

CO₂ emissions performance of car manufacturers in 2011



Executive summary

The European Environment Agency (EEA) is supporting the European Commission in the monitoring of the CO₂ performance of passenger cars, in accordance with the Regulation (EC) 443/2009. This Regulation sets an emission target for new passenger cars for the year 2015 (130 g CO₂/km) — phased in from 2012 — and for the year 2020 (95 g CO₂/km). Starting from 2012, a specific binding CO₂ target is calculated for each manufacturer every year based on the average mass of its fleet (Annex 1). In July 2012, the Commission proposed to amend the regulation with a view to defining the modalities for reaching the 2020 target to reduce CO₂ emissions from new passenger cars.

For evaluating the progress of manufacturers towards their targets, the EEA is collecting and quality checking data on CO₂ emissions from passenger cars registered in all Member States of the European Union since 2010. Using the Member State data, this note provides an overview of the performance of cars manufacturers in meeting their CO₂ emissions targets.

Data collected reveal that in 2011 the majority of the car manufacturers are already well on track to achieve the CO₂ emission target set for 2012.

1 Calculating the CO₂ emissions performance of car manufacturers

To reduce CO₂ emissions in the road transport sector, the European Parliament and the Council adopted Regulation (EC) No 443/2009 introducing mandatory CO₂ emission performance standards for new passenger cars.

The regulation sets a CO₂ specific emission ⁽¹⁾ target of 130 g CO₂/km by 2015, defined as the average value for the fleet of newly registered passenger cars in the EU. For the period until 2015, the modalities of compliance with the targets have been established and are presented in this chapter. A long-term target of 95 g CO₂/km is set for 2020. The modalities for compliance with that target will be determined by the legislators in the on-going review of the regulation. The review had been initiated by the adoption, in July 2012, of a proposal amending the regulation.

The progress of manufacturers is evaluated on an annual basis by calculating the following three parameters:

1. CO₂ average specific emissions;
2. the specific CO₂ emissions target;
3. the difference between the average specific emissions and the emissions target.

The data used for the calculations of these parameters are collected each year by Member States, based on registrations of new passenger cars. Once transmitted to the European Commission and the EEA, the data were communicated to manufacturers for verification. Manufacturers had three months' time, after notification, for informing the European Commission of any errors in the data. As notifications are voluntary, only 38 manufacturers submitted notifications of errors within the three month deadline. The European Commission considered the manufacturers' corrections and decided whether these would be accepted for the calculation of their average CO₂ emissions and specific emission targets. This note presents the final data for the year 2011, after manufacturers' notifications and the Commission decision concerning their validity.

1.1 CO₂ average specific emissions

Average specific emissions of CO₂ are calculated as a weighted average of the manufacturer's fleet. Several adjustments must also be considered, according to the regulation (Table 1.1):

- phase in;
- super-credits;
- E85 extra credits;
- eco-innovations.

Phase in

A phase-in schedule applies for calculating average specific emissions. During the period 2012–2014, only a certain percentage (65 % in 2012, 75 % in 2013, 80 % in 2014) of the best performing registered cars will be taken into account in determining the performance of manufacturers. From 2015 onwards, 100 % of the new cars of each manufacturer will be taken into account.

Super-credits

The Regulation foresees the allocation of super-credits for new passenger cars with CO₂ emissions lower than 50 g CO₂/km. These vehicles are given a higher weight in calculating CO₂-specific emissions as they are considered equivalent to 3.5 cars in 2012 and 2013, 2.5 cars in 2014, 1.5 cars in 2015, 1 car from 2016 onwards.

E85 extra credits

Additional reductions of average specific emissions are assigned for vehicles capable of running on a mixture of petrol with 85 % ethanol ('E85'). Their emissions will be reduced by 5 % until 2015 in recognition of their ability to reduce emissions when running on biofuels. This reduction can be applied only where at least 30 % of the filling stations in the Member State in which the vehicle is registered provide this type of alternative fuel.

⁽¹⁾ In this context 'specific emissions' means 'emissions per vehicle kilometer'.

Eco-innovations

Certain innovative technologies cannot demonstrate their CO₂-reducing effects under the current type approval test procedure. In order to support technical development, a manufacturer or supplier can apply to the Commission for the approval of such innovative technologies. The approval conditions are set out in Commission Regulation (EU) 725/2011. If a manufacturer fits its car fleet with an approved eco-innovation the average emissions may be reduced by a maximum of 7 g CO₂/km. One application is currently being assessed.

1.2 Targets

Each manufacturer has its individual annual target, calculated on the basis of the mass ⁽²⁾ of the registered cars. The following formula applies:

$$\text{Specific emissions of CO}_2 = 130 + a \times (M - M_0)$$

Where:

M is the average mass of the manufacturer's fleet in kilograms (kg)

M_0 is the reference mass (1 372.0 kg)

a is 0.0457

This means that if the average mass of a manufacturer's cars in a given year is 1 472 kg, the

target for that manufacturer is 134.57 g CO₂/km. If the average mass of the cars is 1 272 kg, the target will be 125.43 g CO₂/km.

This formula aims to guarantee undistorted competition between manufacturers while taking into account their differences. On the basis of the Regulation 443/2209, the M_0 in the formula should if necessary be updated by 2014, in order to reflect changes in vehicles' weight over the previous three calendar years.

Manufacturers have the right to form a pool with other manufacturers in order to be monitored as one entity for the purpose of having one common target. In this case, the binding target will be the pool target (calculated on the basis of the whole fleet of the pool). At the moment eight pools have been declared and accepted by the Commission (Table 1.2).

Manufacturers selling less than 10 000 vehicles per year can apply for derogation. A specific emissions target consistent with the manufacturer's economic and technological potential to reduce specific CO₂ emissions can be granted under such derogation. For the year 2012, the Commission has granted eighteen derogations applications (Table 1.3).

Special niche derogations are foreseen for manufacturers responsible for 10 000–300 000 new vehicle registrations. In this case a special target is established, corresponding to a 25 % reduction compared to the average specific emission in 2007. In 2012 two niche derogations have been granted.

Table 1.1 Summary of the parameters applying to the calculation of manufacturer performance from 2012 to 2016

	2012	2013	2014	2015	2016
Phase in	65 %	75 %	80 %	100 %	100 %
Super-credit for vehicle emitting less than 50 g CO ₂ /km	3.5	3.5	2.5	1.5	1
Emission reduction for E85 vehicles (*)	5 %	5 %	5 %	5 %	0 %

Note: (*) Applies only where at least 30 % of the filling stations in the Member State in which the vehicle is registered provide this type of alternative fuel.

