	Petrol		Diesel		Other		All	
	Power	CO2	Power	CO2	Power	CO2	Power	CO2
EU-15	71	181	73	221	83	200	71	187
A	68	178	69	192	0	0	69	183
B	66	173	64	186	66	180	65	177
DK	69	174	72	215	0	0	69	178
F	69	179	74	223	88	205	71	194
FIN	73	182	70	206	0	0	73	184
GER	72	185	82	234	0	0	72	188
GR	63	173	65	175	0	0	63	173
IRE	62	171	81	220	0	0	64	177
IT	64	173	73	232	0	0	66	187
LUX	81	188	74	213	0	0	79	195
NL	67	176	68	181	66	179	68	176
P	65	172	68	238	0	0	66	187
SP	73	180	69	223	0	0	71	199
SW	82	189	84	245	0	0	82	191
UK	76	186	86	255	0	0	77	190

**B3. (3c) THE DISTRIBUTION OF ENGINE CAPACITY (CM3)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE**

1995 - JAMA MEMBERS

1995	Petrol		Diesel		Other		All	
	Capacity	CO2	Capacity	CO2	Capacity	CO2	Capacity	CO2
EU-15	1543	191	2298	239	0	0	1621	196
A	1510	190	2064	204	0	0	1640	193
B	1467	183	2014	187	0	0	1636	184
DK	1536	186	2165	219	0	0	1551	187
F	1465	187	2220	222	0	0	1733	200
FIN	1565	187	2100	197	0	0	1578	187
GER	1564	193	2511	282	0	0	1619	198
GR	1392	187	1998	176	0	0	1395	187
IRE	1427	179	2075	197	0	0	1502	181
IT	1495	189	2513	302	0	0	1590	199
LUX	1633	198	2168	216	0	0	1745	202
NL	1493	183	2016	184	0	0	1511	183
P	1380	178	2551	269	0	0	1431	182
SP	1564	190	2090	209	0	0	1658	194
SW	1716	201	2610	287	0	0	1724	202
UK	1594	195	2581	277	0	0	1676	202

1996 - JAMA MEMBERS

1996	Petrol		Diesel		Other	
	Capacity	CO2	Capacity	CO2	Capacity	CO2
EU-15	1535	187	2296	238	0	0
A	1484	186	2070	200	0	0
B	1470	177	1972	178	0	0
DK	1507	180	2137	202	0	0
F	1454	182	2220	215	0	0
FIN	1574	185	2140	204	0	0
GER	1546	188	2529	282	0	0
GR	1407	180	2021	184	0	0
IRE	1389	174	2076	203	0	0
IT	1457	184	2433	278	0	0
LUX	1597	190	2073	197	0	0
NL	1486	179	2036	188	0	0
P	1377	170	2335	288	0	0
SP	1553	186	2165	224	0	0
SW	1706	194	2692	304	0	0
UK	1614	196	2568	275	0	0

1997 - JAMA MEMBERS

1997	Petrol		Diesel		Other		All	
	Capacity	CO2	Capacity	CO2	Capacity	CO2	Capacity	CO2
EU-15	1545	184	2285	222	2187	241	1632	188
A	1529	183	2069	194	0	0	1683	186
B	1505	179	1974	173	2457	245	1638	177
DK	1537	180	2355	240	0	0	1552	181
F	1541	188	2244	213	2175	241	1791	197
FIN	1587	184	2135	204	0	0	1625	186
GER	1568	185	2460	246	0	0	1606	188
GR	1364	174	2016	180	0	0	1368	174
IRE	1394	173	2096	204	0	0	1465	176
IT	1398	175	2339	242	0	0	1526	185
LUX	1669	196	2067	194	0	0	1763	195
NL	1498	177	2019	184	0	0	1524	178
P	1401	172	2303	228	0	0	1513	179
SP	1567	181	2288	222	0	0	1857	197
SW	1708	190	2618	280	0	0	1724	192
UK	1611	191	2568	257	0	0	1685	196

1998 - JAMA MEMBERS

1998	Petrol		Diesel		Other	
	Capacity	CO2	Capacity	CO2	Capacity	CO2
EU-15	1558	184	2288	221	1907	192
A	1538	181	2094	191	0	0
B	1508	181	2019	182	2457	245
DK	1577	178	2270	222	0	0
F	1520	186	2317	224	1883	190
FIN	1596	185	2114	197	0	0
GER	1601	186	2528	250	0	0
GR	1393	175	1988	176	0	0
IRE	1440	174	2124	204	0	0
IT	1413	179	2363	238	0	0
LUX	1681	192	2319	219	0	0
NL	1506	176	2091	190	0	0
P	1408	174	2235	222	0	0
SP	1554	180	2177	211	0	0
SW	1718	191	2460	240	0	0
UK	1606	189	2555	250	0	0

1999 - JAMA MEMBERS

1999	Petrol		Diesel		Other		All	
	Capacity	CO2	Capacity	CO2	Capacity	CO2	Capacity	CO2
EU-15	1511	181	2296	221	1797	200	1634	187
A	1494	178	2143	192	0	0	1729	183
B	1438	173	2042	186	1574	180	1621	177
DK	1527	174	2200	215	0	0	1580	178
F	1451	179	2325	223	1893	205	1753	194
FIN	1561	182	2176	206	0	0	1607	184
GER	1573	185	2458	234	0	0	1628	188
GR	1355	173	1979	175	0	0	1360	173
IRE	1371	171	2331	221	0	0	1492	177
IT	1358	173	2304	232	0	0	1581	187
LUX	1598	188	2277	213	0	0	1778	195
NL	1473	176	2085	181	1396	179	1539	176
P	1357	172	2253	238	0	0	1554	187
SP	1520	180	2277	223	0	0	1862	199
SW	1729	189	2487	245	0	0	1747	191
UK	1566	186	2612	255	0	0	1635	190

B4. EU LIST OF ALL M1 VEHICLES (BY MODEL) COVERED BY THE COMMITMENT (1995-1999), AND THEIR MEMBER STATE AVAILABILITY

1995 JAMA MEMBERS

Member State Model		Member State Market Availability (MS Initials)													
Daihatsu Applause	Petrol	DK	UK												
Daihatsu Applause	unleaded	A	B	GER	IRE	NL	SP								
Daihatsu Charade	Diesel	A	NL												
Daihatsu Charade	Petrol	A	B	DK	IT	LUX	SP	SW							
Daihatsu Charade	super unleaded 95 RON	FR													
Daihatsu Charade	unleaded	A	B	DK	GER	GER	IRE	LUX	NL	UK					
Daihatsu Cuore	Petrol	GER	GR	NL											
Daihatsu Cuore	unleaded	A	GER	GR	NL										
Daihatsu Domino	Petrol	IRE	LUX												
Daihatsu Domino	super unleaded 95 RON	B	FR												
Daihatsu Feroza	Petrol	SP													
Daihatsu Feroza	Petrol	A	B	FR	FR	GR	LUX	NL	P	SP					
Daihatsu Feroza	super unleaded 95 RON	FR													
Daihatsu Feroza	unleaded	GER	GR	IT	LUX	NL									
Daihatsu Fourtrak	Diesel	IRE	UK												
Daihatsu Fourtrak	Petrol	UK													
Daihatsu Mira	unleaded	UK													
Daihatsu Rocky	Diesel	A	B	DK	FR	GER	LUX	NL	P	SP					
Daihatsu Rocky	Petrol	B	LUX	SP	GR	IRE	UK								
Daihatsu Sportrak	unleaded	UK													
Daihatsu Unspec.	Petrol	IRE	IT	NL											
Ebro Patrol	Diesel	FR													
Honda Accord	Petrol	A	B	DK	F	FR	GER	GER	IRE	IT	LUX	NL	P	SW	UK
Honda Accord	super unleaded 95 RON	A	B	DK	F	FR	FR	GER	IRE	IT	LUX	NL	P	SP	SW	UK
Honda Accord	unleaded	LUX	UK												
Honda Civic	Flexible	B													
Honda Civic	Petrol	A	B	DK	F	FR	GR	IRE	IT	LUX	NL	P	SP	SW	UK
Honda Civic	super unleaded 95 RON	A	DK	F	FR	GER	GR	IRE	IT	LUX	NL	P	SP	SW	
Honda Civic	unleaded	A	B	DK	F	GER	GR	IRE	IT	LUX	NL	P	SP	SW	UK
Honda Concerto	Diesel	FR													
Honda Concerto	Petrol	A	B	FR	IT	LUX	SP	SW							
Honda Concerto	super unleaded 95 RON	A	B	FR	GER	IT	LUX	NL	SP	SW					
Honda Concerto	unleaded	A	GER	IT	NL	SP	UK	UK							
Honda CRX	Petrol	A	B	GR	NL	UK									
Honda CRX	super unleaded 95 RON	A	FR	GER	IT	LUX	NL	NL	P	SP	SW				
Honda CRX	unleaded	P	UK												
Honda Integra	Petrol	LUX													
Honda Legend	super unleaded 95 RON	A	B	DK	FR	GER	IRE	IT	LUX	NL	P	SP	SW		
Honda Legend	unleaded	UK													
Honda NSX	super plus unleaded 98 RON	FR													
Honda NSX	super unleaded 95 RON	A	B	GER	IT	NL	UK								
Honda Prelude	Petrol	B	F	GR	IRE	IT	LUX	NL							
Honda Prelude	super unleaded 95 RON	A	B	DK	F	FR	GER	IRE	IT	LUX	NL	SP	SW		
Honda Prelude	unleaded	UK													
Honda Shuttle	Petrol	F	FR												
Honda Shuttle	super unleaded 95 RON	A	B	DK	FR	GER	IT	LUX	NL	P	SW	UK			
Honda TN-Acty	Petrol	UK													
Infiniti Q45	Petrol	NL													
Isuzu Rodeo	Petrol	SP													
Isuzu Trooper	Diesel	GER	IRE	SP	UK										
Isuzu Trooper	Petrol	GER	SP	SW											
Isuzu Trooper	super unleaded 95 RON	UK													
Isuzu Trooper	Unspec.	GR													
Lexus GS 300	Petrol	A	B	DK	F	GER	IRE	IT	LUX	NL					
Lexus GS 300	super unleaded 95 RON	FR	UK												
Lexus LS 400	Petrol	A	B	DK	F	GER	IRE	IT	LUX	NL	SW				
Lexus LS 400	super unleaded 95 RON	A	FR	GR	UK										
Lexus SC 300	Petrol	B	GER												
Lexus Unspec.	Petrol	SP													
Maruti Udyog 800	Petrol	FR	IT	P											
Maruti Udyog 800	unleaded	SP													
Mazda 1000/1300	Unspec.	GR													
Mazda 121	Petrol	A	B	IRE	IT	NL	P	SP	UK						
Mazda 121	super unleaded 95 RON	FR													
Mazda 121	unleaded	A	DK	F	GER	GR	LUX	NL	SW						
Mazda 323	Diesel	A	B	GER	IRE	LUX									
Mazda 323	Flexible	B													
Mazda 323	Petrol	A	B	DK	F	FR	GER	GR	IRE	IT	NL	P	SP	SW	UK

