



TOWARD GREENER FREIGHT: TRANSPORTATION STATISTIC SYSTEM AND BEST PRACTICE IN EUROPE

Annex on passenger transportation statistics

Ref. 50148

Customer:

The International Council on Clean Transportation

Customer reference:

50148

Confidentiality, copyright and reproduction:

This report is the Copyright of Ricardo-AEA Ltd and has been prepared by Ricardo under contract to The International Council on Clean Transportation for Transportation Statistic System and Best Practice in Europe (dated 26 December 2023). The contents of this report may not be reproduced in whole or in part, nor passed to any organisation or person without the specific prior written permission of the Commercial Manager. Ricardo accepts no liability whatsoever to any third party for any loss or damage arising from any interpretation or use of the information contained in this report, or reliance on any views expressed therein, other than the liability that is agreed in the said contract."

Ricardo reference:

ED18401

Contact:

Rui Neiva
Gemini Building, Fermi Avenue, Harwell,
Oxfordshire, OX11 0QR, United Kingdom
T: +44 (0)1235 753 473
E: rui.neiva@ricardo.com

Authors:

Rui Neiva, Martin López Pavez

Approved by:

Achilleas Tsamis

Signed



Date:

13 September 2024

Ricardo is certified to ISO9001, ISO14001, ISO27001 and ISO45001.

Ricardo, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to as the 'Ricardo Group'. The Ricardo Group assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Ricardo Group entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.

CONTENTS

1. INTRODUCTION	2
2. PASSENGERS TRANSPORT DATA COLLECTION	3
2.1 RAIL TRANSPORT	3
2.2 TRANSPORT BY SEA	3
2.3 TRANSPORT BY AIR	3
2.4 INLAND WATERWAYS	4
2.5 ROAD TRANSPORT	4
3. REFERENCES	6

1. INTRODUCTION

The International Council on Clean Transportation (ICCT) has contracted Ricardo to develop a study reviewing European-level freight statistics. This in turn will support ICCT in their advisory role to Chinese government in its effort to improve the country's transportation statistic system. The focus of that report was on freight statistics.

To complement that report, this annex provides a high-level overview on passenger transportation statistics. The collection of these statistics is governed by different regulations depending on the mode of transport, including rail, sea, air, inland waterways, and road transport. This annex goes discusses all these modes in turn.

For rail, sea, and air transport, the regulations clearly specify the data to be collected and submitted to Eurostat, along with the respective reporting frequencies and necessary considerations. However, in the case of inland waterways, no specific regulation exists. For road transport, there is no harmonized system for data collection, although some Member States conduct National Travel Surveys (NTS) periodically. Given the importance of road transport, various EU-level efforts have been made over time to develop a common methodology, culminating in the "Eurostat Guidelines on Passenger Mobility Statistics." Additionally, various initiatives have been undertaken to collect passenger mobility data across the EU, which are detailed in this report.

The annex is organized as follows:

- Rail Transport.
- Transport by sea.
- Transport by air.
- Inland waterways.
- Road transport.

2. PASSENGERS TRANSPORT DATA COLLECTION

Different modes of transport are subjected to different regulations at EU level for passenger transportation statistics. However, passenger mobility statistics (road transport) are not currently part of the regulated European Statistical System. In light of this, there is no regular and harmonized data collection in the field of road passenger traffic statistics as already exist for other modes of transport such as rail, air or maritime transport (Eurostat, 2021). The following subsections outline the regulations concerning passenger transport and provide key indicators collected for rail, sea, air, inland waterway, and road transport. These sections offer an explanation of the relevant regulations for each mode of transport and the indicators collected for each mode.

2.1 RAIL TRANSPORT

[Regulation 2018/643](#) establishes common rules for the production of rail transport statistics at EU level. This regulation stipulates that each Member States has to report statistics related to passenger transport by rail occurring within its national territory, and indicates also how to proceed when a railway undertaking operates in more than one Member State (European Parliament, 2018).

Data collected is transmitted to Eurostat. Available indicators¹ are:

- Type of transport (national, international-incoming, international-outgoing, transit).
- International passengers transported and country of embarkation / disembarkation (number of passengers and passenger-km).
- Passenger train movements (train-km).
- Number of passenger trains on the rail network (number of trains).

Eurostat receives data from the EU countries, countries of the European Free Trade Association (EFTA), and the EU candidate countries Serbia, Bosnia-Herzegovina, North Macedonia, Montenegro, and Türkiye. Data is available annually. The values on total rail transport performance of goods and passengers are published quarterly (Eurostat, 2024).

2.2 TRANSPORT BY SEA

[Regulation 2009/42/EC](#) establishes common rules in respect of carriage of goods and passengers by sea at EU level and states that Member States have to collect statistics on the carriage of goods and passengers by seagoing vessels calling at ports in their territories. Vessels with a gross tonnage of less than 100 tonnes may be excluded from the data collection (European Parliament, 2009).