⁽²⁾ According to Regulation 443/2009 mass means the weight of a standard vehicle, including coolant, lubricants, fuel, spare wheel if mounted by the manufacturer, tools, driver. For determining the mass, the fuel tank must be filled to 90 % and the weight of the driver is put at 75 kg.

Table 1.2 Manufacturers' pools in 2012

Pool	Manufacturer
Daimler AG	Daimler AG Stuttgart Mercedes-AMG GmbH, Affalterbach
Suzuki	Suzuki Motor Corporation Maruti Suzuki India Ltd Magyar Suzuki Corporation Ltd
Ford Werke GMBH	Ford Motor Company Ford-Werke GmbH CNG Technik
Mitsubishi Motors	Mitsubishi Motors Corporation (MMC) Mitsubishi Motor Europe BV (MME)
Honda Motor Europe Ltd	Honda Automobile China CO Honda Automobile Thailand CO Honda Motor CO Honda of the UK Manufacturing Honda Türkiye AS
Toyota-Daihatsu Group	Toyota Motor Europe NV SA Daihatsu Motor Co. Ltd
VW Group PC	Audi AG Audi Hungaria Motor KFT Quattro GmbH Bentley Motors Ltd Bugatti Automobili Lamborghini SpA SEAT Skoda Auto AS Volkswagen AG Dr.Ing.h.c.F. Porsche AG
Tata Motors Ltd, Jaguar Cars Ltd, Land Rover	Land Rover Jaguar Cars Ltd Tata Motors Limited

Table 1.3 Derogations granted for the years 2012–2016

Manufacturers	Specific emissions targets in g CO ₂ /km				
	2012	2013	2014	2015	2016
ALPINA Burkard Bovensiepen GmbH + Co. KG		230	225	225	220
Artega Automobil GmbH & Co.KG		223	286	286	286
Aston Martin Lagonda Ltd	320	318	313	310	309
Caterham Cars Limited	210	210	210	210	210
Ferrari	303	303	303	295	290
Great Wall Motor Company Limited	195	190			
Koenigsegg Automotive AB	275	275	275	275	275
KTM-Sportmotorcycle AG	200	195	195	190	185
Litex Motors AD	168	160	159	156	154
Lotus Cars Limited	280	280	280	280	280
Mahindra & Mahindra Ltd	205	183	173	162	144
Marussia Motors LLC	270	270	270	270	270
McLaren Automotive Ltd	285	285	280	275	275
MG Motor UK Limited	184	151.6	149.5		
Morgan Motor Co. Ltd	180	168	170	170	168
Noble Automotive Ltd	400	360	360	360	360
Pagani Automobili S.p.A		340	340	340	340
PGO Automobiles		175	175	175	160
Perusahaan Otomobil Nasional Sdn Bhd	185	181	147	137	
Qoros Automotive Co., Ltd.		152	152		
Radical Motorsport Ltd.		229	215	200	198
Spyker Automobielen B.V	340	360	380	380	330
Ssangyong Motor Company	180	180	180	180	180
Wiesmann GmbH	274	274	274	274	274
Zhejiang Geely Automobile Co. Ltd.		167.5	163.5	162	159.5

2 Car manufacturer CO₂ emissions in 2011

Table 2.1 presents data (number of registrations, average mass and average emissions) for major manufacturers, i.e. those that have registered more than 100 000 vehicles in 2011. In total, these manufacturers sold around 12.0 million vehicles in the EU-27 in 2011, equivalent to 94 % of the new registrations. Average emissions of those manufacturers in the previous biennium are also presented in the table.

The average EU emissions of all manufacturers in 2011 was 135.7 g CO₂/km. The average CO₂ emission of the major EU manufacturers is 134.2 g CO₂/km, i.e. 1.5 g CO₂/km lower than the total average.

In 2011, six major manufacturers were below 130 g CO₂/km while in 2010 only two manufacturers were below this value. The average emissions of the major manufacturers in this group varied from 118 g CO₂/km to 153 g CO₂/km, with a range of 35 g CO₂/km. Similar range was observed in 2010 (35 g CO₂/km), while a larger range was observed in 2009 (43 g CO₂/km).

As in the previous year the Fiat group had the lowest average CO₂ emissions (118 g CO₂/km) among the major manufacturers. Over the period 2000–2011, specific CO₂ emissions of new cars registered in the EU by Fiat group decreased by 25 %. Downsizing, i.e. the shift to smaller and lighter vehicles, has been one of the drivers for this reduction. In fact, since 2003 the share of small cars in Fiat fleet increased considerably. The increasing share of diesel and alternative fuel vehicles, notably liquefied petroleum gas (LPG) and natural gas (NG), has also contributed to the observed emission reductions. The number of LPG and NG vehicles exceeded 19 % of total registrations in 2009. This share decreased to less than 7% in 2011. Compared to the previous year, Fiat reduced emissions by 6.7 g CO₂/km.

Seat, Citroën, Peugeot and Renault also reduced their average emissions to values below 130 g CO₂/km.

Compared to the previous year, Seat and Citroën reduced their average CO₂ emissions by 6 g CO₂/km while Peugeot and Renault reduced emissions, respectively from 131 g CO₂/km to 128 g CO₂/km and from 134 g CO₂/km to 129 g CO₂/km. Together with Fiat, Seat and Renault had the lowest average cars' mass amongst the major car manufacturers.

As in previous years, Toyota Motor Europe continues to produce some of the lowest emitting cars. Specific CO₂ emissions of new Toyota cars registered in the EU decreased by 27% over the 2000–2011 period, reaching 126 g/km in 2011. Hybridisation may have contributed to this reduction, but since hybrids are mostly registered as petrol cars, this effect cannot be easily quantified. Toyota has the highest percentage of vehicles with emissions below 100 g CO₂/km (14 % of its fleet), along with Seat. As in the previous two years, Toyota recorded an average emission of 3 g CO₂/km lower compared to the preceding year's fleet.

All manufacturers of this group decreased their average emissions level compared to last year. Compared to 2010, the largest reductions of emissions were achieved by Daimler AG (7.4 g CO₂/km) and by the Fiat group (6.7 g CO₂/km).