B4. EU LIST OF ALL M1 VEHICLES (BY MODEL) COVERED BY THE COMMITMENT (1995-1999), AND THEIR MEMBER STATE AVAILABILITY

1996 JAMA MEMBERS

Member State Model	Fuel type	Member State Market Availability (MS Initials)													
Daihatsu Applause	Unleaded	A	B	GER	NL	SP	UK								
Daihatsu Applause	Petrol	DK	LUX												
Daihatsu Charade	Super unleaded 95 RON	FR	UK												
Daihatsu Charade	Unleaded	A	B	GER	IRE	LUX	NL	UK							
Daihatsu Charade	Petrol	A	B	GER	IT	LUX	SP								
Daihatsu Cuore	Unleaded	A	GER	NL	P										
Daihatsu Cuore	Petrol	GR	NL												
Daihatsu Domino	Super unleaded 95 RON	FR													
Daihatsu Domino	Petrol	B	LUX												
Daihatsu Feroza	Petrol	SP													
Daihatsu Feroza	Petrol	A	FR	GER	P	SP									
Daihatsu Feroza	Super unleaded 95 RON	FR													
Daihatsu Feroza	Unleaded	A	GER	IT	LUX	NL									
Daihatsu Feroza	Petrol	A	B	GR	NL										
Daihatsu Fourtrak	Diesel	IRE	UK												
Daihatsu Fourtrak	Diesel	IRE													
Daihatsu Gran Move	Petrol	B													
Daihatsu Mira	Unleaded	UK													
Daihatsu Move	Petrol	B													
Daihatsu Rocky	Diesel	A	DK	FR	GER	LUX	NL	P	SP						
Daihatsu Rocky	Diesel	A	B												
Daihatsu Sportrak	Petrol	UK													
Daihatsu Sportrak	Unleaded	UK													
Daihatsu Sportrak	Petrol	IRE													
Daihatsu Unspec.	Unspec.	A	B	IRE	IT										
Daihatsu Valera	Petrol	NL													
Ebro Patrol	Diesel	FR													
Honda Accord	Diesel	A	B	FR	GER	IT	LUX	NL	SP	UK					
Honda Accord	Super unleaded 95 RON	A	B	DK	F	FR	GER	GR	IRE	IT	LUX	NL	P	SP	SW	UK
Honda Accord	Unleaded	B	DK	F	GER	LUX	NL	SP							
Honda Civic	Petrol	FR													
Honda Civic	Super unleaded 95 RON	A	DK	F	FR	GER	GR	IRE	IT	LUX	NL	P	SP	SW	UK
Honda Civic	Unleaded	A	B	DK	F	GER	GR	IRE	IT	LUX	NL	P	SP	SW	UK
Honda Civic	Unleaded	A	B	DK	F	GR	IRE	IT	LUX	NL	P	SW			
Honda Concerto	Diesel	FR													
Honda Concerto	Super unleaded 95 RON	A	FR	GER											
Honda Concerto	Unleaded	GER	SP												
Honda Concerto	Unspec.	B	IT												
Honda CRX	Super unleaded 95 RON	A	FR	GER	IT	LUX	NL	P	SP						
Honda CRX	Unleaded	UK													
Honda CRX	Unleaded	B	GR												
Honda Integra	Unleaded	SP													
Honda Legend	Super unleaded 95 RON	A	B	DK	FR	GER	IT	LUX	NL	SP	SW	UK			
Honda Legend	Unleaded	UK													
Honda Legend	Unleaded	P													
Honda NSX	Super plus unleaded 98 RON	FR													
Honda NSX	Super unleaded 95 RON	A	B	GER	IT	SP	UK								
Honda Odyssey	Unleaded	B													
Honda Passport	Diesel	SP													
Honda Prelude	Super unleaded 95 RON	A	B	DK	F	FR	GER	IRE	IT	LUX	NL	SP	SW		
Honda Prelude	Unleaded	UK													
Honda Prelude	Unleaded	A	B	GR											
Honda Shuttle	Super unleaded 95 RON	A	B	F	FR	GER	IRE	IT	LUX	NL	P	SW	UK		
Honda Shuttle	Unleaded	F	SP												
Isuzu Impulse	Petrol	SP													
Isuzu MU	Diesel	SP	GER	IRE	SP	UK									
Isuzu Trooper	Super unleaded 95 RON	IRE	UK												
Isuzu Trooper	Petrol	GER	IRE												
Isuzu Unspec.	Unspec.	DK	IRE												
Lexus GS 300	Super unleaded 95 RON	A	DK	F	FR	GER	IT	LUX	NL	UK					
Lexus GS 300	Petrol	B	IRE												
Lexus LS 400	Super unleaded 95 RON	A	F	FR	GER	IT	NL	SP	SW	UK					
Lexus LS 400	Petrol	B	DK	GER	IRE	LUX	SW	GER	B	GER	NL	IT			
Maruti Udyog 800	Super unleaded 95 RON	FR	IT	P											
Maruti Udyog 800	Unleaded	SP													
Maruti Udyog 800	Unspec.	FR	GER	GR											
Mazda 121	Diesel	A	B	FR	GER	IRE	LUX	NL	SP	UK					
Mazda 121	Petrol	A	FR	NL											

B4. EU LIST OF ALL M1 VEHICLES (BY MODEL) COVERED BY THE COMMITMENT (1995-1999), AND THEIR MEMBER STATE AVAILABILITY

1997 JAMA MEMBERS

Member State Model	Fuel type	Member State Market Availability (MS Initials)														
Daihatsu Applause	Unleaded	A	B	NL	NL	GER										
Daihatsu Applause	Petrol	SP														
Daihatsu Charade	Super unleaded 95 RON	FR	NL	UK												
Daihatsu Charade	Unleaded	A	B	GR	IRE	LUX	NL	P	GER	UK						
Daihatsu Charade	Petrol	A	B	IT	NL	SP										
Daihatsu Cuore	Super unleaded 95 RON	UK														
Daihatsu Cuore	Unleaded	A	GR	NL	P	GER										
Daihatsu Cuore	Petrol	GR														
Daihatsu Domino	Petrol	B	LUX													
Daihatsu Feroza	Petrol	FR	GER	LUX	P	SP										
Daihatsu Feroza	Super unleaded 95 RON	A	FR	IT	LUX	NL										
Daihatsu Feroza	Unleaded	GER														
Daihatsu Feroza	Petrol	A	B	GR												
Daihatsu Fourtrak	Diesel	IRE	UK													
Daihatsu Gran Move	Petrol	NL														
Daihatsu Gran Move	Super unleaded 95 RON	FR	UK													
Daihatsu Gran Move	Unleaded	A	B	GR	LUX	NL	P	GER								
Daihatsu Move	Super unleaded 95 RON	FR	UK													
Daihatsu Move	Unleaded	A	B	GR	IT	LUX	NL	P	GER							
Daihatsu Pyzar	Petrol	B														
Daihatsu Rocky	Diesel	A	DK	FR	GER	LUX	NL	P	SP							
Daihatsu Rocky	Diesel	A	B	IT												
Daihatsu Sportrak	Petrol	UK														
Daihatsu Sportrak	Super unleaded 95 RON	UK														
Daihatsu Sportrak	Unleaded	UK														
Daihatsu Sportrak	Petrol	IRE														
Daihatsu Terios	Petrol	P														
Daihatsu Terios	Super unleaded 95 RON	FR	UK													
Daihatsu Terios	Unleaded	A	B	F	GR	IRE	IT	LUX	NL	SW	GER					
Daihatsu Terios	Petrol	GR	B	GR	IRE											
Daihatsu Valera	Petrol	NL														
Honda Accord	Diesel	A	B	F	FR	GER	IT	LUX	NL	SP	UK					
Honda Accord	Super unleaded 95 RON	A	B	DK	F	FR	GER	GR	IRE	IT	LUX	NL	P	SP	SW	UK
Honda Accord	Unleaded	B	DK	LUX	NL											
Honda Civic	Diesel	A	FR	LUX	SP	UK										
Honda Civic	Petrol	FR														
Honda Civic	Super unleaded 95 RON	A	DK	F	FR	GER	GR	IRE	IT	LUX	NL	P	SP	SW	UK	
Honda Civic	Unleaded	A	B	DK	F	GR	IRE	IT	LUX	NL	P	SW	GER	SP	UK	
Honda Civic	Unleaded	A	B	DK	GER	GR	IRE	IT	LUX	NL	SP	SW				
Honda Concerto	Unleaded	SP														
Honda CR-V	Petrol	GER	P	SP												
Honda CR-V	Super unleaded 95 RON	A	B	DK	F	FR	GER	GR	IT	LUX	NL	SW	UK			
Honda CR-V	Unspec.	B	GR	IRE												
Honda CRX	Super unleaded 95 RON	A	FR	GER	IT	LUX	NL	P	SP							
Honda CRX	Unleaded	UK														
Honda CRX	Unleaded	A	B													
Honda Integra	Unleaded	IRE														
Honda Jazz	Unleaded	SP														
Honda Legend	Super unleaded 95 RON	A	B	DK	F	FR	GER	IT	LUX	NL	SP	SW	UK			
Honda Legend	Unleaded	IRE	P													
Honda NSX	Super unleaded 95 RON	B	FR	GER	IT	P	SP	UK								
Honda NSX	Unleaded	LUX														
Honda Odyssey	Unleaded	SP														
Honda Passport	Unleaded	LUX														
Honda Prelude	Super unleaded 95 RON	A	DK	F	FR	GER	IRE	IT	LUX	NL	P	SP	SW	UK		
Honda Prelude	Unleaded	UK														
Honda Prelude	Unleaded	A	B	DK	GR	IRE	IT	NL	SW							
Honda Shuttle	Petrol	DK														
Honda Shuttle	Super unleaded 95 RON	A	B	DK	F	FR	GER	IRE	IT	LUX	NL	P	SW	UK		
Honda Shuttle	Unleaded	B														
Isuzu Rodeo	Petrol	SP														
Isuzu Trooper	Diesel	GER	IRE	SP	UK											
Isuzu Trooper	Petrol	SP														
Isuzu Trooper	Super unleaded 95 RON	IRE	UK													
Isuzu Trooper	Petrol	GER	IRE													
Lexus ES 300	Petrol	B														
Lexus GS 300	Super unleaded 95 RON	A	DK	FR	GER	IRE	IT	LUX	NL	SP	UK					
Lexus GS 300	Petrol	B	IRE													

