

Fuel efficiency improvements of new cars in Europe slowed in 2016

Average CO₂ emissions of a new car sold in 2016 were 118.1 g CO₂/km. This represents a decrease of 1.4 g CO₂/km (1.2%), compared to the previous year, according to [provisional data](#). This reduction is the smallest annual improvement recorded since 2006 for new cars sold in the EU.

Official emissions have, however, decreased by more than 22 g CO₂/km or 16% since 2010, when an updated monitoring system started under the current EU legislation. The EU remains well below its target of 130 g CO₂/km set for 2015, but it is clear that, compared to 2016, annual improvements in vehicle efficiency need to significantly increase in each of the coming five years in order to achieve the second average emissions target of 95 g CO₂/km by 2021.

Key facts

- With an average of 118.1 g CO₂/km, new cars sold in 2016 emitted more than 23 g CO₂/km above the 2021 target, according to the provisional emissions reported by Member States.
- A total of 14.7 million new passenger cars were registered, an increase of almost 7% compared to 2015. Registrations increased in all EU Member States except in the Czech Republic, the Netherlands and Slovenia.
- For the second successive year, the share of diesel vehicle sales declined and in 2016 fell below 50% of new sales – the lowest share of new sales since 2009 according to the official statistics. While the overall share of diesel vehicle sales fell, absolute sales still increased by more than 192 300 vehicles compared to 2016, according to provisional data. However, diesel cars still remain the most sold vehicle type in the EU representing 49.4% of new sales, followed by petrol vehicles (47%), and alternatively fuelled vehicles (3.3%, including electric vehicles).
- Sales of battery electric vehicles continue to increase, but at a significantly slower rate than in earlier years. Around 64 000 pure battery-electric vehicles were registered in 2016, a 13% increase compared to sales of 57 000 in 2015. The largest number of registrations were recorded in France (22 689 vehicles), Germany (11 472 vehicles) and the UK (10 268 vehicles).
- Electric and plug-in hybrid vehicles together still remain a small fraction of total sales, accounting for 1.1% of all new cars sold in the EU. Combined sales of these vehicle types fell by around 3 200 vehicles compared to 2015 when they comprised 1.2% of registrations.
- The two countries that in 2015 had the highest share of plug-in hybrid and battery-electric vehicle sales, the Netherlands and Denmark, both saw significant sales decreases in 2016 of these vehicle types. For example, in the Netherlands, sales fell from 10% of national car sales in 2015 to 6%. Changes to the level of subsidies and tax incentives available for new vehicle owners changed in 2016 in both countries,

directly contributing to lower shares.

- The mass of a vehicle is a key factor affecting emissions, as heavier vehicles tend to emit more CO₂/km. In comparison with 2015, the average mass of new cars sold in 2016 in the EU increased slightly to reach 1 388 kg. The increase affected the average mass of petrol vehicles (by 1.5%) in particular, which in turn resulted in smaller decrease of average emissions of these vehicles and, consequently, of new passenger car fleet in 2016. On average, the heaviest cars were sold in Sweden (1 516 kg), Austria and Luxembourg (1 497 kg), whereas Maltese, Greek and Danish buyers typically purchased lighter cars (1 210, 1 253 and 1 265 kg respectively). Nevertheless, the average diesel vehicle sold was 302 kg heavier than the average petrol vehicle.
- Overall, average CO₂/km emissions decreased in all countries in 2016, except in the Netherlands, where emissions increased by almost 5% to 106 g CO₂/km. However, the Netherlands, together with Portugal (105 g CO₂/km), Denmark and Greece (both 106 g CO₂/km) remains among the countries having the most fuel-efficient new cars sold. The least fuel-efficient cars continue to be bought in Estonia (134 g CO₂/km).
- The largest improvements in vehicle fuel efficiencies, compared to the previous year, occurred in Latvia (-8.2 g CO₂/km) and in the Czech Republic (-5.2 g CO₂/km). In both countries, a trend towards buying lighter, smaller vehicles was directly reflected in the improved average vehicle fuel efficiencies.

EEA activities

The EEA collects and makes available [data on new passenger vehicles registered in Europe](#), in accordance with [EU Regulation \(EC\) No 443/2009](#). The data reported by all Member States is designed to allow an evaluation of the average fuel efficiency of the new vehicle fleet, and includes information on a range of parameters including registration statistics, CO₂ emissions, and vehicle weight.

It has not yet been confirmed whether different manufacturers have met their own specific annual target for 2016, based on the average weight of the cars they sold. The EEA will publish the final data and the European Commission will confirm manufacturers' individual performances in the autumn.

Testing vehicle emissions

Member States report new vehicles' CO₂ emission levels, measured under standardised laboratory conditions, following the requirements of the New European Driving Cycle (NEDC) test procedure. This procedure is designed to allow a comparison of emissions for different manufacturers. However, in recent years it has been widely recognised that the NEDC test procedure, dating from the 1970s, is out-dated and does not necessarily represent real-world driving conditions and emissions due inter alia to a number of flexibilities that have allowed vehicle manufacturers to optimise the conditions under which their vehicles are tested. The EEA has recently published [a non-technical guide](#) explaining the key reasons for the

differences observed between official and real world driving emissions.

Recognising these shortcomings, over the coming two years the European Union will shift to a new measurement procedure known as the 'Worldwide harmonized Light vehicles Test Procedure' (WLTP). The WLTP is designed to help ensure that the laboratory results better represent actual vehicle performance on the road.