As a general observation, dieselisation ⁽³⁾, i.e. the introduction of more diesel vehicles, is one of the main drivers for the emissions reductions of the major manufacturers (Figure 2.1). Diesel vehicles registrations have increased consistently over the years, but for some manufacturers the share of diesel cars has stabilised over the last couple of years. Despite the increasing trend, the share of alternative fuelled vehicles remains low and hence has not contributed significantly to the observed emissions reductions. For some manufacturers a shift to smaller vehicles (downsizing – a reduced engine capacity) is also observed, for example for BMW, Fiat and Volkswagen.

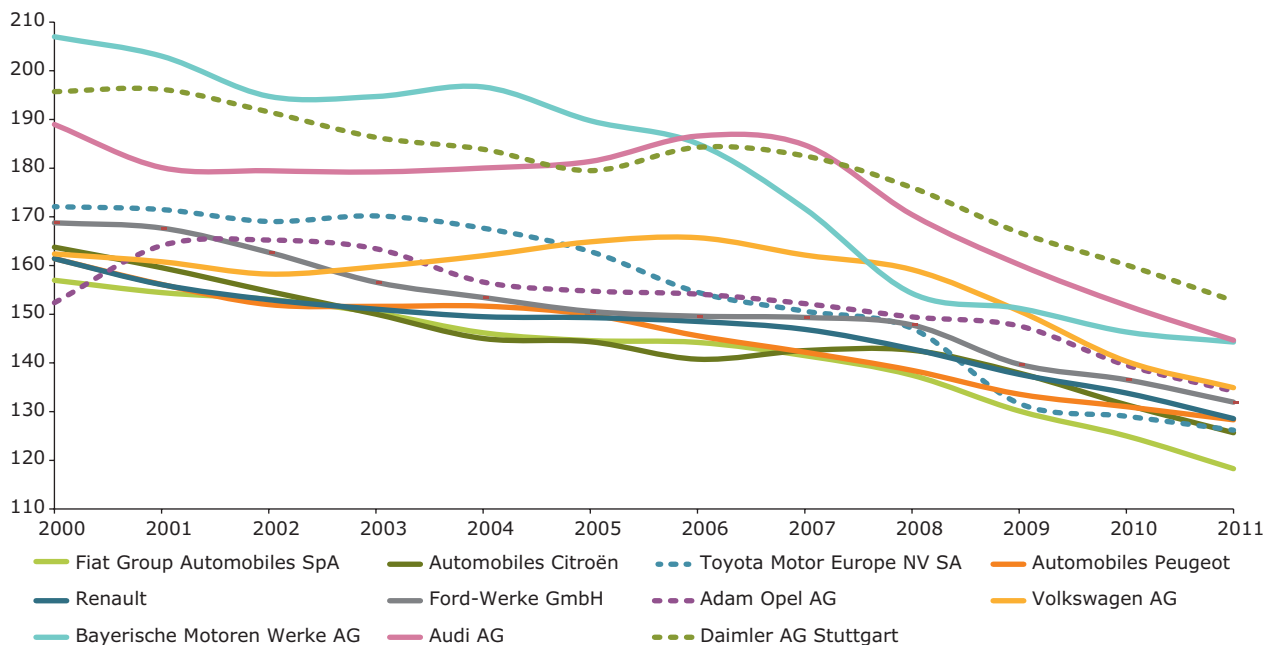
⁽³⁾ Diesel vehicles generally emit more of air pollutants per kilometre than their gasoline equivalents, particularly black carbon which has impacts on health and the climate, but also PM and NO_x.

**Table 2.1 Main specific emission statistics for the largest car manufacturers
(> 100 000 vehicle registrations per year)**

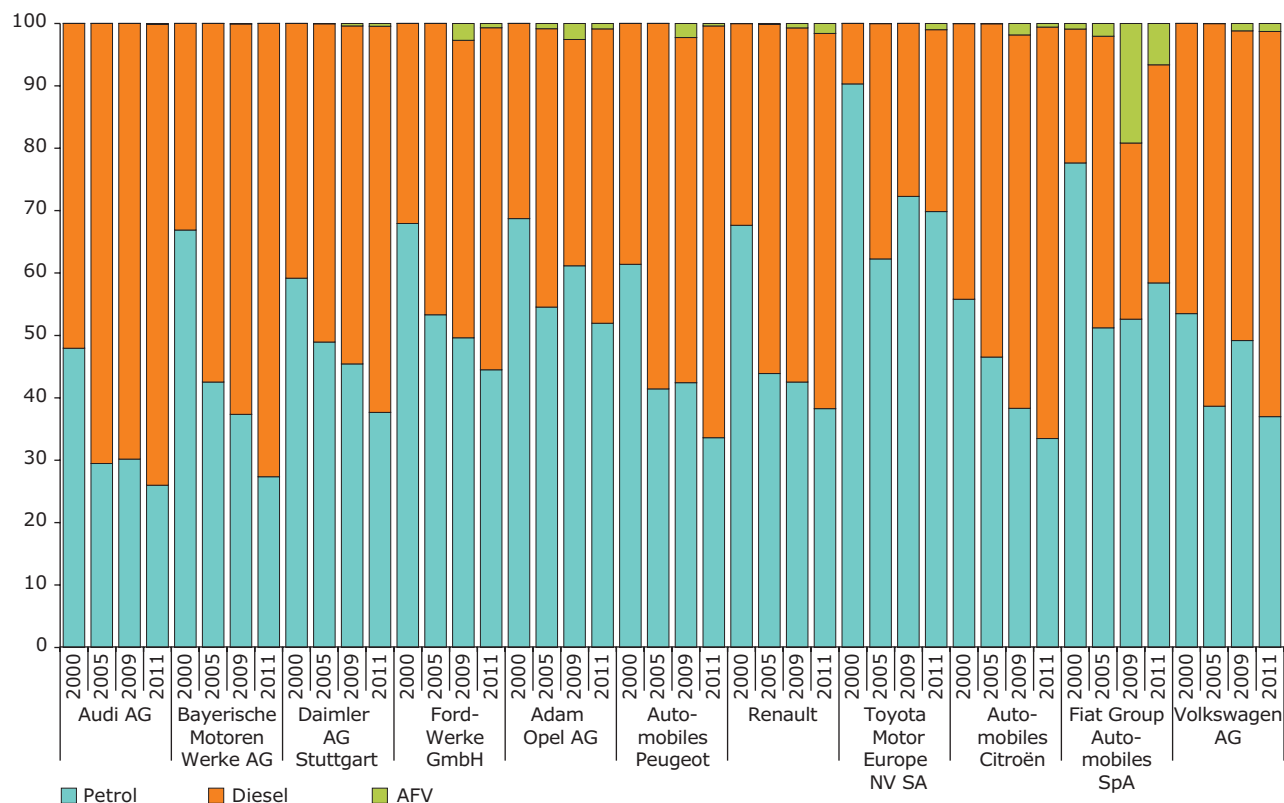
Manufacturer	Registrations *	Average mass (kg)	Average CO ₂ (g CO ₂ /km)		
			2011	2010	2009
Fiat Group Automobiles SpA	836 642	1 140	118	125	130
SEAT	293 265	1 289	125	131	140
Automobiles Citroën	742 086	1 320	126	131	138
Toyota Motor Europe NV SA	523 143	1 331	126	129	132
Automobiles Peugeot	871 476	1 358	128	131	134
Renault	1 006 021	1 293	129	134	138
Ford-Werke GmbH	1 004 863	1 324	132	137	140
Hyundai Motor Company	364 221	1 297	132	134	138
Adam Opel AG	952 340	1 430	134	140	148
Skoda Auto AS	448 821	1 316	135	139	148
Volkswagen AG	1 574 303	1 415	135	140	151
KIA Motors Corporation	279 483	1 353	137	143	146
GM Korea Company	156 787	1 320	142	144	146
Nissan International SA	443 514	1 375	142	147	154
Automobile Dacia SA	235 104	1 300	143	145	152
Bayerische Motoren Werke AG **	723 340	1 569	144	146	151
Audi AG	617 382	1 578	145	152	160
Mazda Motor Corporation	125 369	1 386	147	149	149
Volvo Car Corporation	225 600	1 701	151	157	173
Daimler AG Stuttgart	626 361	1 570	153	160	167