B4. EU LIST OF ALL M1 VEHICLES (BY MODEL) COVERED BY THE COMMITMENT (1995-1999), AND THEIR MEMBER STATE AVAILABILITY

1998 JAMA MEMBERS

Member State Model	Fuel type	Member State Market Availability (MS Initials)													
Daihatsu Applause	Unleaded	NL	GER												
Daihatsu Applause	Petrol	B	NL	SP											
Daihatsu Charade	Super unleaded 95 RON	FR	UK												
Daihatsu Charade	Unleaded	A	B	GR	GR	IRE	LUX	NL	P	GER					
Daihatsu Charade	Petrol	A	B	F	SP										
Daihatsu Cuore	Super unleaded 95 RON	GR	IT	NL	UK										
Daihatsu Cuore	Unleaded	A	NL	P	GER										
Daihatsu Cuore	Petrol	GR													
Daihatsu Domino	Petrol	B	GR	LUX											
Daihatsu Feroza	Petrol	SP													
Daihatsu Feroza	Super unleaded 95 RON	A	FR	IT	LUX	NL									
Daihatsu Feroza	Unleaded	GER													
Daihatsu Feroza	Petrol	A	B	GR											
Daihatsu Fourtrak	Diesel	IRE	UK												
Daihatsu Gran Move	Petrol	NL													
Daihatsu Gran Move	Super unleaded 95 RON	FR	UK												
Daihatsu Gran Move	Unleaded	A	B	F	GR	LUX	NL	P	GER						
Daihatsu Move	Super unleaded 95 RON	FR	UK												
Daihatsu Move	Unleaded	NL	GER												
Daihatsu Move	Petrol	A	B	GR	IT	LUX	P	SP							
Daihatsu Rocky	Diesel	A	B	DK	FR	GER	LUX	NL	P	SP					
Daihatsu Rocky	Diesel	A	B	IT											
Daihatsu Sirion	Super unleaded 95 RON	A	B	DK	GR	IT	NL	P	UK						
Daihatsu Sirion	Unleaded	F	NL	SW	GER										
Daihatsu Sportrak	Super unleaded 95 RON	UK													
Daihatsu Sportrak	Petrol	IRE													
Daihatsu Sportrak/Feroza	Petrol	B													
Daihatsu Terios	Petrol	P	SP												
Daihatsu Terios	Super unleaded 95 RON	UK													
Daihatsu Terios	Unleaded	A	B	F	GR	IRE	IT	LUX	NL	SW	GER				
Daihatsu Terios	Petrol	B													
Daihatsu Unspec.	Unspec.	DK	GR												
Daihatsu Valera	Petrol	NL													
Honda Accord	Diesel	A	B	FR	GER	IT	LUX	NL	SP	UK					
Honda Accord	Super plus unleaded 98 RON	A	IT	NL	P	SW	UK								
Honda Accord	Super unleaded 95 RON	A	B	DK	F	FR	GER	GR	IRE	IT	LUX	NL	P	SP	SW	UK
Honda Accord	Unleaded	B	DK	IT	LUX	NL									
Honda Civic	Diesel	A	FR	IT	LUX	SP	UK								
Honda Civic	Super unleaded 95 RON	A	B	DK	F	FR	GER	GR	IRE	IT	LUX	NL	P	SP	SW	UK
Honda Civic	Unleaded	A	B	DK	F	GR	IRE	IT	LUX	NL	P	SW	GER	UK		
Honda Civic	Unleaded	A	B	DK	GER	GR	IRE	IT	LUX	NL	P	SW				
Honda Concerto	Unleaded	SP													
Honda CR-V	Petrol	F	P	SP											
Honda CR-V	Super unleaded 95 RON	A	B	DK	F	FR	GER	GR	IT	LUX	NL	SW	UK		
Honda CR-V	Unleaded	B	IRE												
Honda CRX	Super unleaded 95 RON	A	FR	GER	IT	NL	SP								
Honda CRX	Unleaded	UK													
Honda HR-V	Petrol	P													
Honda HR-V	Unleaded	B	FR												
Honda Integra	Super plus unleaded 98 RON	UK													
Honda Integra	Super unleaded 95 RON	A	B	DK	F	FR	GER	IT	P	SW					
Honda Integra	Unleaded	A	IRE	LUX	NL	SP									
Honda Legend	Super unleaded 95 RON	A	B	DK	FR	GER	IT	LUX	NL	SP	SW	UK			
Honda Legend	Unleaded	IRE													
Honda Logo	Unleaded	GER													
Honda NSX	Super unleaded 95 RON	B	FR	GER	IT	NL	SP	UK							
Honda NSX	Unleaded	B	IT												
Honda Odyssey	Unleaded	SP													
Honda Prelude	Super unleaded 95 RON	A	DK	F	FR	GER	IRE	IT	LUX	NL	P	SP	SW	UK	
Honda Prelude	Unleaded	B	DK	GR	IRE	IT									
Honda Shuttle	Petrol	DK													
Honda Shuttle	Super unleaded 95 RON	A	B	DK	F	FR	GER	IT	LUX	NL	P	SW	UK		
Honda Shuttle	Unleaded	B	DK	IRE											
Isuzu Rodeo	Petrol	SP													
Isuzu Trooper	Diesel	IRE	IT	SP	UK										
Isuzu Trooper	Petrol	SP													
Isuzu Trooper	Super unleaded 95 RON	IRE	UK												
Isuzu Trooper	Unspec.	B													

B4. EU LIST OF ALL M1 VEHICLES (BY MODEL) COVERED BY THE COMMITMENT (1995-1999), AND THEIR MEMBER STATE AVAILABILITY

1999 JAMA MEMBERS

Member State Model	Fuel type	Member State Market Availability (MS Initials)													
Daihatsu Applause	Unleaded	B	GER	NL											
Daihatsu Charade	Super unleaded 95 RON	FR	UK												
Daihatsu Charade	Unleaded	A	B	GER	GR	LUX	NL	P							
Daihatsu Charade	Petrol	A	B	F											
Daihatsu Cuore	Super unleaded 95 RON	NL	UK												
Daihatsu Cuore	Unleaded	A	B	DK	GER	GR	IT	LUX	NL	P					
Daihatsu Cuore	Petrol	GR	IRE	NL											
Daihatsu Domino	Petrol	B	FR	LUX											
Daihatsu Feroza	Petrol	SP													
Daihatsu Feroza	Petrol	B	GR	IT	NL										
Daihatsu Fourtrak	Diesel	IRE	UK												
Daihatsu Gran Move	Petrol	NL													
Daihatsu Gran Move	Super unleaded 95 RON	FR	UK												
Daihatsu Gran Move	Unleaded	A	B	F	GER	GR	LUX	NL	P						
Daihatsu Gran Move	Petrol	B	GR												
Daihatsu Move	Super unleaded 95 RON	B	FR	GR	LUX	UK									
Daihatsu Move	Unleaded	GER	NL												
Daihatsu Move	Petrol	A	B	GR	IT	LUX	P								
Daihatsu Rocky	Diesel	A	B	DK	FR	GER	LUX	NL							
Daihatsu Rocky	Diesel	B													
Daihatsu Sirion	Super unleaded 95 RON	FR	LUX	P	UK										
Daihatsu Sirion	Unleaded	DK	F	GER	NL	SW									
Daihatsu Sirion	Petrol	A	B	DK	GR	IRE	IT								
Daihatsu Sportrak	Super unleaded 95 RON	UK													
Daihatsu Terios	Petrol	P	SP												
Daihatsu Terios	Super unleaded 95 RON	FR	UK												
Daihatsu Terios	Unleaded	A	B	DK	F	GER	GR	IRE	IT	LUX	NL	SP	SW		
Daihatsu Terios	Petrol	GER													
Daihatsu Unspec.	Unspec.	B	DK	IRE	NL										
Honda Accord	Diesel	A	B	FR	GER	IT	SP								
Honda Accord	Super plus unleaded 98 RON	A	B	DK	F	GER	IT	LUX	NL	P	SW	UK			
Honda Accord	Super unleaded 95 RON	A	B	DK	F	FR	GER	GR	IRE	IT	LUX	NL	P	SP	SW	UK
Honda Accord	Unleaded	B	GER	LUX	NL	SP									
Honda Civic	Diesel	A	B	FR	LUX	SP									
Honda Civic	Gas	B	FR	NL											
Honda Civic	Super unleaded 95 RON	A	B	DK	F	FR	GER	GR	IRE	IT	LUX	NL	P	SP	SW	UK
Honda Civic	Unleaded	A	B	DK	F	GER	GR	IRE	IT	LUX	NL	P	SW		
Honda Civic	Unleaded	A	B	DK	GER	GR	IRE	IT	LUX	P					
Honda CR-V	Petrol	P	SP												
Honda CR-V	Super unleaded 95 RON	A	B	DK	F	FR	GER	GR	IT	LUX	NL	SW	UK		
Honda CR-V	Unleaded	B	IRE												
Honda CRX	Super unleaded 95 RON	GER	SP												
Honda CRX	Unleaded	B													
Honda HR-V	Petrol	FR	P	SP											
Honda HR-V	Super unleaded 95 RON	A	B	F	FR	GER	GR	IT	LUX	NL	SW	UK			
Honda HR-V	Unleaded	B	DK	F	GR	IRE	IT	SW							
Honda Integra	Super plus unleaded 98 RON	UK													
Honda Integra	Super unleaded 95 RON	A	B	DK	F	FR	GER	IT	P						
Honda Integra	Unleaded	GR	IRE	LUX	NL										
Honda Legend	Super unleaded 95 RON	A	B	DK	FR	GER	IT	NL	NL	SP	SW	UK			
Honda Legend	Unleaded	B	IRE												
Honda Logo	Super unleaded 95 RON	A	B	DK	FR	GER	IT	LUX	NL	P	SP	SW			
Honda NSX	Super unleaded 95 RON	SP	UK												
Honda Prelude	Super unleaded 95 RON	A	B	DK	F	FR	GER	GR	IT	LUX	NL	P	SP	SW	UK
Honda Prelude	Unleaded	GR	IRE												
Honda S 2000	Super plus unleaded 98 RON	A	B	GER	GR	IT	LUX	NL	P	SW	UK				
Honda S 2000	Super unleaded 95 RON	FR													
Honda Shuttle	Petrol	DK													
Honda Shuttle	Super unleaded 95 RON	A	B	DK	F	FR	GER	IT	LUX	NL	P	SW	UK		
Honda Shuttle	Unleaded	B	DK	IRE											
Isuzu MU	Diesel	GER													
Isuzu Rodeo	Petrol	SP													
Isuzu Trooper	Diesel	B	F	FR	GER	IRE	IT	SP	SW	UK					
Isuzu Trooper	Petrol	SP													
Isuzu Trooper	Super unleaded 95 RON	F	FR	IRE	UK										
Isuzu Trooper	Petrol	IRE	IT												
Isuzu Unspec.	Unspec.	GR	IRE	IT											
Lexus GS 300	Super unleaded 95 RON	A	B	DK	F	FR	GR	IT	LUX	NL	P	SP	SW	UK	

Monitoring of KAMA's commitment on CO_2 Emission Reduction from Passenger Cars (1995-1999)

Final Version

11. 07. 2000

Joint Report
of the
Korea Automobile Manufacturers Association
and
the Commission Services

Joint Monitoring by European Commission and KAMA of Environmental Agreement on CO_2 Emission Reduction from Passenger Cars

ES SUMMARY OF PROGRESS IN DELIVERING THE AGREEMENT

E1 Trends in specific emissions of CO_2 (g/km) *(averaged over all newly registered passenger cars for the EU and for Member States: 1995-1999)*

Between 1995 and 1999 average specific CO_2 emissions of passenger cars sold by KAMA members on the EU market have decreased slightly from 197 g/km to 194 g/km, overwhelmingly driven by the trend of gasoline vehicles. Before 1997 there has been a small increase in specific average CO_2 emissions in the beginning of the reporting period (see Figure 1).

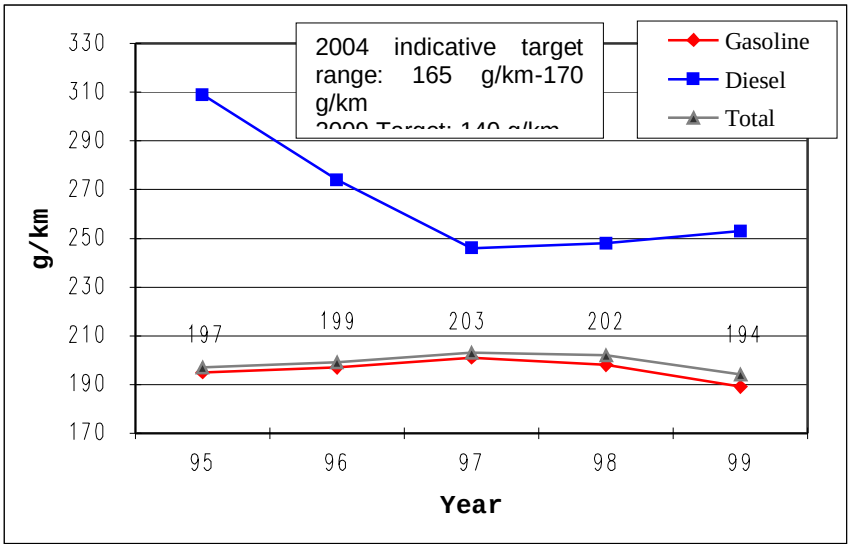


Figure 1. EU Trends of KAMA's fleet in specific average emissions of CO_2

E2 Trends in specific fuel consumption by fuel type (l/ 100 km) *(averaged over all newly registered passenger cars for the EU and for Member States: 1995-1999)*

Specific fuel consumption (litres/100 km) of gasoline engine and diesel engine is proportional to their CO_2 emissions - the lower the fuel consumption, the lower the emissions.

