Monitoring of CO_2 emissions from heavy-duty vehicles

Concept Name	Description
A	**Data description (metadata)**
Data description *Background, main characteristics of dataset*	CO_2 emissions from lorries, buses and coaches correspond to about one quarter of the EU's road transport emissions and have increased over the last three decades. To help implement emission reductions, the EEA collects emission data on heavy-duty vehicles that have been newly registered in an EU Member State since 2019, across vehicle sub-groups and manufacturers. This dataset also provides aggregated emission values for the EU. The dataset refers to the specific CO_2 emissions for newly registered heavy-duty vehicles (HDVs) in a given reporting year. Fuel consumption and CO_2 emissions for HDVs are determined using a tool called the Vehicle Energy Consumption Calculation Tool (VECTO). This simulation tool was developed by the European Commission and since 2020, the data determined by VECTO (and the technical parameters) are reported to the EEA. For HDVs that are subject to emission performance requirements, the detailed technical parameters collected from manufacturers include according to Regulation 2019/1242 inter alia: • key information on each vehicle (e.g. model, mass, vehicle category) • details of key vehicle components (e.g. engine, tyres, transmission) • vehicle performance parameters on different types of simulated trips undertaken (e.g. long haul or urban delivery with varied payloads), including fuel consumption and CO_2 emissions. For all HDVs, registration data are reported by Member State authorities. This includes key information about each vehicle, e.g. registration date, vehicle category, type, or mass.
Statistical population *Population about which information is to be sought*	Newly registered HDVs (i.e., lorries, buses, coaches, trucks, trailers) in the geographical reference area between 1st July and 30 June the following year.
Reference period	**Reporting period:** The reporting periods are annual and run from 1st July to 30 June the following year. One exception was the first reporting period which covered 1st January 2019 to 30 June 2020. **Dataset:** July 2019 – June of the year preceding the publishing year.
Frequency of dissemination	Annually.
Geographical reference area	All EU-27 Member States (disaggregated and aggregated). Norway has reported voluntarily since 2019.
Unit of measure	The main unit of measure are the specific CO_2 emissions in gCO_2/tkm. More than 400 parameters are shared by the EEA. Details on the different units can be found here: Monitoring of CO2 emissions from heavy-duty vehicles - Regulation (EU) 2018/956
Basic statistical concepts and definitions	See comment above.
Classifications used	Exemplary classifications used include: Vehicle Groups For example, vehicle group 4 is a rigid lorry with an axle configuration 4 x 2 and a technically permissible maximum laden mass higher than 16 t. For the complete list, see Annex I, Tables 1 to 6 Regulation (EU) 2017/2400 Vehicle Subgroups For example, sub-group 4-RD is a vehicle with a sleeper cab with an engine power of ≥265 kW and an operational range of < 350 km. For the complete list, see Annex I (1) of Regulation (EU) 2019/1242. Vehicle Category Code See the full EU classification of vehicle types Since 2019: - N2, N3 From reporting period 2024 and onwards: - N1 unless falling under Regulation (EU) 2019/631 - M2, M3 - O3, O4
Statistical Confidentiality	According to Article 13c of Regulation (EU) 2019/1242, the Commission shall keep a central register for the data on HDVs ('the central register'). The central register shall be publicly available with the exception of data entries listed in point 3.2 of Annex V Regulation (EU) 2019/1242. The air drag value shall be made publicly available in a range format as set out in Part C of Annex IV. Personal and sensitive data relating to vehicle identification number are not made public.
B	**Data quality**
Relevance	This dataset informs the user about the specific CO_2 emissions of heavy-duty vehicles that were newly registered during the reference period in the geographical reference area EU Member States (see section 'Reference Period' and 'Geographical Reference Area'). Users can find this information across different

		dimensions, for example across manufacturers and vehicle models, and can thereby compare the emission performance of different manufacturers. The aggregated average values of the vehicle's specific CO_2 emissions give insight about the total CO_2 emissions coming from HDVs in the EU. They further allow an evaluation of the EU's progress towards its transport emission reduction targets.
	Timeliness *Length of time between data availability and the event or phenomenon they describe*	T + 1 year. With the reporting period T. The datasets relating to heavy-duty vehicles newly registered during reporting period T are to be published in the following year (T+1).
	Accuracy and reliability	**Source data:** Member State authorities report e.g. registration data to the EEA. Vehicle manufacturers report detailed technical data to the EEA including fuel consumption and CO_2 emissions. The legal deadline for data reporting by national authorities and manufacturers is the 30th September every year. **Data collection and methods used:** The data is submitted electronically to the Transport Reportnet 3 platform of the European Environment Agency (EEA). The EEA performs quality checks on the reported data, combines the data from both sources and compiles them to obtain a European data set. Based on the data reported by national authorities and manufacturers, the EEA calculates average specific CO_2 emissions according to Regulation 2019/1242.
	Accessibility and clarity	**Publications:** The datasets are to be published by 30th April in the succeeding year of reporting. - The main dataset is published on the EEA's Datahub. - The dataset is accessible through EEA's table viewer. Users can use it to interact with it and download the data. - The data, background information and interactive visualizations are available on the 'Climate and Energy in the EU website'. **Quality documentation:** 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.
	Coherence and comparability	**Geographical:** 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. **Over time:** 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. The Methodology used for the VECTO simulation model changes over time. The latest developments and released VECTO version can be found on the European Commissions dedicated Wiki page: https://code.europa.eu/groups/vecto/-/wikis/home. Still, the data can be considered as being coherent and comparable over time.
C	**Contact and update**	
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