Note: * these are total number of registrations in EU27, not the registrations used for the calculation of the target and of the average emissions (See Annex 1).

** in 2009 BMW AG included both BMW AG and BMW BMGH.

Figure 2.1 Trends: (a) CO₂ specific emissions (g CO₂/km) and (b) fuel type for the larger manufacturers (> 500 000 vehicle registrations per year) (*)**a)**Average CO₂ emission (g/km)**b)**

%



Note: (*) Data for the time series 2001-2009 were gathered via the monitoring regulated by Decision 1753/2000/EC which was repealed by Regulation 443/2009 in 2009. These data do not include all Member States in all years. Manufacturers' names and groups may have changed. Moreover, due to changes in methodology and monitoring improvements, breaks in trends may occur. Please see <http://www.eea.europa.eu/publications/monitoring-co2-emissions-from-new>. AFV means alternative fuel vehicles (i.e. electric vehicles, natural gas fuel vehicles).

Table 2.2 presents data by manufacturer pool. The majority of the pools were already in place in 2011, while Toyota-Daihatsu Group, VW Group PC and Tata Motors Ltd, Jaguar Cars Ltd, Land Rover (TJL) will pool as from 2012. These pools are reported here because data registered in 2011 are compared with the 2012 target. For some pools, the difference between the average emissions of the pool members

is quite high. The smallest range is found in the Ford-Werke pool, where the average emission of the individual manufacturers varies between 114 g CO₂/km and 132 g CO₂/km — a difference of 18 g CO₂/km. By contrast, the difference between the manufacturers in the Volkswagen pool is more than 265 g CO₂/km.

Table 2.2 Main statistics for the manufacturers' official pools in 2011

Pool	Manufacturer	Registrations	Average emissions
Daimler AG	Daimler AG Stuttgart	626 361	153
	Mercedes-AMG GmbH, Affalterbach	1 525	308
	Daimler AG	627 886	153
Suzuki	Suzuki Motor Corporation	58 442	148
	Maruti Suzuki India Ltd	22 813	104
	Magyar Suzuki Corporation Ltd	96 175	128
	Suzuki	177 430	132
Ford Werke GMBH	Ford Motor Company	651	123
	Ford-Werke GmbH	1 004 863	132
	CNG Technik	126	114
	Ford Werke GMBH	1 005 640	132
	Mitsubishi Motors Corporation (MMC)	78 049	154
Mitsubishi Motors	Mitsubishi Motor Europe BV (MME)	19 275	120
	Mitsubishi Motors	97 324	147
Honda Motor Europe Ltd	Honda Automobile China CO	20 700	125
	Honda Automobile Thailand CO	203	151
	Honda Motor CO	80 206	142
	Honda of the UK Manufacturing	37 635	161
	Honda Turkiye AS	1 051	156
	Honda Motor Europe Ltd	139 795	145
Toyota-Daihatsu Group	Toyota Motor Europe NV SA	523 143	126
	Daihatsu Motor Co. Ltd	9 613	146
	Toyota-Daihatsu Group	532 756	127
VW Group PC	Audi AG	617 382	145
	Audi Hungaria Motor KFT	14 862	149
	Quattro GmbH	3 317	259
	Bentley Motors Ltd	1 287	390
	Automobili Lamborghini SpA	278	342
	SEAT	293 265	125
	Skoda Auto AS	448 821	135
	Volkswagen AG	1 574 303	135
	Dr.Ing.h.c.F. Porsche AG	37 472	222
	VW Group PC	2 990 987	137
Tata Motors Ltd, Jaguar Cars Ltd, Land Rover	Land Rover	68 254	211
	Jaguar Cars Ltd	22 052	189
	Tata Motors Limited	2 075	146
Tata Motors Ltd, Jaguar Cars Ltd, Land Rover		92 381	204

The average CO₂ emissions for small volume manufacturers, overall responsible for less than 10 000 vehicle registrations a year, were 205 g CO₂/km in 2011 (17 g CO₂/km less than in 2010). In total, about 46 000 vehicles were registered for this group of manufacturers in 2011. This corresponds to a very small percentage of the total number of registrations. In this group, four manufacturers produced only electric vehicles (Tesla, MIA, Micro-Vett and Think Global) and were responsible for 575 registrations in 2011.

The average CO₂ emissions for manufacturers registering more than 10 000 but less than 100 000 vehicles a year were 158 g CO₂/km. The variability in this group is quite high. As in 2010, the lowest average CO₂ emissions of a manufacturer in this group (Table 2.3) is 104 g CO₂/km (14 g CO₂/km

lower than the lowest average in the group of major manufacturers); the highest average CO₂ emissions of a manufacturer in this group is 222 g CO₂/km. This variability can be explained by the diverse vehicles segments included in the group (i.e. small cars, sport cars).