Gasoline passenger cars, which occupied most of KAMA's sales volumes in 1995-1999, consumed about 8.1 l/100 km in 1995, reaching their maximum consumption in 1997 (8.3 l/100 km), which decreased afterwards about 7.6 l/100 km in 1999. Diesel cars consumed an average of 11.6 l/100 km in 1995, achieving their lowest fuel consumption in 1997 (9.2 l/100 km) and increasing slightly afterwards (9.5 l/100 km) in 1999.

Total fuel consumption did not differ much from that of gasoline passenger cars due to the small sales volume of diesel cars (see Figure 2).

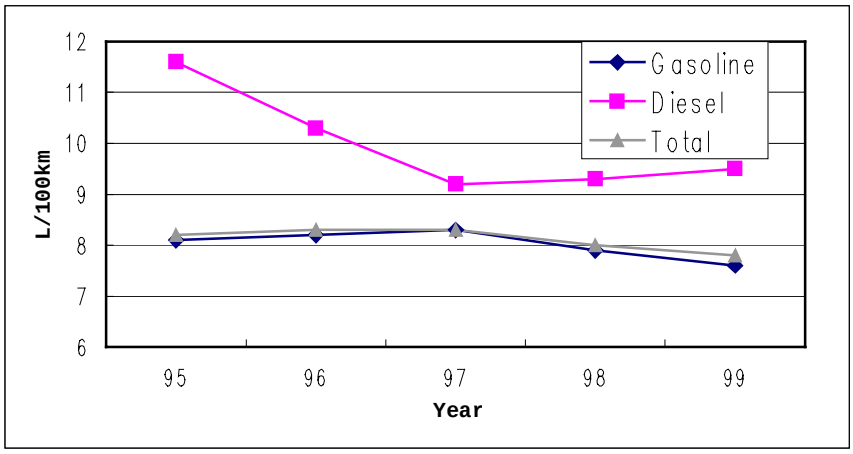


Figure 2. Trends of KAMA's fleet in specific average fuel consumption by fuel type

E3 Trends in physical fleet characteristics *(mass (kg), engine capacity (cm^3), engine power (kW)) averaged over all newly registered passenger cars in the EU (Optional) (1995-1999)*

General trends in physical characteristics show slight variations over the years, mainly due to a recently increasing small (<1000cc) gasoline car sales volume which resulted in an overall decrease in the average vehicle weight, engine capacity, and engine power.

E4 Technical developments introduced to reduce CO2 emissions *(including introduction of new technologies e.g. direct injection, low (less than 120 g/km) emission cars, and alternative concepts)*

There was no special new technology to reduce CO_2 introduced by KAMA members within the reporting period. Most developments have been made to reduce other emissions than CO_2 for meeting the low emission vehicle regulations such as EURO-III. Cars with low CO_2 emission technology like lean burn engine could not be launched to the European market although they were introduced in the Korean market, due to the stringent emission regulations. KAMA expects fuel-efficient lean burn cars (with de-NOx catalyst) to contribute to reducing CO_2 emission in the near future.

E5 Brief overall assessment on progress in relation to the target

Although Korean automobile manufacturers tried to make environment friendly automobiles, their main objective within the reporting period was to meet the standards for regulated emissions (hydrocarbon, carbon monoxide, and nitrogen oxides). In this respect it should be mentioned that the reporting covers a period before the Environmental Agreement with the Commission on CO_2 reduction from passenger cars was in place.

Due to the increased sales of small gasoline car sales on the European market, a small decrease in average specific CO_2 emissions was accomplished between 1995 and 1999, from 197 g/km to 194 g/km. To achieve the CO_2 emission targets agreed upon in the commitment by 2004 and 2009, Korean automobile manufacturers have begun to concentrate on fuel efficient car technologies.

1. MONITORING OF TECHNOLOGICAL DEVELOPMENTS AFFECTING THE AGREEMENT

1.1. Agreement Initiatives (optional)

1.1.1. R&D

Korean automobile manufacturers consider investments into R&D as a key element for meeting the CO_2 targets of 2004 and 2009.They have already started new R&D projects aiming at reducing passenger car's CO_2 emissions as well as other emissions (see description in section 1.2.1).

Section 1.2 also covers KAMA technological developments and research programme activities.

1.2. Technological developments

1.2.1. Description of technological developments and their fuel efficiency characteristics (new technologies, alternative concepts)

1.2.2. Availability of New Technologies in the EU and Member States

1.2.3. Availability of alternative concepts passenger cars in the EU (optional: in Member States)

1.2.4. Availability of low emission passenger cars (e.g. emitting less than 120 g/km)in the EU (optional: in Member States)

Description

Korean automobile manufacturers are running several programmes to investigate methods to reduce automobile CO_2 emissions, in place for several years now. The activities can be divided into 4 major activities: The Engine Programme, the Transmission Programme, the After-Treatment Improvement Programme, and the Car Weight Reduction Programme.

- **Engine Programme**

Korean automobile manufacturers are developing higher performance and lower CO_2 emission engines. There are two different engine concepts being under development. One is the HSDI (High Speed Direct Injection) Diesel engine with common rail system. This technology is one of the most promising alternatives, which has been investigated and already launched to the market by several automobile manufacturers in the world. HSDI will allow a 10% to 20% gain in fuel efficiency as compared to conventional gasoline cars. Another is the GDI (Gasoline Direct Injection) engine technology, which will allow a 10% higher fuel efficiency than conventional gasoline cars. One KAMA member company already completed the development of a GDI engine and is now trying to develop this engine further aiming at smaller cylinder capacities. KAMA expects those passenger cars with HSDI engines and GDI engines to be launched onto the EU market by the end of 2003.

- **Transmission Programme**

Transmission is one of the major factors affecting emissions. Its efficiency and speed are the main factors to be improved so as to reduce emissions. Korean automobile manufacturers have already reviewed the CVT (Continuously Variable Transmission) concept and are considering its application to passenger cars in the EU. CVT has already been applied to a small car (<1000cc) in Korea and showed its potential to reduce CO2 emissions compared to conventional automatic transmission vehicles (by 3% to 5%).

- **After Treatment Improvement Programme**

Korean automobile manufacturers are investigating several after-treatment systems to be used in the near future, e.g. 4-way catalyst and photo catalyst systems. These will be applied to different car classes such as small and/or medium size cars that will be launched onto the EU market from 2002 at the earliest.

- **Car Weight Reduction Programme**

This programme is one of the major measures to contribute to CO_2 emissions reduction. Korean automobile manufacturers are developing aluminium bodies and chassis for lightweight vehicles. This activity will consist of extrusion, three-dimensional bending, casting as well as tube hydro-forming. In the case of chassis, the suspension system is a promising area where new technology can be applied.

KAMA is convinced that these programmes will contribute to further reducing specific CO_2 emissions.

Availability of these new technologies

There have not been any innovative new CO_2 efficient technologies applied to decrease CO_2 emissions put on the EU market between 1995 and 1999.

No alternative concept passenger cars have been made available on the EU market between 1995 and 1999.
No passenger car offered by KAMA's members on the EU market between 1995 to 1999 met the criteria of emitting less than 120 g CO_2/km. In order to meet this requirement Korean manufacturers are currently developing a diesel passenger car with common rail technique, hybrid electric vehicles (HEV) and fuel cell cars.

A KAMA member company launched the mini-car model with manual transmission in the EU in 1997, with two models having engine capacities of less than 800cc and emitting 150 to 160 g/km.

1.3. Description of market trends in physical fleet characteristics *(mass (kg), engine capacity (cm^3), engine power (kW) in the EU and Member States)*

There has been no significant market trend with regard to the physical fleet characteristics within the reporting period, even though most parameters have decreased in general (see Section 2.4).

2. STATISTICAL MONITORING (1995-1999)

2.1. Listing of all (M1) newly registered passenger cars (model level) in the EU

See Table 4 in Annex[7].

2.2. Trends in specific emissions of CO_2 (g/km)*(averaged over all newly registered passenger cars by fuel type in the EU and Member States)*

[7] Table 4 presents a list of available M1 vehicles covered by the Commitment, not the 'grey areas' around M1 vehicles potentially registered as N1 in some Member States.

As shown in Figure 1 (Recall chapter E1), the average specific CO_2 emissions of passengers sold by KAMA's members on the EU market increased from 197 g/km in 1995 to 203 g/km in 1997. After 1997 it decreased to achieve 194 g/km in 1999. That means that there were only slight CO_2 emission reductions of about 1.5 % achieved by KAMA's members on the European market within the reporting period. Specific CO_2 emissions from gasoline automobiles, which occupied most sales volumes, reached a maximum in 1997 and decreased afterwards due to the small car (<1000cc) sales increase. Diesel cars with higher CO_2 emissions due to its heavier weight had the minimum CO_2 emission in 1997 and increased afterwards slightly.

Although the thermal efficiency of diesel engines is better than that of gasoline engines, their fuel efficiency was lower for diesel than for gasoline engines, due to the larger size of diesel vehicles. The overall trend in total fuel consumption shows a small decrease from 1997 onwards, mainly driven by the decrease in gasoline fuel consumption.

Trends in average CO_2 emissions do differ across Member States (see Annex).

2.3. Number of newly registered passenger cars (*by fuel type in the EU and Member States)*

The number of gasoline passenger cars sold steadily increased from 148,643 in 1995 to 379,666 in 1999. In particular, the sales volume share of small size engine cars has increased since 1998, which contributed to lower CO_2 emissions. The number of diesel passenger cars sold increased from 2,723 in 1995 to 34,286 in 1999 - although remaining small as compared to gasoline cars - which slightly affected the increase of CO_2 emissions (see Figure 3).

KAMA's market share of total EU passenger cars (gasoline + diesel) was 1.5 % in 1995, and 3.1 % in 1999.

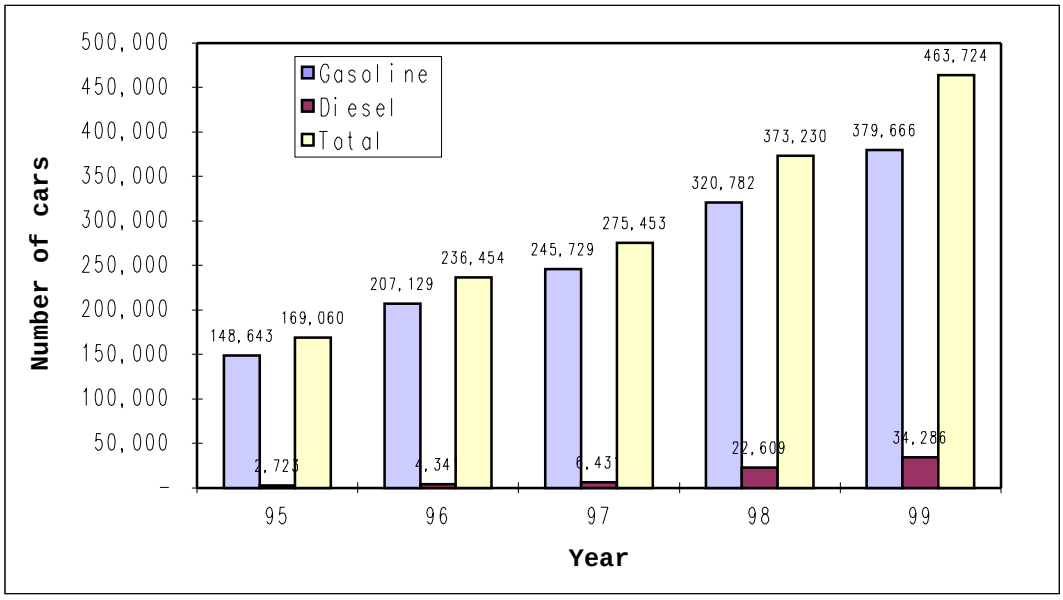


Figure 3. Number of newly registered passenger cars by KAMA's members

KAMA's fleet composition has changed over the reporting period. The share of cars emitting more than 181 g/km has decreased (or remained constant) for all the upper categories, with the exception of the 251-300 g/km category (+4%). The share of cars emitting between 161 g/km and 180 g/km has increased by 6.3% while the share of cars in the 181-200 g/km category has decreased by 16.5%. The share of cars in the lowest category 141-160 g/km has increased by 7.5% (see Figure 4).

