



# Real-world emissions from cars and vans

Concept Name

Description

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## Data description (metadata)

### Data description

*Background, main characteristics of dataset*

This dataset refers to the lifetime real-world fuel/energy consumption and kilometres driven for passenger cars and vans, which were newly registered since 2021, when read out by manufacturers (over-the-air) or during maintenance or repair in manufacturer dealerships or (from 2023 onwards) during Periodic Technical Inspection. The data are read out from the on-board fuel and/or energy consumption monitoring devices installed in the vehicles.

Monitoring of the real-world fuel/energy consumption and CO<sub>2</sub> emissions from cars and vans is based on Article 12 of [Regulation \(EU\) 2019/631](#). It aims to ensure that the CO<sub>2</sub> emissions of vehicles determined during laboratory testing remain representative of real-world emissions of vehicles in circulation. The procedures for collecting and reporting the real-world data from on-board fuel consumption monitors and for comparing it with the corresponding laboratory World Harmonised Light Vehicle Test Procedure (WLTP) data are set out in the [Implementing Regulation \(EU\) 2021/392](#).

The dataset is combined with information collected under the same regulation, based on laboratory-based emission testing, which is also published as a dataset on the EEA's datahub for [cars](#) and [vans](#). To compare the real-world emission data with the WLTP laboratory values, both data sets are being combined and published per vehicle in a unique CSV file called "[Cars/Vans] - Raw Real-world CO<sub>2</sub> emissions dataset [collection year]". The gap between laboratory and real-world values is computed per manufacturer and powertrain/fuel type and is published in a complementary CSV file called "[Cars/Vans] - Aggregate Real-world CO<sub>2</sub> emissions dataset [collection year]".

### Statistical population

*Population about which information is to be sought*

Passenger cars and light commercial vehicles (vans) newly registered since January 1st 2021.

### Reference period

Calendar year (T)

### Frequency of dissemination

Annually

### Geographical reference area

All EU-27 Member States, Norway, Iceland

### Unit of measure

The main unit of measure are the specific WLTP CO<sub>2</sub> Emissions in gCO<sub>2</sub>/km. Further details on the are available in the next section.

### Basic statistical concepts and definitions

#### Raw data per reported vehicle

For all reported vehicles:

- Total fuel consumed (lifetime) (l)
- Total distance travelled (lifetime) (km)

For Plug-in Hybrids Electric Vehicles (PHEV) only:

- Total distance travelled in charge depleting operation with engine off (lifetime) (km)
- Total distance travelled in charge depleting operation with engine running (lifetime) (km)
- Total distance travelled in driver-selectable charge increasing operation (lifetime) (km)
- Total fuel consumed in charge depleting operation (lifetime) (l)
- Total fuel consumed in driver-selectable charge increasing operation (lifetime) (l)
- Total grid energy into the battery (lifetime) (kWh)

#### Aggregated data (arithmetic and weighted averages) per manufacturer

- OBFCM fuel consumption (l/100 km)
- WLTP fuel consumption (l/100 km)
- absolute gap fuel consumption (l/100 km)
- percentage gap fuel consumption (%)
- OBFCM CO<sub>2</sub> emissions (g/km)
- WLTP CO<sub>2</sub> emissions (g/km)
- absolute gap CO<sub>2</sub> emissions (g/km)
- percentage gap CO<sub>2</sub> emissions (%)

### Classifications used

#### Fuel types

Diesel; Diesel/Electric; Petrol; Petrol/Electric; E85

Fuel mode (more information can be found [here](#))

Hybrid (H); Monofuel (M); Flexfuel (F); Plug-in hybrid (P)

#### Vehicle type (See the explanation [here](#))

- M1, M1G (Vehicles used for the carriage of passengers and comprising not more than eight seats in addition to the driver's seat)
- N1, N1G (Vehicles used for the carriage of goods and having a maximum mass not exceeding 3.5 tonnes)

### Statistical Confidentiality

The Commission shall each year publish anonymised and aggregated datasets according to Article 12 of Regulation 2021/392.