As in 2010, Maruti Suzuki India Ltd got, overall, the lowest CO₂ emission level (104 g CO₂/km), excluding electric vehicles manufacturers. The average weight of its fleet is the lowest among all the car manufacturers registering vehicles in Europe. Chevrolet Italia mainly produces LPG/NG cars, a factor that is likely to contribute to the low emission value of this manufacturer. Five manufacturers of this group, representing 25 % of the registrations in the group, were below 130 g CO₂/km.

Table 2.3 Main statistics for manufacturers registering 10 000–100 000 vehicles per year

Manufacturer	Registration	Average mass (kg)	Average CO ₂ (g CO ₂ /km)		
			2011	2010	2009
Maruti Suzuki India Ltd	22 813	934	104	104	104
Chevrolet Italia	11 751	1 092	113	118	122
Mitsubishi Motor Europe BV (MME)	19 275	1 046	120	127	*
Honda Automobile China CO	20 700	1 146	125	126	*
Magyar Suzuki Corporation Ltd	96 175	1 163	128	137	138
Honda Motor CO	80 206	1 372	142	144	*
Suzuki Motor Corporation	58 442	1 242	148	144	146
Audi Hungaria Motor KFT	14 862	1 444	149	*	*
BMW M GmbH	32 694	1 629	153	156	*
Mitsubishi Motors Corporation (MMC)	78 049	1 589	154	165	*
Saab Automobile AB	12 577	1 699	155	175	184
Honda of the UK Manufacturing	37 635	1 450	161	162	*
Fuji Heavy Industries Ltd	26 824	1 582	170	179	178
Jaguar Cars Ltd	22 052	1 900	189	197	196
Chrysler Group LLC	40 645	2 005	192	215	216
Land Rover	68 254	2 292	211	231	244
Dr.Ing.h.c.F. Porsche AG	37 472	1 873	222	239	256

Note: (*) Manufacturers not available in 2009 or 2010 submission.

3 Distance to the 2012 target

The distance of manufacturers to their specific emissions targets is calculated by taking into account the adjustments listed in chapter 1 (phase in, super-credits, E85 reductions and eco-innovations). There are no binding targets for 2011 but an indicative target is provided for this year giving manufacturers an indication of the effort required to meet the binding target in 2012.

Based on their average CO₂ emissions in 2011, 47 manufacturers, representing 95 % of the registrations in the EU, already achieve their specific emissions targets for the year 2012 (including derogations). Compared to 2010, 15 additional manufacturers were able to reduce their average emissions level below their target.

Figure 3.1 presents the distance-to-target curve for the 20 largest manufacturers. In 2010, 14 of the 20 larger manufacturers achieved the 2012 target set by the regulation. In 2011, 18 out of 20 achieved it.

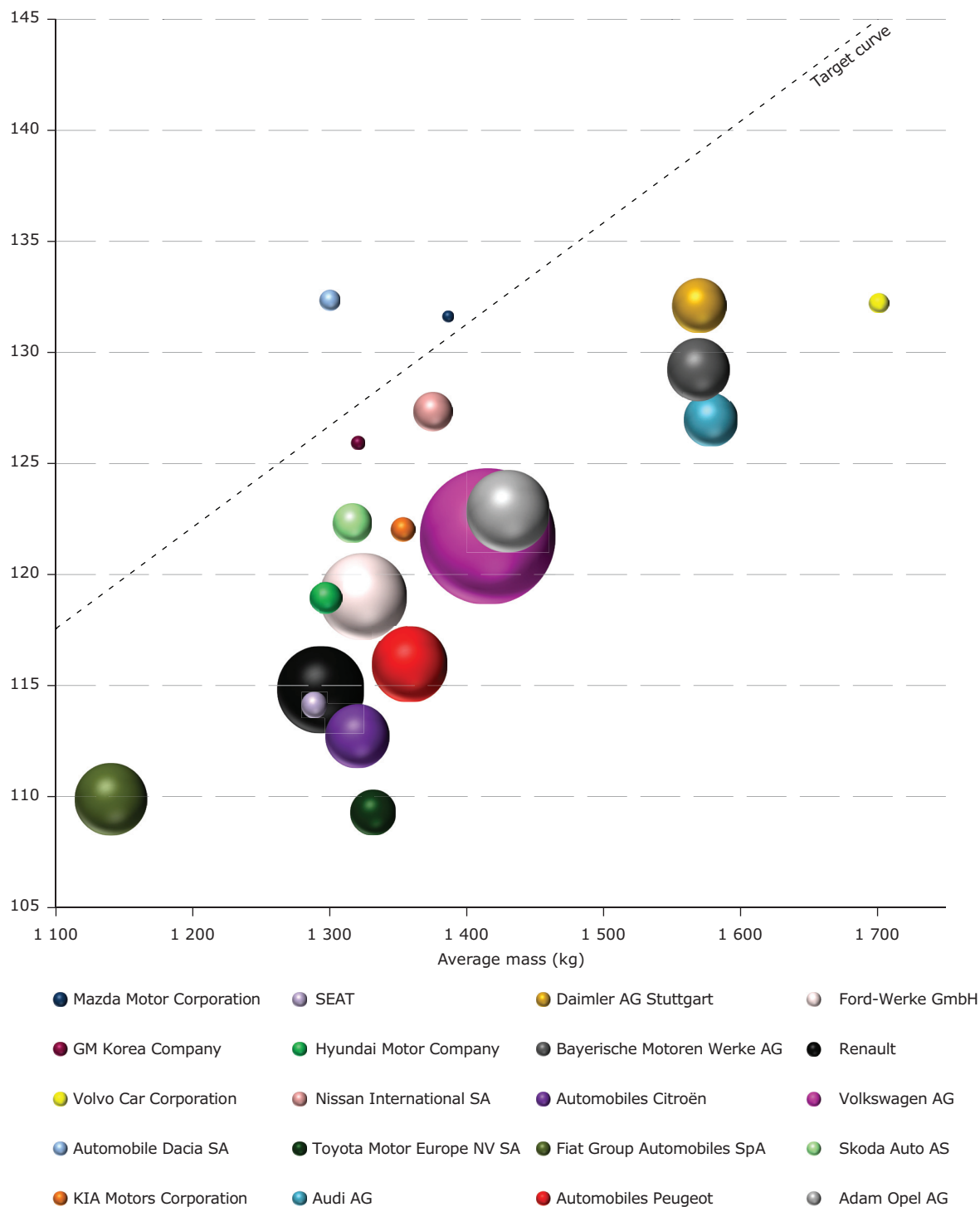
As explained in Chapter 1, the limit value curve implies that heavier cars are allowed higher emissions than lighter cars. As a result, the specific CO₂ emission limits of this group range from 119 to 145 g CO₂/km.