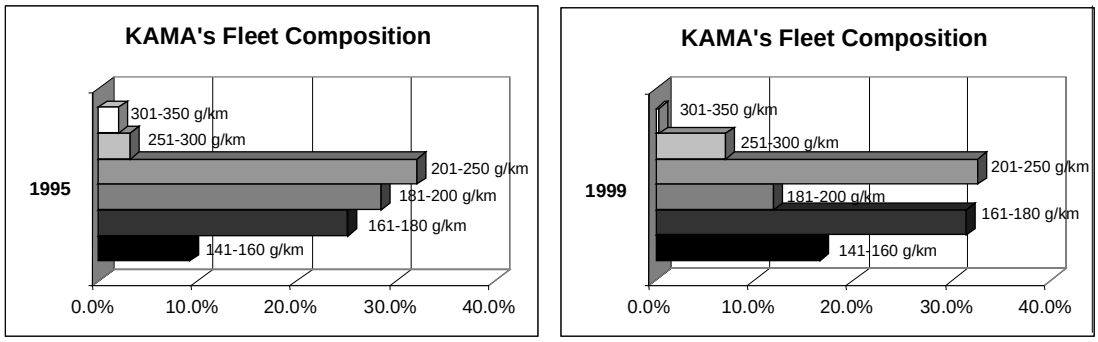


Figure 4: KAMA's Fleet Composition per CO_2 Category in Shares of Total

2.4. EU trends in physical fleet characteristics *(mass (kg), engine capacity (cm^3), engine power (kW)) by fuel type averaged over all newly registered passenger cars; and relationship to CO_2 emissions)*

Average total automobile mass was 1,057 kg in 1995 and decreased by 3.6% from 1995 to 1999. The average mass reached a maximum of 1,109 kg in 1998 and decreased afterwards (1,096 kg in 1999).

Gasoline automobiles reached the maximum average mass of 1,074 kg in 1997 (against 1,043 kg in 1995) and decreased to 1,039 kg in 1999, i.e. decreased by 0.4% within the reporting period. Diesel automobiles average mass reached the minimum of 1,630 kg in 1997 (against 1,789 kg in 1995) but increased to 1,731 kg in 1999; i.e. decreased by 3.2% within the reporting period. The overall trend in average mass shows very low variations in mass over the 1995-1999 period.

Total engine capacity has steadily decreased from 1,589 cm^3 in 1995 to 1,416 cm^3 in 1999 (with a slight increase in 1996). Gasoline engine capacity reached the maximum 1,583 cm^3 in 1996 (against 1,568 cm^3 in 1995) and decreased to 1,328 cm^3 in 1999. Diesel engine capacity reached the minimum 2,316 cm^3 in 1998 (against 2,735 cm^3 in 1995) and increased to 2,396 cm^3 in 1999. The overall trend shows some reasonable variations in engine capacity over the reporting period, mainly due to a more significant drop in gasoline engine capacity since 1995 (-15%) and a 12% lower (but stabilised) diesel engine capacity.

Total engine power reached the maximum 71 kW in 1997 (against 67 kW in 1995) and decreased to 61 kW in 1999 i.e. decreased by 9% over the reporting period. Gasoline engine reached the maximum 71 kW in 1997 (against 67 kW in 1995) and decreased to 60 kW in 1999, i.e. decreased by 10.4% over the reporting period. Diesel engine power has slightly increased by 4.5% within the reporting period i.e. from 66 kW in 1995 to 69 kW in 1999.

While the average mass increased over the period, CO_2 emissions fell. Capacity and power characteristics, however, fell faster than CO_2 emissions.

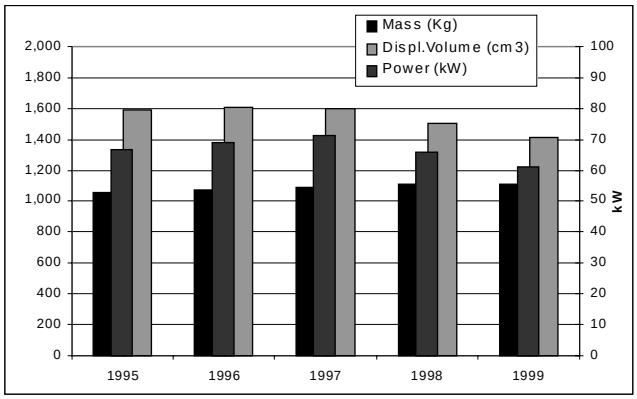


Figure 5A: Market trends in physical fleet characteristics for KAMA Members

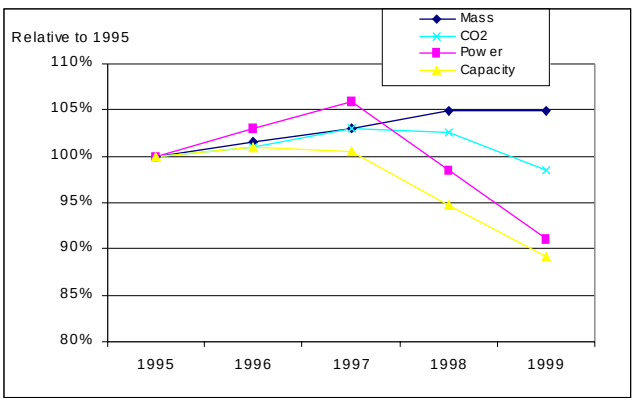


Figure 5B: Trends in Physical Characteristics and Specific CO_2 emissions

2.5. Trends in new technologies in the EU and Member States supported by data when possible (optional) *(e.g. % or number of total newly registered passenger cars which are direct injection)*

Nothing to report.

2.6. Trends in alternative concepts passenger cars in the EU and Member States supported by data when possible (optional) *(e.g. % or number of total newly registered passenger car)*

Nothing to report.

2.7. Trends in low emission passenger cars in the EU and Member States supported by data when possible (optional) (e.g. % or number of total newly registered passenger cars which emit less than 120 g/km)

Nothing to report.

2.8. Data methods (Monitoring Decision annexes II & III), data sources, and data confidence levels

KAMA has utilised in this report CO_2 statistics supplied by the French-based association AAA (Association Auxiliaire de L'Automobile). AAA is an independent organisation under public mandate, whose business is to develop and sell data to clients. In France they are official providers of automobile statistics to the government agencies. They have devoted their resources to the development of a database to monitor CO_2 emissions. They use official data sources in the Member States for car registration data. AAA's CO_2 database covers, in a consistent manner, over 90% (90-92%) of the EU and the rest are unknown figures (data for Finland and Greece are not available), and is widely regarded as one of the most reliable data sources currently available. The uncertainties incorporated into the figures shown in this report due to the incompleteness of the data set cannot be numerically quantified. However, they are estimated to be small. It can be assumed that they do not influence the overall result of the monitoring.

2.9. Description of measurement issues for CO_2 Emission Factors *(pre and post 1995)*

KAMA's CO_2 emissions figures have been established according to Directive 93/116/EC, which replaced the old Directive 80/1268/EC. The new test cycle has been fully implemented as from 1.1.1997, and will be applicable for the coming years. Among other changes, the new cycle includes for the first time a cold start period, and consequently values for fuel consumption and CO_2 emissions are higher under the new system. The implementation of this new measuring procedure has led to an artificial average increase of 9% of the CO_2 emission figures, compared to the previously used directive, whereas the CO_2 emissions from cars in the real world have not changed.

2.10. Other Issues

Nothing to report.

3. KEY ASSUMPTIONS TO THE AGREEMENT

3.1. Availability of Enabling Fuels

3.1.1. Description of state of assumption
3.1.2. Statement on whether assumption is up-held or compromised
3.1.3. If necessary: Statement on implication for agreement and justification

Nothing to report.

3.2. Distortion of Competition - link to 4.7.1

3.2.1. Description of state of assumption
3.2.2. Statement on whether assumption is up-held or compromised
3.2.3. If necessary: Statement on implication for agreement and justification

Nothing to report.

3.3. Promotion of CO_2 efficient technologies

3.3.1. Description of state of assumption
3.3.2. Statement on whether assumption is up-held or compromised
3.3.3. If necessary: Statement on implication for agreement and justification

Nothing to report.

3.4. Acceptance of innovation

3.4.1. Description of state of assumption
3.4.2. Statement on whether assumption is up-held or compromised
3.4.3. If necessary: Statement on implication for agreement and justification

Nothing to report.

4. OTHER ISSUES

4.1. New Measures affecting CO_2 *- and link to 3.3 (diffusion issues)*

4.1.1. Description
4.1.2. Comment on impact of the issue and on implication for agreement

Nothing to report.

4.2. New regulatory measures

4.2.1. Description
4.2.2. Comment on impact of the issue and on implication for agreement

More stringent regulations of emissions, safety, and recycling can affect the effort to reduce CO_2 emissions. For example, such regulations may contain legal, technical or procedural requirements which in practice could create technical or other impediments to the objective of reducing CO_2 emissions. Compliance with such regulations may also increase costs for manufacturers, thereby affecting their financial situation and having an impact on the resources available for developing CO_2 efficient technologies. KAMA member companies could not make use of the

lean burn engines due to the stringent EU emission standards. However, no negative impact could be identified within the reporting period.

4.3. Fiscal Measures
4.3.1. Description
4.3.2. Comment on impact of the issue and on implication for agreement)

Nothing to report.

4.4. Breakthrough technologies - *and link to 3.3 (diffusion issues)*
4.4.1. Description
4.4.2. Comment on impact of the issue and on implication for agreement

According to KAMA the development costs for breakthrough technologies will be higher for KAMA members than other associations which have a higher sales volume in the European Union. In addition, there has been no diesel emission regulation for passenger cars (except for jeep-type 4WDs) in Korea. KAMA argues that the development cost per diesel powered car will be much higher compared to other automobile manufacturers that sell diesel cars in large volume in the EU.

4.5. Research Programmes
4.5.1. Description
4.5.2. Comment on impact of the issue and on implication for agreement

Nothing to report.

4.6. Other measures - telematics, infrastructure, education
4.6.1. Description
4.6.2. Comment on impact of the issue and on implication for agreement

Nothing to report.

4.7. Economic situation of the car industry *(This includes, for KAMA only, a report on hampering measures*)
4.7.1. Description
4.7.2. Comment on impact of the issue and on implication for agreement

At the end of 1997, the economic situation of Korea was weak and measures by the International Monetary Fund (IMF) were put in place. The Korean automobile industry was confronted with financial difficulties; therefore some automobile manufacturers had to be merged or are about to be sold through international bidding. Automobile industry in Korea is suffering rapid restructuring, budget cuts and reduction of engineers staff, which affects significantly the efforts in research and development of fuel-efficient cars. Therefore, the situation of the Korean car industry associated with the Commitment is quite different from that of other countries' car industries. The economy recently, however, shows signs of recovery even though it is still unstable and vulnerable and so under close scrutiny by the IMF.

5. CONCLUSIONS

5.1. Progress Statement on Delivering the Agreement

Korean automobile manufacturing companies are encouraged to concentrate on CO_2 emission reductions by developing fuel-efficient cars. Although Korean companies have started to develop fuel efficient car technologies, there was no sign of significant CO_2 emissions reductions due to these factors during the period 1995 to 1999 as these CO_2 efficient technologies have not been launched on the EU market yet. Korean automobile manufacturers' current status in fuel-efficient car technologies lags several years behind those of European and Japanese automobile manufacturers.

