

Context

Cars are responsible for an eighth¹ of Europe’s carbon dioxide (CO₂) emissions. The amount of CO₂ produced is directly related to the amount of fuel the vehicle consumes – lower carbon vehicles are therefore more fuel efficient and cheaper to run. The EU set legally-binding targets for new cars to emit on average 130 grams of CO₂ per kilometre (g/km) by 2015 and 95g/km by 2021. This briefing, first part of T&E’s ‘How clean are Europe’s cars 2014’, analyses the official data from the European Environment Agency² on progress towards these targets made by carmakers in 2013.

How are companies performing overall?

In 2013, the average CO₂ emissions from new cars (as measured by the official test) were 127g/km, a 4% reduction on 2012. On average, the 2015 target was therefore met two years ahead of schedule. This contrasts with carmakers’ claims at the time the regulation was being negotiated that, “A vehicle-related target of 130 grams CO₂/km, as proposed by the Commission, is not feasible.”³

Since the regulation was adopted in 2008, the average rate of progress has been 3.7%pa compared to 1.4%pa during the period 2000-8 in which carmakers failed to deliver on their Voluntary Commitment. Without the introduction of the regulation, emissions would not have fallen to the 2013 level until 2021.⁴

How did individual companies perform in 2013?

The performance of individual companies in 2013 is shown below:

2013 CO ₂ Ranking	Average CO ₂ 2013	Average CO ₂ 2012	Improvement Ranking	2012-13 % change
1 Renault	114.9	124.6	1 Volvo	-8.0%
2 Peugeot-Citroën	115.7	122.0	2 Renault	-7.8%
3 Toyota	116.8	122.0	3 Ford	-5.3%
4 Fiat	118.8	118.2	4 Mazda	-5.3%
5 Ford	121.8	128.7	5 Peugeot-Citroën	-5.2%
6 Suzuki	127.2	130.7	6 Nissan	-4.7%
7 Volkswagen	128.9	134.8	7 Daimler	-4.6%
8 Hyundai	129.8	131.0	8 Volkswagen	-4.4%
9 Volvo	130.8	142.1	9 Toyota	-4.3%
10 Nissan	130.9	137.3	10 Honda	-3.3%
11 General Motors	132.8	134.6	11 BMW	-3.0%
12 Mazda	134.3	141.8	12 Suzuki	-2.7%
13 BMW	134.4	138.6	13 General Motors	-1.3%
14 Daimler	136.6	143.2	14 Hyundai	-0.9%
15 Honda	138.0	142.7	15 Fiat	0.5%
All Manufacturers	127.0	132.2	All Manufacturers	-4.0%

¹ European Environment Agency, 2011, Transport sector contribution to total GHG emissions, 2009 (EEA-32)

² <http://www.eea.europa.eu/data-and-maps/data/co2-cars-emission-6/monitoring-of-co2-emissions-from-1>

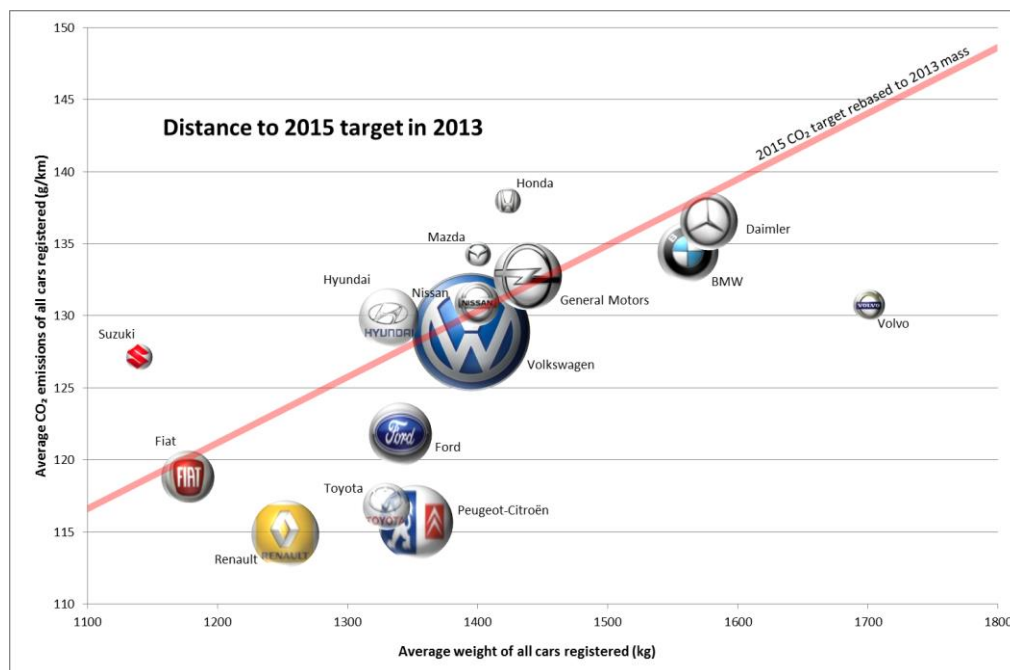
³ http://www.transportenvironment.org/sites/te/files/publications/A4_myths_reality.pdf