Data on the vehicle identification number are *not* made public.

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## Data quality

### Relevance

Article 12(3) of Regulation (EU) 2019/631: "The Commission shall monitor and report annually on how the gap referred to in the first subparagraph evolves from 2021 onwards and shall, as soon as sufficient

data is available, and no later than 31 December 2026, publish a report setting out a methodology for a mechanism to adjust the average specific emissions of CO<sub>2</sub> of the manufacturer as of 2030 using real-world data collected pursuant to Implementing Regulation (EU) 2021/392, and assessing the feasibility of such a mechanism.”

<p><b>Timeliness</b></p> <p><i>Length of time between data availability and the event or phenomenon they describe</i></p>	<p>T + 1 year.</p> <p>The data collected by manufacturers and Member States during calendar year T is published in the following year (T+1).</p>
<p><b>Accuracy and reliability</b></p>	<p><b>Source data:</b> The manufacturers and countries (from 2023) collect real-world fuel/energy consumption data, and report this together with the Vehicle Identification Numbers (VIN) by April 1<sup>st</sup> each year to the EEA via the online Transport Reportnet 3 platform.</p> <p>The EEA quality checks and aggregates this data. In addition, the relevant laboratory data collected under Article 7 of Regulation (EU) 2019/631 is being linked to the real-world data to enable the calculation of the gap between the laboratory and real-world CO<sub>2</sub> emissions.</p> <p><b>Data collection and methods used:</b> The real-world fuel/energy consumption of vehicles is determined and stored through the use of on-board fuel and/or energy consumption monitoring (OBFCM) devices, which have to be installed in new cars and vans registered since 2021. The data is collected by manufacturers (either over-the-air or from the on-board diagnostics port of the vehicle) and Member States (by read-out from the on-board diagnostics port during periodical technical vehicle inspection) and submitted electronically to the Transport Reportnet 3 platform of the European Environment Agency (EEA).</p> <p>The EEA, on behalf of the Commission, collects and processes the data received and aggregates it per manufacturer. The retained data can be identified in the published raw data (column name ‘in average’ is set to 1). It is, however, still possible that the dataset contains unknown sources of uncertainty, which will be part of the calculations and influence the result in the aggregate dataset. The impact of these remaining issues is minimized by the data pre-processing – hence the published data has a high accuracy and reliability. Further details on the data pre-processing and the estimation of CO<sub>2</sub> emissions can be found <a href="#">here</a>.</p>
<p><b>Accessibility and clarity</b></p>	<p><b>Publications:</b></p> <ul style="list-style-type: none"> <li>- The datasets are accessible for download as .csv files on the EEA’s <a href="#">Datahub</a>. The raw data for cars and vans, as well as aggregate emission values for each type of vehicle across manufacturers in a given reporting year are available.</li> <li>- The data, contextual information, as well as interactive tables and dashboards are also available on the <a href="#">Climate and Energy in the EU website</a>.</li> </ul> <p><b>Quality documentation:</b> Details on the quality control mechanisms performed are listed in the Excel document available for download on the Transport Reportnet 3 website for country reporters and manufacturers. This information is not publicly available due to the sensitivity of the submitted data. Detailed explanation on the data handling for the 2021 data is available in the <a href="#">Commission Staff Working Document</a>.</p>
<p><b>Coherence and comparability</b></p>	<p><b>Geographical:</b> The composition of the countries belonging to the European Union and the countries which opted-in from the European Free Trade Association (EFTA) can change over time.</p> <p><b>Over time:</b> The changes in the dataset follow the regulatory changes over time in all aspects, most notably regarding scope, collected parameters and the applied calculation method. Still, the data can be considered as being coherent and comparable over time.</p> <p>Over the lifetime of a vehicle, all the read-outs are being reported to the EEA from two sources: manufacturers and Periodic Technical Inspections. This means that of the data collected accumulates over time, i.e. it grows with each reference period. Comparability is ensured as the linkage is done via the VIN and it is possible to compare the same pool of vehicles over time.</p>

## C Contact and update

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