5.2. Statement on Expected Future Progress of the Agreement

The estimated intermediate target range of 165-170 g/km in 2004 and the final target value of 140 g/km in 2009 require serious further effort by the Korean automobile manufacturers. Importantly, and as agreed upon, this target will mainly be achieved by technological developments affecting different car characteristics and market changes linked to these developments. Regarding technological developments, KAMA will aim at achieving a high share of new cars equipped with CO_2 efficient technologies. Korean automobile manufacturers have agreed to make every endeavour to contribute to the achievement of KAMA's goals.

Data Annexes

Data Annexes (1995-1999) attached to the report

B1 : SPECIFIC FUEL CONSUMPTION AND EMISSIONS OF CO_2 AVERAGED OVER ALL NEWLY REGISTERED PASSENGER CARS FOR EACH DIFFERENT FUEL-TYPE, FOR THE EU AND EACH MEMBER STATE

B2 : THE DISTRIBUTION OF CO_2 EMISSIONS IN THE NEW PASSENGER CAR FLEET FOR EACH DIFFERENT FUEL TYPE, FOR THE EU

B3 : THE DISTRIBUTION OF AVERAGED MASS, POWER AND ENGINE CAPACITY OF NEW PASSENGER CARS FOR EACH FUEL TYPE FOR THE EU-15 AND EACH MEMBER STATE

B3a. The Distribution of New Passenger Cars: by Average Mass (kg)[8]

B3b. The Distribution of New Passenger Cars: by Average Engine Power (kW)

B3c. The Distribution of New Passenger Cars: by Average Engine Capacity (cm3)

B4 EU-15 LIST OF ALL M1 VEHICLES (BY MODEL) COVERED BY THE COMMITMENT (1995-1999), AND THEIR MEMBER STATE AVAILABILITY

[8] Curb weight of vehicles.

B1. SPECIFIC FUEL CONSUMPTION (L/100) AND EMISSIONS OF CO2 (g/Km) AVERAGED OVER ALL NEWLY REGISTERED PASSENGER CARS FOR EACH DIFFERENT FUEL-TYPE, FOR THE EU AND EACH MEMBER STATE

1995 - KAMA MEMBERS

Member State	Total	identified version									unknown version
		Petrol			Diesel			Petrol + Diesel			
	Number	Number	average Fuel	average CO2	Number	average Fuel	average CO2	Number	average Fuel	average CO2	Number
EU-15	**169,060**	**148,643**	**8.1**	**195**	**2,723**	**11.6**	**309**	**151,366**	**8.2**	**197**	**17,694**
A	4,823	3,936	8.8	211	140	11.6	309	4,076	8.9	214	747
B	6,475	5,863	8.2		359	11.8	314	6,222	8.5	204	253
DK	2,109	2,109	8.0	190				2,109	8.0	190	
F	13,480	12,682	7.8	185	798	11.6	309	13,480	8.0	192	
FIN	257										257
GER	49,971	41,980	8.2	197				41,980	8.2	197	7,991
GR	8,240										8,240
IRE	357	338	7.5	176	19	11.6	309	357	7.7	183	
IT	10,879	10,770	7.8	187	60	9.8	261	10,830	7.8	187	49
LUX	275	219	9.0	213	18	11.7	311	237	9.2	221	38
NL	16,728	16,595	8.2	197	39	11.7	311	16,634	8.2	197	94
P	3,350	3,350	6.9	165				3,350	6.9	165	
SP	17,414	17,395	8.4	202				17,395	8.4	202	19
SW	2,365	2,289	7.8	186	76	11.7	310	2,365	8.0	190	
UK	32,337	31,117	8.2	196	1,214	11.6	310	32,331	8.3	200	6

B1. SPECIFIC FUEL CONSUMPTION (L/100) AND EMISSIONS OF CO2 (g/Km) AVERAGED OVER ALL NEWLY REGISTERED PASSENGER CARS FOR EACH DIFFERENT FUEL-TYPE, FOR THE EU AND EACH MEMBER STATE

1996 - KAMA MEMBERS

Member State	Total	identified version										unknown version
		Petrol			Diesel			Petrol + Diesel			Other	
	Number	Number	average Fuel	average CO2	Number	average Fuel	average CO2	Number	average Fuel	average CO2	Number	Number
EU-15	**236,454**	**207,129**	**8.2**	**197**	**4,341**	**10.3**	**274**	**211,470**	**8.3**	**199**	**240**	**24,744**
A	7,902	5,876	9.2	221	640	9.2	245	6,516	9.2	223		1,386
B	8,045	7,570	8.3	199	293	10.5	279	7,863	8.3	202	23	159
DK	3,773	3,773	8.0	190				3,773	8.0	190		
F	20,952	19,842	7.9	189	893	10.6	279	20,735	8.0	193	217	
FIN	227											227
GER	66,094	51,975	8.1	195	999	9.9	260	52,974	8.2	196		13,120
GR	9,601											9,601
IRE	1,502	1,468	7.7	182	34	11.5	305	1,502	7.8	184		
IT	14,865	14,631	8.3	200	190	9.4	250	14,821	8.4	201		44
LUX	357	321	8.4	202	18	10.2	276	339	8.5	206		18
NL	21,761	21,519	8.3	199	64	10.9	289	21,583	8.3	199		178
P	2,559	2,559	7.8	186				2,559	7.8	186		
SP	28,548	28,537	8.4	202				28,537	8.4	202		11
SW	3,852	3,737	8.1	193	115	11.6	309	3,852	8.2	197		
UK	46,416	45,321	8.3	199	1,095	11.2	297	46,416	8.4	201		

B1. SPECIFIC FUEL CONSUMPTION (L/100) AND EMISSIONS OF CO2 (g/Km) AVERAGED OVER ALL NEWLY REGISTEREDPASSENGER CARS FOR EACH DIFFERENT FUEL-TYPE, FOR THE EU AND EACH MEMBER STATE

1997 - KAMA MEMBERS

Member State	Total	identified version										unknown version
		Petrol			Diesel			Petrol + Diesel			Other	
	Number	Number	average Fuel	average CO2	Number	average Fuel	average CO2	Number	average Fuel	average CO2	Number	Number
EU-15	**275,453**	**245,729**	**8.3**	**201**	**6,431**	**9.2**	**246**	**252,160**	**8.3**	**203**	**1,835**	**21,458**
A	6,303	3,542	8.7	211	1,193	8.8	234	4,735	8.7	217		1,568
B	6,941	6,435	8.1	200	357	9.0	244	6,792	8.2	202	96	53
DK	5,795	5,795	8.1	195				5,795	8.1	195		
F	16,142	13,211	8.1	200	1,193	9.2	246	14,404	8.2	203	1,738	
FIN	126											126
GER	52,843	47,393	8.3	203	1,186	9.6	258	48,579	8.4	205		4,264
GR	15,160											15,160
IRE	2,945	2,931	7.7	181	14	11.7	312	2,945	7.7	182		
IT	47,025	45,308	8.1	198	1,708	8.8	234	47,016	8.1	200		9
LUX	420	372	8.2	199	33	9.4	257	405	8.3	203	1	14
NL	19,152	18,892	8.3	204	70	10.1	269	18,962	8.4	205		190
P	5,242	5,235	7.7	185	6	6.5	172	5,241	7.7	185		1
SP	38,463	38,436	8.4	203	1	9.8	262	38,437	8.4	203		26
SW	4,969	4,944	8.7	206	25	10.0	270	4,969	8.7	206		
UK	53,927	53,235	8.4	203	645	10.2	271	53,880	8.4	204		47

B1. SPECIFIC FUEL CONSUMPTION (L/100) AND EMISSIONS OF CO2 (g/Km) AVERAGED OVER ALL NEWLY REGISTERED PASSENGER CARS FOR EACH DIFFERENT FUEL-TYPE, FOR THE EU AND EACH MEMBER STATE

1998 - KAMA MEMBERS

Member State	Total	identified version										unknown version
		Petrol			Diesel			Petrol + Diesel			Other	
	Number	Number	average Fuel	average CO2	Number	average Fuel	average CO2	Number	average Fuel	average CO2	Number	Number
EU-15	**373,230**	**320,782**	**7.9**	**198**	**22,609**	**9.3**	**248**	**343,391**	**8.0**	**202**	**3,424**	**26,415**
A	5,886	3,204	7.9	198	1,739	9.4	249	4,943	8.4	216		943
B	9,289	7,912	7.9	200	1,201	8.4	226	9,113	8.0	203	149	27
DK	6,206	6,184	8.1	194	22	10.8	286	6,206	8.1	195		
F	19,999	14,591	7.9	198	2,390	8.5	226	16,981	7.9	202	3,018	
FIN	7											7
GER	60,161	54,302	8.2	203	4,553	10.5	278	58,855	8.4	209		1,306
GR	23,673											23,673
IRE	3,630	3,619	7.6	180	10	11.6	308	3,629	7.6	181		1
IT	85,776	77,872	7.5	187	7,644	9.7	256	85,516	7.6	193	256	4
LUX	468	373	7.8	192	94	9.4	250	467	8.1	203	1	
NL	22,087	21,506	7.9	199	343	7.8	205	21,849	7.9	199		238
P	7,639	7,524	7.4	181	114	6.6	176	7,638	7.4	181		1
SP	58,916	54,824	8.1	203	3,925	8.3	220	58,749	8.1	204		167
SW	6,291	6,274	8.2	197	17	10.3	273	6,291	8.2	197		
UK	63,202	62,597	8.3	207	557	9.7	259	63,154	8.3	208		48

B1. SPECIFIC FUEL CONSUMPTION (L/100) AND EMISSIONS OF CO2 (g/Km) AVERAGED OVER ALL NEWLY REGISTERED PASSENGER CARS FOR EACH DIFFERENT FUEL-TYPE, FOR THE EU AND EACH MEMBER STATE

1999 - KAMA MEMBERS

Member State	Total	identified version									unknown version
		Petrol			Diesel			Petrol + Diesel			Other	
	Number	Number	average Fuel	average CO2	Number	average Fuel	average CO2	Number	average Fuel	average CO2	Number	Number
EU-15	**463,724**	**379,666**	**7.6**	**189**	**34,286**	**9.5**	**253**	**413,952**	**7.8**	**194**	**4,995**	**44,777**
A	6,108	3,987	7.5	186	2,108	9.5	253	6,095	8.2	209		13
B	11,621	10,206	7.5	188	1,259	9.0	245	11,465	7.7	194	139	17
DK	6,344	6,258	8.0	195	86	9.8	259	6,344	8.0	196		
F	22,652	15,695	7.4	188	4,663	9.6	256	20,358	7.9	203	2,294	
GER	61,933	51,301	8.1	197	7,813	10.4	276	59,114	8.4	208		2,819
GR	38,507											38,507
IRE	8,559	8,549	7.6	191	1	11.0	290	8,550	7.6	191		9
IT	112,719	98,793	7.0	176	11,352	9.6	257	110,145	7.3	185	2,562	12
LUX	711	527	7.6	184	184	9.8	262	711	8.2	204		
NL	29,321	28,597	7.4	184	417	8.4	222	29,014	7.4	184		307
P	10,811	10,480	7.2	178	331	6.6	176	10,811	7.2	178		
SP	79,072	71,273	7.9	200	4,781	8.1	216	76,054	8.0	201		3,018
SW	8,117	7,964	7.8	186	153	10.7	283	8,117	7.8	188		
UK	67,249	66,036	7.9	195	1,138	9.2	246	67,174	7.9	196		75

B2. THE DISTRIBUTION OF CO2 EMISSIONS (g/Km)
IN THE NEW PASSENGER CAR FLEET
FOR EACH DIFFERENT FUEL TYPE, FOR THE EU

1995 - KAMA MEMBERS

CO2 (category)	identified version					
	Petrol		Diesel		Petrol + Diesel	
	Number	average CO2	Number	average CO2	Number	average CO2
141 - 160	13,912	152			13,912	152
161 - 180	37,958	174			37,958	174
181 - 200	43,188	198			43,188	198
201 - 250	48,640	212	65	245	48,705	212
251 - 300	4,698	276			4,698	276
301 - 350	247	307	2,658	311	2,905	310