The majority of the manufacturers above the target curves are very close to meeting their targets. Dacia, for example, exceeds its target by 5.7 g CO₂/km; while Mazda exceeds by less than 1 g CO₂/km. Compared to 2010, Nissan, Skoda, Daimler AG and GM Korea (last year named GM Daewoo) were able to improve their performance and decreased their emissions levels below their targets. The data presented in Figure 3.1 are set out in Annex 1.

The distance to target for pools of manufacturers is presented in Table 3.1. In 2011, all the pools are respecting their 2012 specific emissions' targets.

Figure 3.1 Distance to 2012 target by individual manufacturers in 2011 (only manufacturers registering > 100 000 vehicles in Europe)

Average CO₂ emissions (g CO₂/km)



Note: The size of the bubble is proportional to the number of vehicles registered in Europe.

Table 3.1 Distance to target for the pools in 2011

Pool	Manufacturer	Average emissions (g CO₂/km)	Target (g CO₂/km)	Distance to target (g CO₂/km)
	Daimler AG Stuttgart	132	139	- 6.9
	Mercedes-AMG GmbH, Affalterbach	308	145	163
Daimler AG		132	139	- 6.9
	Suzuki Motor Corporation	130	124	5.7
	Maruti Suzuki India Ltd	103	110	- 7.0
	Magyar Suzuki Corporation Ltd	118	120	- 2.0
Suzuki		116	120	- 4.1
	Ford Motor Company	117	121	- 3.8
	Ford-Werke GmbH	119	128	- 8.8
	CNG Technik	114	118	- 4.1
Ford Werke GMBH		119	128	- 8.8
	Mitsubishi Motors Corporation (MMC)	128	140	- 11.5
	Mitsubishi Motor Europe BV (MME)	117	115	2.4
Mitsubishi Motors		124	135	- 11.2
	Honda Automobile China CO	124	120	4.3
	Honda Automobile Thailand CO	146	121	25.4
	Honda Motor CO	123	130	- 6.6
	Honda of the UK Manufacturing	146	134	12.6
	Honda Turkiye AS	152	126	26.2
Honda Motor Europe Ltd		127	129	- 2.4
	Toyota Motor Europe NV SA	109	128	- 18.8
	Daihatsu Motor Co. Ltd	129	118	10.4
Toyota-Daihatsu Group		109	128	- 18.5
	Audi AG	127	139	- 12.4
	Audi Hungaria Motor KFT	137	133	3.5
	Quattro GmbH	232	149	82.7
	Bentley Motors Ltd	385	182	204
	Automobili Lamborghini SpA	322	142	180
	SEAT	114	126	- 12.1
	Skoda Auto AS	122	127	- 5.1
	Volkswagen AG	122	132	- 10.2
	Dr.Ing.h.c.F. Porsche AG	203	153	50.1
VW Group PC		122	133	- 10.6
	Land Rover	189	178	10.6
	Jaguar Cars Ltd	170	178	- 8.4
	Tata Motors Limited	132	178	- 45.5
Tata Motors Ltd, Jaguar Cars Ltd, Land Rover		178	178	- 0.4

4 Distance to the 2012–2015 targets

The distance of the largest manufacturers to their targets is calculated based on the 2011 CO₂ emission data.

The 2012–2015 progression towards the target is calculated on the basis of the adjustments reported in Table 1.1. A different set of adjustments is applied in every years of this period. For example, for the year 2015, the calculation includes 100 % of the vehicle fleet and manufacturers receive super-credits in the order of 1.5 cars for vehicles emitting less than 50 g CO₂/km (Figure 4.1). Manufacturers have three more years to further reduce CO₂ emissions and ensure compliance with their targets in 2015. If car manufacturers continue to reduce emissions as in past years they will meet the 2015 targets.

Already in 2011, among the 20 biggest manufacturers:

- five manufacturers (Toyota, Citroën, Fiat, Peugeot and Seat) are compliant with their 2015 targets;

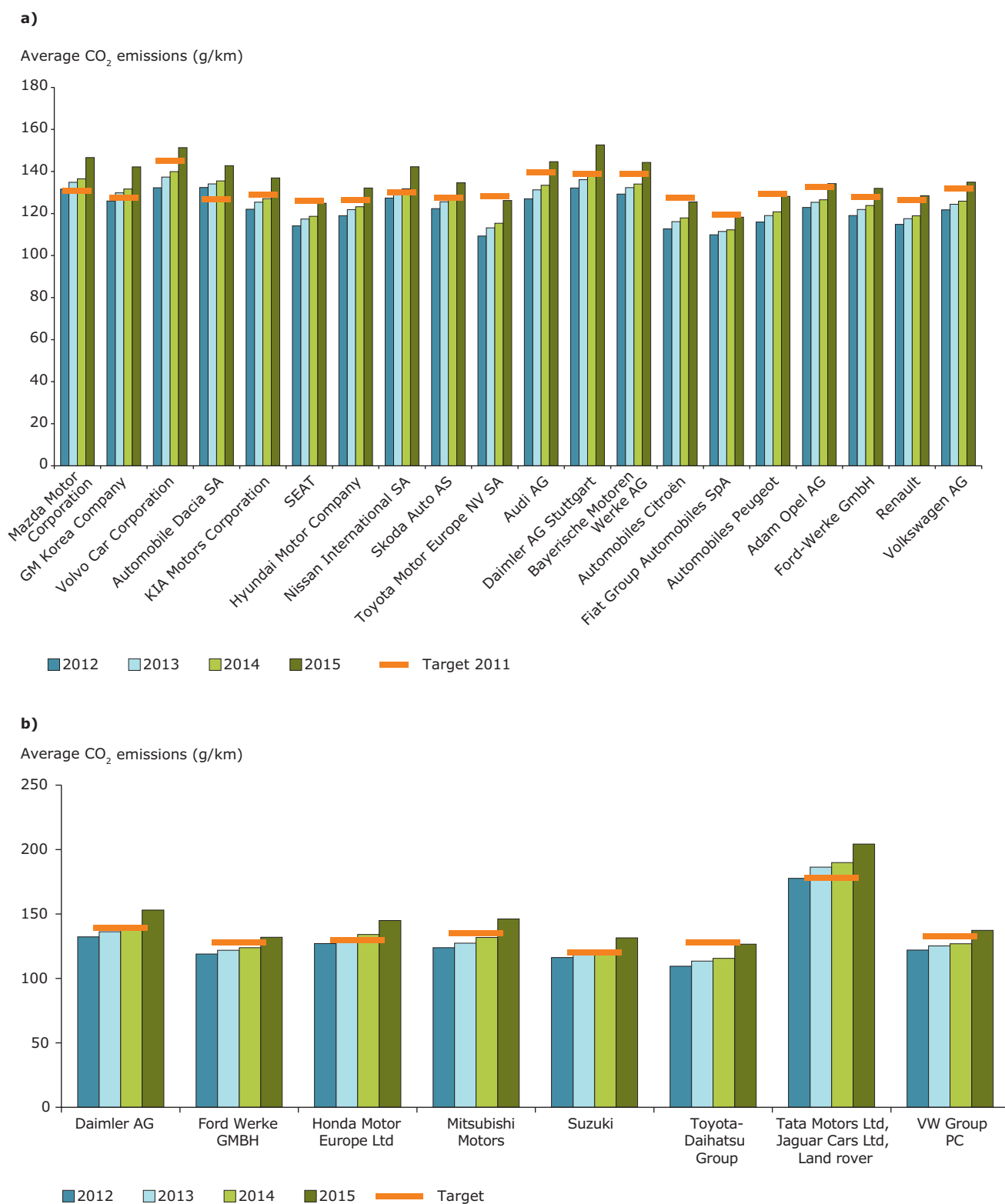
- sixteen manufacturers are compliant with their 2014 targets;
- seventeen manufacturers are compliant with their 2013 targets.