⁴ Assuming had carmakers continued at the average rate of improvement achieved during the Voluntary Agreement (1.4%pa)

In 2013, Renault displaced Fiat as the manufacturer of the lowest carbon, most fuel efficient vehicles. Fiat's emissions in 2013 increased by 0.5% whilst those of Renault reduced by 7.8%. The biggest annual reduction was achieved by Volvo (8%).

How are companies progressing towards their 2015 targets?

All major brands are making good progress towards meeting their 2015 target. This is expected since the target was set at a level that was easily achievable. Carmakers' targets vary depending upon the average size (mass) of the cars sold. The target line for each carmaker is shown in the figure. The size of the logo reflects the relative size of the number of vehicles sold in 2013. Companies below the line have met their target and only 6 major brands have not achieved the required 2015 target level: General Motors, Honda, Hyundai, Mazda, Nissan and Suzuki.



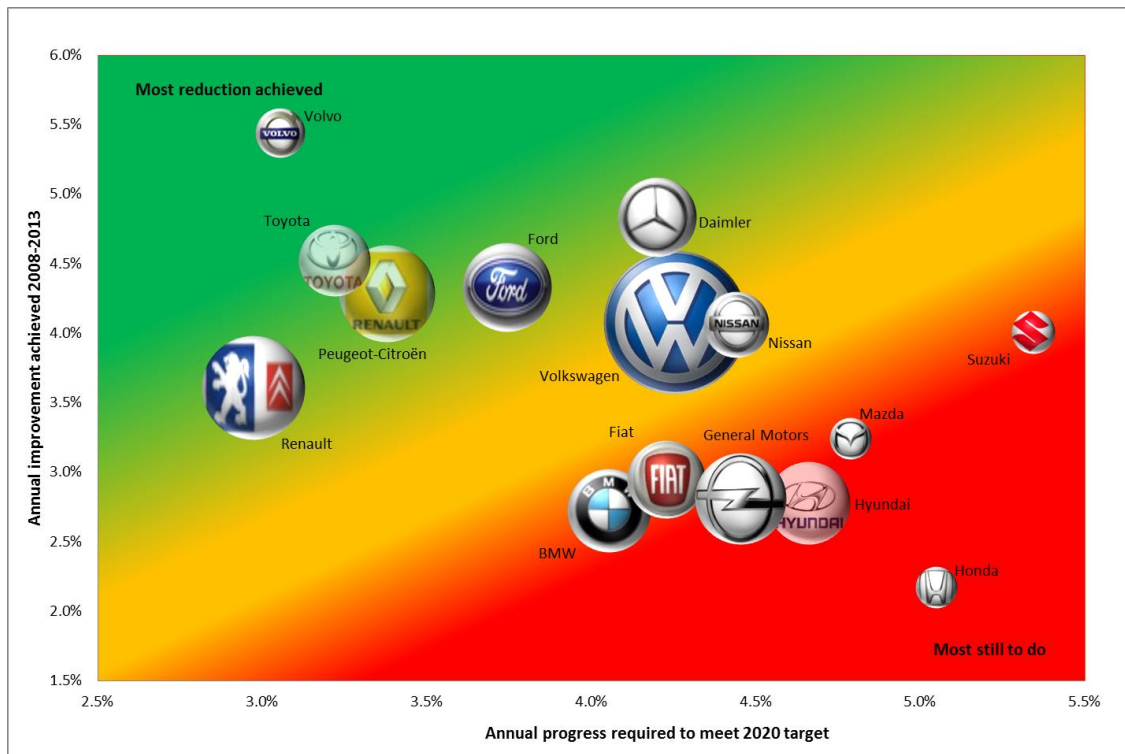
The 2015 regulation is phased-in such that 75% of vehicles must achieve the 130g/km target for carmakers to avoid penalties on their 2013 results. No major manufacturers failed to achieve their 2013 target.

How are companies progressing towards their 2021 targets?

The 95g/km 2021 target is more challenging for carmakers and the figure overpage illustrates the relative effort carmakers still need to make. It shows the average progress made by each carmaker over the last 6 years compared to the average annual rate of progress needed to achieve the 2021 target level. Brands in the top left corner have made the most progress, so they have to make relatively less progress in the future. Those brands in the bottom right have to make much more progress to meet their targets in the future than they have to date. The results are consistent with those reported by T&E in 2013.