B2. THE DISTRIBUTION OF CO2 EMISSIONS (g/Km)
IN THE NEW PASSENGER CAR FLEET
FOR EACH DIFFERENT FUEL TYPE, FOR THE EU

1996 - KAMA MEMBERS

CO2 (category)	identified version					
	Petrol		Diesel		Petrol + Diesel	
	Number	average CO2	Number	average CO2	Number	average CO2
141 - 160	9,891	153			9,891	153
161 - 180	42,967	174			42,967	174
181 - 200	81,605	197			81,605	197
201 - 250	65,994	211	918	237	66,912	212
251 - 300	6,181	277	1,799	260	7,980	273
301 - 350	459	313	1,624	310	2,083	311
351 - 450	32	360			32	360

B2. THE DISTRIBUTION OF CO2 EMISSIONS (g/Km)
IN THE NEW PASSENGER CAR FLEET
FOR EACH DIFFERENT FUEL TYPE, FOR THE EU

1997 - KAMA MEMBERS

CO2 (category)	identified version					
	Petrol		Diesel		Petrol + Diesel	
	Number	average CO2	Number	average CO2	Number	average CO2
141 - 160	9,615	155			9,615	155
161 - 180	50,093	175	501	176	50,594	175
181 - 200	84,751	197			84,751	197
201 - 250	93,305	218	3,317	237	96,622	219
251 - 300	7,307	275	2,285	264	9,592	272
301 - 350	410	320	328	313	738	317
351 - 450	248	360			248	360

B2. THE DISTRIBUTION OF CO2 EMISSIONS (g/Km)
IN THE NEW PASSENGER CAR FLEET
FOR EACH DIFFERENT FUEL TYPE, FOR THE EU

1998 - KAMA MEMBERS

CO2 (category)	identified version					
	Petrol		Diesel		Petrol + Diesel	
	Number	average CO2	Number	average CO2	Number	average CO2
141 - 160	48,207	152			48,207	152
161 - 180	69,250	170	5,702	177	74,952	170
181 - 200	51,266	194			51,266	194
201 - 250	140,337	223	3,095	240	143,432	223
251 - 300	10,526	280	13,732	279	24,258	279
301 - 350	1,093	319	80	313	1,173	319
351 - 450	103	360			103	360

B2. THE DISTRIBUTION OF CO2 EMISSIONS (g/Km)
IN THE NEW PASSENGER CAR FLEET
FOR EACH DIFFERENT FUEL TYPE, FOR THE EU

1999 - KAMA MEMBERS

CO2 (category)	identified version					
	Petrol		Diesel		Petrol + Diesel	
	Number	average CO2	Number	average CO2	Number	average CO2
141 - 160	68,929	153			68,929	153
161 - 180	124,821	166	5,203	178	130,024	166
181 - 200	49,578	192			49,578	192
201 - 250	125,237	223	9,779	238	135,016	224
251 - 300	10,010	275	19,155	281	29,165	279
301 - 350	1,062	316	149	306	1,211	315
351 - 450	29	362			29	362

**B3. (3a) THE DISTRIBUTION OF AVERAGED MASS (KG)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE**

1995 - KAMA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average Mass	average CO2	average Mass	average CO2	average Mass	average CO2
EU-15	**1,043**	**195**	**1,789**	**309**	**1,057**	**197**
A	1,104	211	1,830	309	1,129	214
B	1,031	198	1,703	314	1,069	204
DK	989	190			989	190
F	1,028	185	1,777	309	1,073	192
GER	1,070	197			1,070	197
IRE	976	176	1,830	309	1,022	183
IT	1,047	187	1,425	261	1,049	187
LUX	1,114	213	1,723	311	1,160	221
NL	1,011	197	1,832	311	1,013	197
P	985	165			985	165
SP	1,062	202			1,062	202
SW	1,080	186	1,834	310	1,104	190
UK	1,020	196	1,833	310	1,051	200

**B3. (3a) THE DISTRIBUTION OF AVERAGED MASS (KG)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE**

1996 - KAMA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average Mass	average CO2	average Mass	average CO2	average Mass	average CO2
EU-15	**1,058**	**197**	**1,757**	**274**	**1,072**	**199**
A	1,179	221	1,538	245	1,215	223
B	1,031	199	1,671	279	1,055	202
DK	1,074	190			1,074	190
F	1,000	189	1,792	279	1,034	193
GER	1,097	195	1,830	260	1,111	196
IRE	974	182	1,831	305	994	184
IT	1,095	200	1,567	250	1,101	201
LUX	1,104	202	1,606	276	1,131	206
NL	1,031	199	1,831	289	1,033	199
P	1,006	186			1,006	186
SP	1,067	202			1,067	202
SW	1,085	193	1,833	309	1,107	197
UK	1,025	199	1,833	297	1,044	201

**B3. (3a) THE DISTRIBUTION OF AVERAGED MASS (KG)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE**

1997 - KAMA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average Mass	average CO2	average Mass	average CO2	average Mass	average CO2
EU-15	**1,074**	**201**	**1,630**	**246**	**1,089**	**203**
A	1,179	211	1,483	234	1,256	217
B	1,039	200	1,508	244	1,063	202
DK	1,058	195			1,058	195
F	1,018	200	1,715	246	1,076	203
GER	1,113	203	1,721	258	1,128	205
IRE	995	181	1,834	312	999	182
IT	1,082	198	1,552	234	1,100	200
LUX	1,090	199	1,527	257	1,126	203
NL	1,050	204	1,731	269	1,052	205
P	1,062	185	1,160	172	1,062	185
SP	1,092	203	1,872	262	1,092	203
SW	1,057	206	1,856	270	1,061	206
UK	1,050	203	1,834	271	1,059	204

**B3. (3a) THE DISTRIBUTION OF AVERAGED MASS (KG)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE**

1998 - KAMA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average Mass	average CO2	average Mass	average CO2	average Mass	average CO2
EU-15	**1,067**	**198**	**1,708**	**248**	**1,109**	**202**
A	1,098	198	1,751	249	1,328	216
B	1,055	200	1,475	226	1,110	203
DK	1,096	194	1,798	286	1,098	195
F	1,004	198	1,557	226	1,082	202
GER	1,137	203	1,816	278	1,190	209
IRE	1,004	180	1,836	308	1,007	181
IT	1,019	187	1,816	256	1,090	193
LUX	1,076	192	1,625	250	1,186	203
NL	1,044	199	1,377	205	1,049	199
P	1,041	181	1,180	176	1,043	181
SP	1,073	203	1,536	220	1,104	204
SW	1,060	197	1,816	273	1,062	197
UK	1,087	207	1,870	259	1,094	208

**B3. (3a) THE DISTRIBUTION OF AVERAGED MASS (KG)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE**

1999 - KAMA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average Mass	average CO2	average Mass	average CO2	average Mass	average CO2
EU-15	**1,039**	**189**	**1,731**	**253**	**1,096**	**194**
A	1,128	186	1,682	253	1,320	209
B	1,026	188	1,582	245	1,087	194
DK	1,086	195	1,833	259	1,096	196
F	952	188	1,669	256	1,116	203
GER	1,156	197	1,825	276	1,245	208
IRE	1,034	191	1,905	290	1,034	191
IT	981	176	1,813	257	1,067	185
LUX	1,090	184	1,700	262	1,248	204
NL	1,004	184	1,506	222	1,011	184
P	997	178	1,182	176	1,002	178
SP	1,055	200	1,522	216	1,084	201
SW	1,047	186	1,735	283	1,060	188
UK	1,051	195	1,890	246	1,065	196

B3. (3b) THE DISTRIBUTION OF POWER (KW)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE

1995 - KAMA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average Power	average CO2	average Power	average CO2	average Power	average CO2
EU-15	**67**	**195**	**66**	**309**	**67**	**197**
A	72	211	73	309	72	214
B	65	198	58	314	64	204
DK	65	190			65	190
F	66	185	64	309	66	192
GER	65	197			65	197
IRE	65	176	70	309	65	183
IT	69	187	47	261	69	187
LUX	74	213	59	311	73	221
NL	66	197	70	311	66	197
P	63	165			63	165
SP	72	202			72	202
SW	81	186	70	310	81	190
UK	67	196	70	310	67	200

B3. (3b) THE DISTRIBUTION OF POWER (KW)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE

1996 - KAMA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average Power	average CO2	average Power	average CO2	average Power	average CO2
EU-15	**69**	**197**	**68**	**274**	**69**	**199**
A	76	221	63	245	75	223
B	65	199	58	279	65	202
DK	66	190			66	190
F	64	189	66	279	64	193
GER	69	195	73	260	69	196
IRE	65	182	70	305	66	184
IT	74	200	56	250	74	201
LUX	74	202	61	276	73	206
NL	70	199	70	289	70	199
P	65	186			65	186
SP	72	202			72	202
SW	82	193	70	309	82	197
UK	68	199	71	297	68	201

B3. (3b) THE DISTRIBUTION OF POWER (KW)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE

1997 - KAMA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average Power	average CO2	average Power	average CO2	average Power	average CO2
EU-15	**71**	**201**	**64**	**246**	**71**	**203**
A	75	211	62	234	71	217
B	67	200	59	244	67	202
DK	67	195			67	195
F	67	200	65	246	67	203
GER	70	203	69	258	70	205
IRE	67	181	71	312	67	182
IT	71	198	61	234	71	200
LUX	74	199	62	257	73	203
NL	72	204	69	269	72	205
P	65	185	50	172	65	185
SP	76	203	59	262	76	203
SW	76	206	73	270	76	206
UK	71	203	72	271	71	204

B3. (3b) THE DISTRIBUTION OF POWER (KW)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE

1998 - KAMA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average Power	average CO2	average Power	average CO2	average Power	average CO2
EU-15	**66**	**198**	**64**	**248**	**66**	**202**
A	62	198	65	249	63	216
B	64	200	58	226	63	203
DK	68	194	72	286	68	195
F	62	198	60	226	62	202
GER	69	203	71	278	69	209
IRE	68	180	71	308	68	181
IT	57	187	66	256	58	193
LUX	67	192	67	250	67	203
NL	64	199	57	205	64	199
P	59	181	50	176	58	181
SP	69	203	54	220	68	204
SW	70	197	79	273	70	197
UK	74	207	78	259	74	208

B3. (3b) THE DISTRIBUTION OF POWER (KW)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE

1999 - KAMA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average Power	average CO2	average Power	average CO2	average Power	average CO2
EU-15	**60**	**189**	**69**	**253**	**61**	**194**
A	62	186	71	253	65	209
B	59	188	63	245	59	194
DK	67	195	80	259	67	196
F	56	188	67	256	59	203
GER	70	197	74	276	71	208
IRE	62	191	88	290	62	191
IT	50	176	71	257	52	185
LUX	67	184	69	262	67	204
NL	56	184	64	222	56	184
P	55	178	50	176	55	178
SP	66	200	56	216	65	201
SW	66	186	72	283	66	188
UK	65	195	90	246	66	196

**B3. (3c) THE DISTRIBUTION OF ENGINE CAPACITY (CM3)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE**

1995 - KAMA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average Cm3	average CO2	average Cm3	average CO2	average Cm3	average CO2
EU-15	**1,568**	**195**	**2,735**	**309**	**1,589**	**197**
A	1,630	211	2,874	309	1,673	214
B	1,532	198	2,461	314	1,586	204
DK	1,474	190			1,474	190
F	1,510	185	2,646	309	1,577	192
GER	1,594	197			1,594	197
IRE	1,407	176	2,874	309	1,485	183
IT	1,533	187	2,198	261	1,537	187
LUX	1,655	213	2,505	311	1,719	221
NL	1,539	197	2,858	311	1,542	197
P	1,389	165			1,389	165
SP	1,636	202			1,636	202
SW	1,738	186	2,874	310	1,774	190
UK	1,558	196	2,874	310	1,608	200