In order to be compliant with the 2015 targets, four manufacturers have to reduce the average emissions of their fleets by less than 5 g CO₂/km over the next five years. Only five manufacturers have to reduce the average emissions by more than 10 g CO₂/km over the same period.

It should be noted that further pooling agreements between manufacturers exceeding their targets and those with a positive distance to target can also be expected which may change these estimates further.

The complete data presented in Figure 4.1 (by manufacturers and by pools) are set out in Annex 1.

Figure 4.1 Distance to 2012–2015 targets by manufacturers (a) and by pools (b) in 2011 (only manufacturers registering > 100 000 vehicles in Europe)



Note: Targets are calculated on the basis of 2011 data.

5 Excess emission premiums

If a manufacturer's or pool's average specific CO₂ emissions exceed the specific average target, Regulation (EC) No 443/2009 requires the payment of an excess emissions premium. As there are no binding targets for 2011 no premium will be imposed this year. The excess emissions premium will, if necessary, be imposed from 2013 (based on data for new registrations in 2012). The excess emissions premium for failing to meet the specific CO₂ emissions target is calculated by multiplying the following three elements:

- the distance to the emissions target in a given year (in g CO₂/km);
- the number of vehicles registered by the manufacturer during that year;
- the premium level as described in Table 5.1.

The premium amounts to EUR 5 for the first g CO₂/km of exceedance, EUR 15 for the second g CO₂/km, EUR 25 for the third g CO₂/km, and EUR 95 for each subsequent g CO₂/km. A higher distance to the target therefore implies a higher excess premium per g CO₂/km emitted (Table 5.1).

For example, if a manufacturer registers 100 000 vehicles in the EU, the formula to be used for calculating the excess emissions premium varies depending on the distance to the target as follows:

- if the distance to the target is 0.5 g CO₂/km, the first formula in Table 5.1 applies and the excess emission premium =
 $0.5 * 5 * 100\,000 = \text{EUR } 250\,000$;
- if the distance to the target is 1.5 g CO₂/km, the second formula in Table 5.1 applies and the excess emission premium =
 $(1 * 5 + (1.5-1) * 15) * 100\,000 = \text{EUR } 1\,250\,000$;
- if the distance to the target is 2.5 g CO₂/km, the third formula in Table 5.1 applies and the excess emission premium =
 $(1 * 5 + 1 * 15 + (2.5-2) * 25) * 100\,000 = \text{EUR } 3\,250\,000$;
- if the distance to the target is 3.5 g CO₂/km, the fourth formula in Table 5.1 applies and the excess emission premium =
 $(1 * 5 + 1 * 15 + 1 * 25 + (3.5-3) * 95) * 100\,000 = \text{EUR } 9\,250\,000$.

Table 5.1 Coefficients to be used in the formula for calculating excess emissions premium

Excess emission (g CO ₂ /km)	Fine (EUR)				Number of vehicles	Formula for calculating excess emission premium (EUR)
	5	15	25	95		
0-1	(EE)	-	-	-	NV	((EE) * 5)*NV
1-2	1	(EE - 1)	-	-	NV	(1 * 5 + (EE-1) * 15) * NV
2-3	1	1	(EE - 2)	-	NV	(1 * 5 + 1 * 15 + (EE-2) * 25) * NV
> 3	1	1	1	(EE - 3)	NV	(1 * 5 + 1 * 15 + 1 * 25 + (EE-3) * 95) * NV

Note: 'EE' is the distance to target or excess emission; 'NV' is the number of vehicles registered.

Annex 1

The table below presents data used in calculating the CO₂ emission performance of car manufacturers in 2011. The number of registrations represents the number of vehicles having both a mass and an emission value. Average emissions and distance

to target are calculated using the calculation rules for 2012. The parameters used in calculating manufacturer performance for 2012 are set out in Table 1.1.

Manufacturer name	Pools and derogations	Number of registrations	Average CO ₂ (65 %) corrected	Specific emission target	Distance to target
Alpina Burkard Bovensiepen GmbH + Co. KG		572	177.439	147.733	29.706
Aston Martin Lagonda Ltd	D	1 306	293.478	320.000	– 26.522
Audi AG	P8	617 058	126.995	139.414	– 12.419
Audi Hungaria Motor KFT	P8	14 853	136.758	133.273	3.485
Automobiles Citroën		741 890	112.738	127.624	– 14.886
Automobiles Dangel		45	145.103	137.974	7.129
Automobiles Peugeot		871 307	115.971	129.369	– 13.398
Avtovaz JSC		2 877	206.591	125.487	81.104
Bayerische Motoren Werke AG		723 001	129.243	139.011	– 9.768
Bentley Motors Ltd	P8	1 281	385.470	181.852	203.618
BMW M GmbH		32 688	128.168	141.763	– 13.595
Caterham Cars Limited	D	146	164.936	210.000	– 45.064
Chongqing Lifan Passenger Vehicle CO Ltd		41	174.000	123.282	50.718
Chevrolet Italia		11 747	110.522	117.194	– 6.672
Chrysler Group LLC		40 418	172.738	158.926	13.812
CNG Technik	P1	126	114.000	118.073	– 4.073
Automobile Dacia SA		235 036	132.368	126.693	5.675
Daihatsu Motor Co. Ltd	P7	9 603	128.506	118.136	10.370
Daimler AG Stuttgart	P2	626 079	132.125	139.031	– 6.906
Dr Motor Company SRL		2 783	121.075	118.756	2.319
Ferrari	D	2 318	299.849	303.000	– 3.151
Ford Motor Company	P1	651	117.104	120.917	– 3.813
Fiat Group Automobiles SpA		836 642	109.885	119.406	– 9.521
Ford-Werke GmbH	P1	1 004 863	119.012	127.825	– 8.813
Fuji Heavy Industries Ltd	ND	26 702	158.145	164.616	– 6.471
General Motors Company		958	224.111	153.828	70.283
GM Korea Company		156 775	125.945	127.643	– 1.698
GM Italia SRL		1 497	113.238	121.524	– 8.286
Great Wall Motor Company Limited	D	1 734	219.029	195.000	24.029