Based upon their average annual rate of progress over the last 6 years, companies would reach their 2021 targets as follows:

- Early – Volvo, Toyota (2018); Peugeot-Citroen, Renault, Ford and Daimler (2020);
- On time – VW and Nissan (2021)
- Late – Fiat (2022); Suzuki (2023); BMW, General Motors (2024); Hyundai, Mazda (2025); Honda (2027).



Past performance is no guarantee of future performance and the level of fines for failing to meet the target (€95 /g/km /vehicle) is a powerful incentive for carmakers to ultimately meet their goals. Carmakers also operate in pools so individual brands will be combined; and, the figures also not include flexibilities in the regulation (such as supercredits) and can therefore be considered slightly conservative. The analysis however clearly shows that some carmakers need to significantly accelerate their rate of progress compared to past performance to meet their targets.

Differing levels of progress by different brands suggests some company strategies are currently more effective than others in moving towards their targets.

Carmakers targets vary depending upon the size (mass) of the average vehicle sold, to ensure there is no unfair burden upon any company or market sector. The analysis also shows that some contrasts:

- Premium manufacturers are doing well (Volvo and Daimler) and one more poorly (BMW)
- Mainstream manufacturers are doing well (Renault, Ford and Peugeot-Citroën) and poorly (Honda).

Most European brands are performing relatively well compared to US (General Motors) and Japanese (Honda, Mazda and Hyundai) competitors. With fuel economy increasingly important as a factor in car buying globally, most EU carmakers seem to be relatively well-positioned vis-à-vis their foreign competitors, with the exception of Fiat and BMW, who have made relatively little progress since the regulation was proposed in 2008.

Is the data a reliable indication of real-world emissions?

No. In 2013, a T&E report highlighted the discrepancy between the fuel economy suggested by official test results and the actual fuel consumption that most drivers experience on the road. Mind the Gap⁵ documented a substantial and growing body of evidence that the gap between real and test results has grown to 23% and is increasing over time. It highlighted the main reasons being:

⁵ Mind the Gap! Why official car fuel economy figures don't match up to reality, March 2013

- The test itself is not rigorous, and as the pressure to cut CO₂ emissions to meet the regulation becomes more intense, manufacturers appear to be finding new ways to use flexibilities in the rules to get lower test results
- Some new technologies, such as start/stop systems, give very favourable results on the current test cycle, but these apparent benefits are not fully realised in typical real-world driving
- An increasingly wide range of electrical and electronic equipment – most obviously air-conditioning systems – make additional demands on a car's battery and alternator and indirectly use extra fuel, but this is not measured in the current test procedure. In 2013, the ICCT published further data⁶ which showed in 2001 the excess of real-world average fuel consumption over the test results was in the range of 4 to 10%. Since then, however, the gap has widened for all of the manufacturers, such that in 2011 it was at least 15% in all cases, and in excess of 25% for BMW, Daimler and General Motors.

The unreliable test data means that the improvement in fuel economy reported is exaggerated: car buyers are not getting the full benefit of the fuel economy that is advertised and the greenhouse gas reductions that were expected to result from the Regulation are not being fully realised.

The Commission plans to introduce a new test in 2017. It is essential that EU Member States support an early introduction to stop the abuse of the current system and misleading information for customers.

Are there any targets for the post 2020 period?

The European Parliament supported a target range for 2025 of 68-78g/km that the European Commission has a requirement to analyse. In April, Climate Action Commissioner Hedegaard told the European Parliament it would consult on a 2025 target in May. However, the consultation won't proceed having reportedly been blocked by Commission President Barosso who was concerned that discussing future car targets will upset large carmaking countries, notably Germany.. If carmakers continued to reduce emissions at the same rate as they are currently doing (4%pa), average emissions will have declined to 77g/km by 2025. Business as usual will therefore deliver the Parliament target.

How have T&E compiled the data?

The data is based on sales and CO₂ information in the European Environment Agency (EEA) database that forms the basis of the official European Commission 'monitoring mechanism' on cars and CO₂. The data is provisional and is presently being checked by carmakers. However, in 2012 the final data was virtually identical to the provisional data for most of the major manufacturers. Provisional data is therefore considered to be highly representative of actual performance. The data presented does not take account of flexibilities in the regulation such as additional allowances for selling electric cars (supercredits) or off-cycle credits (eco-innovations) or credits for biofuels. The actual company figures are therefore slightly conservative.

Further information?

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⁶ *From laboratory to road: a comparison of official and 'real-world' fuel consumption and CO₂ values for cars in Europe and the United States*, ICCT, May 2013