**B3. (3c) THE DISTRIBUTION OF ENGINE CAPACITY (CM3)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE**

1996 - KAMA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average Cm3	average CO2	average Cm3	average CO2	average Cm3	average CO2
EU-15	**1,583**	**197**	**2,666**	**274**	**1,605**	**199**
A	1,686	221	2,173	245	1,734	223
B	1,553	199	2,334	279	1,582	202
DK	1,519	190			1,519	190
F	1,507	189	2,654	279	1,556	193
GER	1,613	195	2,874	260	1,637	196
IRE	1,431	182	2,874	305	1,464	184
IT	1,608	200	2,411	250	1,618	201
LUX	1,627	202	2,337	276	1,664	206
NL	1,560	199	2,852	289	1,564	199
P	1,411	186			1,411	186
SP	1,608	202			1,608	202
SW	1,734	193	2,874	309	1,768	197
UK	1,566	199	2,874	297	1,597	201

**B3. (3c) THE DISTRIBUTION OF ENGINE CAPACITY (CM3)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE**

1997 - KAMA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average Cm3	average CO2	average Cm3	average CO2	average Cm3	average CO2
EU-15	**1,577**	**201**	**2,364**	**246**	**1,597**	**203**
A	1,645	211	2,063	234	1,750	217
B	1,523	200	2,132	244	1,555	202
DK	1,537	195			1,537	195
F	1,526	200	2,484	246	1,605	203
GER	1,628	203	2,583	258	1,652	205
IRE	1,454	181	2,874	312	1,460	182
IT	1,531	198	2,181	234	1,555	200
LUX	1,590	199	2,137	257	1,634	203
NL	1,575	204	2,556	269	1,578	205
P	1,395	185	1,905	172	1,396	185
SP	1,604	203	2,476	262	1,604	203
SW	1,662	206	2,874	270	1,668	206
UK	1,589	203	2,874	271	1,604	204

**B3. (3c) THE DISTRIBUTION OF ENGINE CAPACITY (CM3)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE**

1998 - KAMA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average Cm3	average CO2	average Cm3	average CO2	average Cm3	average CO2
EU-15	**1,448**	**198**	**2,316**	**248**	**1,505**	**202**
A	1,391	198	2,263	249	1,698	216
B	1,418	200	2,121	226	1,510	203
DK	1,523	194	2,476	286	1,526	195
F	1,406	198	2,265	226	1,527	202
GER	1,562	203	2,467	278	1,632	209
IRE	1,437	180	2,874	308	1,441	181
IT	1,275	187	2,321	256	1,368	193
LUX	1,453	192	2,311	250	1,625	203
NL	1,404	199	2,123	205	1,415	199
P	1,290	181	1,905	176	1,299	181
SP	1,494	203	2,190	220	1,540	204
SW	1,536	197	2,687	273	1,540	197
UK	1,558	207	2,874	259	1,570	208

**B3. (3c) THE DISTRIBUTION OF ENGINE CAPACITY (CM3)
OF NEW PASSENGER CARS FOR EACH FUEL TYPE
FOR THE EU AND EACH MEMBER STATE**

1999 - KAMA MEMBERS

Member State	identified version					
	Petrol		Diesel		Petrol + Diesel	
	average Cm3	average CO2	average Cm3	average CO2	average Cm3	average CO2
EU-15	**1,328**	**189**	**2,396**	**253**	**1,416**	**194**
A	1,406	186	2,418	253	1,756	209
B	1,324	188	2,224	245	1,423	194
DK	1,480	195	2,635	259	1,496	196
F	1,258	188	2,392	256	1,518	203
GER	1,558	197	2,496	276	1,682	208
IRE	1,351	191	2,874	290	1,352	191
IT	1,109	176	2,390	257	1,241	185
LUX	1,431	184	2,423	262	1,688	204
NL	1,238	184	2,264	222	1,252	184
P	1,214	178	1,905	176	1,235	178
SP	1,440	200	2,205	216	1,488	201
SW	1,462	186	2,486	283	1,482	188
UK	1,391	195	2,886	246	1,417	196

B4. EU LIST OF ALL M1 VEHICLES (BY MODEL) COVERED BY THE COMMITMENT (1995-1999)
AND THEIR MEMBER STATE AVAILABILITY

1995 - KAMA MEMBERS

Model	Fuel Type	Member State Market Availability (MS Initials)
ROCSTA	G	IT, NL
	D	B, IT, LUX
ESPERO	G	N.A.
NEXIA	G	N.A.
ACCENT	G	N.A.
LANTRA	G	N.A.
PONY	G	N.A.
SCOUPE	G	N.A.
SONATA	G	N.A.
PRIDE	G	N.A.
SEPHIA	G	N.A.
SPORTAGE	G	N.A.
KORANDO	D	B, F, IT, LUX.NL
MUSSO	D	A, B, F, IRE, LUX, NL, SW, UK

Note:The grey area between M1 and N1 vehicles is not given in this table, rather the availability of each model in the EU15.

B4. EU LIST OF ALL M1 VEHICLES (BY MODEL) COVERED BY THE COMMITMENT (1995-1999) AND THEIR MEMBER STATE AVAILABILITY

1996 - KAMA MEMBERS

Model	Fuel Type	Member State Market Availability (MS Initials)
ROCSTA	G	B, IT
	D	B, IT, LUX, NL
ESPERO	G	N.A.
NEXIA	G	N.A.
ACCENT	G	N.A.
COUPE	G	N.A.
LANTRA	G	N.A.
PONY	G	N.A.
SCOUPE	G	N.A.
SONATA	G	N.A.
CLARUS	G	N.A.
PRIDE	G	N.A.
SEPHIA	G	N.A.
SPORTAGE	G	A, B, F, GER, IRE, IT, LUX, NL, UK
	D	A, B, IT, LUX
KORANDO	D	B, F, LUX
MUSSO	G	A, F, GER, IT, NL, UK
	D	A, B, F, GER, IRE, IT, LUX, NL, SW, UK

Note:The grey area between M1 and N1 vehicles is not given in this table, rather the availability of each model in the EU15.

B4. EU LIST OF ALL M1 VEHICLES (BY MODEL) COVERED BY THE COMMITMENT (1995-1999)
AND THEIR MEMBER STATE AVAILABILITY

1997 - KAMA MEMBERS

Model	Fuel Type	Member State Market Availability (MS Initials)
ROCSTA	G	B, IT
	D	B, IT
ESPERO	G	N.A.
LANOS	G	N.A.
LEGANZA	G	N.A.
NEXIA	G	N.A.
NUBIRA	G	N.A.
ACCENT	G	N.A.
COUPE	G	N.A.
GALLOPER	G	IT
	D	IT
H-1	G	GER
	D	SP
LANTRA	G	A, B, DK, F, GER, IRE, IT, LUX, NL, P, SP, SW, UK
	D	A, B, F, IT, LUX, NL, P
PONY	G	N.A.
SCOUPE	G	N.A.
SONATA	G	N.A.
CLARUS	G	N.A.
PRIDE	G	N.A.
SEPHIA	G	N.A.
SPORTAGE	G	A, B, DK, F, GER, IRE, IT, LUX, NL, UK
	D	A, B, F, GER, IT, LUX, NL
KORANDO	G	B, F, GER, IT, UK
	D	A, B, F, GER, IRE, IT, NL, SW, UK
MUSSO	G	A, B, F, GER, IRE, IT, LUX, NL, SW, UK
	D	A, B, F, GER, IRE, IT, LUX, NL, SW, UK

Note:The grey area between M1 and N1 vehicles is not given in this table, rather the availability of each model in the EU15.

B4. EU LIST OF ALL M1 VEHICLES (BY MODEL) COVERED BY THE COMMITMENT (1995-1999)

AND THEIR MEMBER STATE AVAILABILITY

1998 - KAMA MEMBERS

Model	Fuel Type	Member State Market Availability (MS Initials)
ROCSTA	G	IT
	D	B, IT, LUX
ESPERO	G	N.A.
LANOS	G	N.A.
LEGANZA	G	N.A.
MATIZ	G	N.A.
NEXIA	G	N.A.
NUBIRA	G	N.A.
ACCENT	G	N.A.
ATOS	G	N.A.
COUPE	G	N.A.
GALLOPER	G	GER, IT, LUX
	D	A, B, DK, F, GER, IT, LUX, NL, SW
H-1	G	B, DK, F, GER, NL, SP, SW
	D	A, B, DK, F, GER, IT, NL, SP
LANTRA	G	A, B, DK, F, GER, IRE, IT, LUX, NL, P, SP,SW, UK
	D	A, B, F, GER, IT, LUX, NL, P, SP
SCOUPE	G	N.A.
SONATA	G	N.A.
CARNIVAL	G	IT
	D	IT
CLARUS	G	N.A.
PRIDE	G	N.A.
SEPHIA	G	N.A.
SHUMA	G	N.A.
SPORTAGE	G	A, B, F, GER, IRE, IT, LUX, NL, SW, UK
	D	A, B, F, GER, IT, LUX, NL
KORANDO	G	B, F, GER, IT, LUX, NL, SW, UK
	D	A, B, F, GER, IRE, IT, LUX, NL, UK
MUSSO	G	A, B, F, GER, IT, LUX, NL, SW, UK
	D	A, B, F, GER, IRE, IT, LUX, NL, SW, UK

Note:The grey area between M1 and N1 vehicles is not given in this table, rather the availability of each model in the EU15.

B4. EU LIST OF ALL M1 VEHICLES (BY MODEL) COVERED BY THE COMMITMENT (1995-1999)
AND THEIR MEMBER STATE AVAILABILITY

1999 - KAMA MEMBERS

Model	Fuel Type	Member State Market Availability (MS Initials)
ROCSTA	G	IT
	D	B, IT
ESPERO	G	N.A.
KORANDO	G	B, UK
	D	A, B, F, LUX, UK
LANOS	G	N.A.
LEGANZA	G	N.A.
MATIZ	G	N.A.
MUSSO (1)	G	A, B, LUX, UK
	D	A, B, F, IRE, LUX, UK
NEXIA	G	N.A.
NUBIRA	G	N.A.
ATOS	G	N.A.
COUPE	G	N.A.
GALLOPER	G	F, GER, IT
	D	A, B, DK, F, GER, IT, LUX, NL, SW
H-1	G	B, DK, F, GER, NL, SP, SW
	D	A, B, DK, F, GER, IT, NL, SP
JOICE	G	N.A.
LANTRA	G	A, B, DK, F, GER, IRE, IT, LUX, NL, P, SP, SW, UK
	D	A, B, F, GER, IT, LUX, NL, P, SP
SANTAMO	G	N.A.
SCOUPE	G	N.A.
SONATA	G	N.A.
XG	G	N.A.
CARNIVAL	G	A, DK, F, GER, IT, LUX, NL, SP, UK
	D	A, B, DK, F, GER, IT, LUX, NL, SP, UK
CLARUS	G	N.A.
JOICE	G	N.A.
PRIDE	G	N.A.
RETONA	G	GER
	D	B, GER, LUX
SEPHIA	G	N.A.
SHUMA	G	N.A.
SPORTAGE	G	A, B, DK, F, GER, IRE, IT, NL, SW, UK
	D	A, B, F, GER, IT, LUX, NL, SW
KORANDO	G	B, F, GER, IT, LUX, NL, SW, UK
	D	B, F, GER, IT, LUX, NL, SW, UK
MUSSO (2)	G	B, F, GER, IT, NL, UK
	D	B, F, GER, IT, LUX, NL, SW, UK

(1) Model produced by Daewoo

(2) Model produced by Ssangyong

Note:The grey area between M1 and N1 vehicles is not given in this table, rather the availability of each model in the EU15.