Manufacturer name	Pools and derogations	Number of registrations	Average CO ₂ (65 %) corrected	Specific emission target	Distance to target
Honda Automobile China CO	P3	20 699	123.950	119.659	4.291
Honda Automobile Thailand CO	P3	203	146.221	120.814	25.407
Honda Motor CO	P3	80 194	123.371	130.019	- 6.648
Honda of the UK Manufacturing	P3	37 627	146.211	133.571	12.640
Honda Turkiye AS	P3	1 051	151.798	125.595	26.203
Hyundai Motor Company		363 165	118.966	126.578	- 7.612
Iveco SpA		51	213.636	179.988	33.648
Jaguar Cars Ltd	ND/P6	21 980	169.666	178.025	- 8.359
KIA Motors Corporation		279 401	122.048	129.147	- 7.099
KTM-Sportmotorcycle AG	D	31	181.700	200.000	- 18.300
Automobili Lamborghini SpA	P8	270	322.109	141.622	180.487
Land Rover	ND/P6	68 080	188.659	178.025	10.634
Lotus Cars Limited	D	522	179.209	280.000	- 100.791
Magyar Suzuki Corporation Ltd	P5	96 175	118.469	120.435	- 1.966
Mahindra & Mahindra Ltd	D	12	236.000	205.000	31.000
Maruti Suzuki India Ltd	P5	22 813	102.997	109.967	- 6.970
Maserati SpA		1 330	351.103	158.453	192.650
Mazda Motor Corporation		125 367	131.622	130.645	0.977
McLaren Automotive Ltd	D	76	279.000	285.000	- 6.000
Mercedes-AMG GmbH, Affalterbach	P2	1 507	307.578	145.071	162.507
MG Motor UK Limited	D	426	183.156	184.000	- 0.844
MIA Electric SAS		249	0.000	108.388	- 108.388
Micro-Vett SpA		4	0.000	129.772	- 129.772
Mitsubishi Motors Corporation (MMC)	P4	78 039	128.395	139.904	- 11.509
Mitsubishi Motor Europe BV (MME)	P4	19 270	117.472	115.081	2.391
Morgan Motor Co. Ltd	D	452	155.382	180.000	- 24.618
Nissan International SA		443 400	127.348	130.153	- 2.805
O.M.C.I. SRL		51	156.061	119.537	36.524
Adam Opel AG		952 117	122.860	132.649	- 9.789
OSV — Opel Special Vehicles GmbH		2	133.000	136.581	- 3.581
Perodua Manufacturing Sdn Bhd		526	136.941	114.004	22.937
PGO Automobiles		66	184.738	113.598	71.140
Dr.Ing.h.c.F. Porsche AG	P8	37 201	202.993	152.904	50.089
Potenza Sports Cars		22	178.000	99.975	78.025
Perusahaan Otomobil Nasional Sdn Bhd	D	442	144.780	185.000	- 40.220
Quattro GmbH	P8	3 307	232.028	149.311	82.717
Renault		1 004 850	114.816	126.391	- 11.575
Rolls-Royce Motors Cars Ltd		409	316.238	182.073	134.165

Manufacturer name	Pools and derogations	Number of registrations	Average CO ₂ (65 %) corrected	Specific emission target	Distance to target
Saab Automobile AB		12 570	134.632	144.930	– 10.298
Santana Motor SA		22	217.929	149.065	68.864
Seat	P8	293 241	114.132	126.196	– 12.064
Secma		43	131.000	97.370	33.630
Shanghai Maple Automobile Co Ltd		15	212.000	154.130	57.870
Shijiazhuang Shuanghuan Automobile Company		51	269.242	153.977	115.265
Skoda Auto AS	P8	448 804	122.323	127.444	– 5.121
Sovab		9	211.800	163.955	47.845
Ssangyong Motor Company	D	6 258	165.950	180.000	– 14.050
Suzuki Motor Corporation	P5	58 442	129.792	124.059	5.733
Tata Motors Limited	ND/P6	2 075	132.499	178.025	– 45.526
Tesla Motors Ltd		76	0.000	128.354	– 128.354
Think		224	0.000	119.830	– 119.830
Toyota Motor Europe NV SA	P7	522 865	109.293	128.141	– 18.848
Volkswagen AG	P8	1 574 053	121.739	131.971	– 10.232
Volvo Car Corporation		225 326	132.245	145.021	– 12.776
Wiesmann GmbH	D	5	270.333	274.000	– 3.667

Notes: The Commission's Implementing Decision confirming the 2011 CO₂ emissions assigns some manufacturers an uncertainty adjustment for 2011 data which modifies the distance to their targets. Because the uncertainty of the dataset in 2012 and 2015 is not known, the uncertainty adjustment was not applied in the table above. A detailed description of the uncertainty calculation is presented with the Commission Implementing Decision. The range of uncertainty is below 1 g CO₂/km.

'D' indicates that a derogation for small-volume manufacturers has been granted in accordance with the Commission Implementing Decision.

'ND' indicates that a derogation for niche manufacturers has been granted in accordance with Commission Implementing Decision.

'P' indicates that the manufacturer is member of a pool in accordance with Article 7 of Regulation (EC) No 443/2009.

European Environment Agency
Kongens Nytorv 6
1050 Copenhagen K
Denmark

Tel.: +45 33 36 71 00
Fax: +45 33 36 71 99

Web: eea.europa.eu
Enquiries: eea.europa.eu/enquiries