Data collected is transmitted to Eurostat. Available indicators concerning passenger transport are:

- Passenger movements, starting or finishing a voyage as well as number of cruise passengers on a cruise (expressed in number of passengers).
- Direction of movement (whether inwards or outwards).
- Port of loading/unloading.
- Type of vessel (categories in the Annex of the regulation).
- Size of vessel (deadweight tonnage).
- Size of vessel (gross tonnage).

These data are available at port level, maritime coastal area level, regional level and by country. Data are collected by national authorities and provided quarterly and annually (Eurostat, 2024).

2.3 TRANSPORT BY AIR

[Regulation 437/2003](#) establishes the rules for the collection of data regarding the carriage of passengers, freight and mail by air. The regulation specifies that Member States have to report statistics on passenger, freight and mail transport when the carriage is made by commercial air services as well as on civil aircraft movements to or from EU airports, except for flights by state aircraft. According to the regulation, the collection

¹ Data do not include passenger transport by metro, tram, and light rail.

of data shall be based where possible on available sources, minimizing the burden on respondents (European Parliament, 2003)

Data collected is transmitted to Eurostat. Available indicators concerning passenger transport by air are:

- Number of passengers (per flight).
- Aircraft type.
- Origin and destination.
- Number of flights.
- Total number of available seats on an aircraft

Other indicators concerning passenger transport at airport level are:

- Total passengers carried (number of passengers).
- Total direct transit passengers (number of passengers).
- Reporting airport.

In terms of origin/destination level, the indicators collected are:

- On flight origin/destination airport.
- Reporting airport.
- Passengers carried (number of passengers).

Data is transmitted monthly to Eurostat, for airports handling more than 150,000 passenger units per year. Data is transmitted by the 27 EU countries as well as three EFTA countries and five candidate countries (Bosnia and Herzegovina, Montenegro, North Macedonia, Serbia, and Türkiye) (Eurostat, 2024).

2.4 INLAND WATERWAYS

For **inland waterways** there is not EU level legislation. Some Member States collect relevant passenger data, but it is not standardized. A review of data collection on passenger transport statistics is under development and results are expected in 2026 (Eurostat, 2024).

2.5 ROAD TRANSPORT

There is not EU level legislation concerning passenger road transport. All Member States collect passenger data, but these are not in a standardized manner. There is a clear need of harmonized passenger mobility data across the EU. This has been a point in which Eurostat has been working on, making efforts to develop an harmonized methodology to assess passenger mobility in EU. Part of this was the development of the Eurostat Guidelines on Passenger Mobility Statistics (Eurostat, 2021), a result of the effort to develop a methodology for a common and harmonized data collection process, at which the core information is collected for all countries conducting a NTS (Eurostat, 2021).

The guidelines set a common basis for terms and definitions for relevant terminology and present indicators which all EU Member States and candidate countries should use when reporting on a regular basis. The guidelines also cover recommendations for the methodology (such as reference population, sampling, survey methodology, data collection protocol), method of ex-post harmonization of existing national survey results, and recommendations of mobility questionnaires.

There are a few datasets available regarding road passenger transport in the EU. These are result of efforts made by Member States under some European initiatives promoting the collection of road passenger statics, following the Eurostat Guidelines on Passenger Mobility Statistics. These instances are:

- Pilot projects carried out by EU Member States, co-funded by Eurostat and National Statistical Institutes². The goal of this initiative is to broaden the coverage and knowledge of passenger mobility, while applying a standard methodology. The data collected included 13 Member States (Eurostat, 2021).
- Study on New Mobility Patterns in European Cities. Following the methodology recommended by the Eurostat Passenger Mobility Guidelines, the European Commission initiated an EU-wide survey on

² One condition for receiving a grant was to follow the Eurostat Passenger Mobility Guidelines. The article reporting data covers Belgium, Denmark, Germany, Greece, Croatia, Italy, Latvia, the Netherlands, Austria, Poland, Portugal, Romania and Slovenia

"new mobility patterns", encompassing all modes of transport, including both urban and non-urban trips. Conducted between March and August 2021, the survey focused on individuals aged 15 to 84 years. It measured the number of trips and passenger-kilometers travelled by different modes of transport, with particular attention to the new mobility systems adopted in urban areas (European Commission, 2022).

- EU research project OPTIMISM. The primary aim was to offer a scientifically supported understanding of the transport system and people's travel decisions by examining social behavior, mobility patterns, and business models (CORDIS, 2013).
- National Travel Surveys. By 2022, out of the EU-27 Member States, 24 of them had carried at least one NTS since 2006 (European Commission, 2022).

3. REFERENCES

- CORDIS. (2013). *Optimising Passenger Transport Information to Materialize Insights for Sustainable Mobility*. Retrieved from CORDIS: <https://cordis.europa.eu/project/id/284892/reporting>
- EEA. (2023). *EMEP/EEA air pollutant emission inventory guidebook 2023*. Retrieved from EEA: <https://www.eea.europa.eu/publications/emep-eea-guidebook-2023>
- EEA. (2024). *Who we are*. Retrieved from EEA: <https://www.eea.europa.eu/en/about/who-we-are>
- EU Monitor. (2021). *Regulation 525/2013*. Retrieved from EU Monitor: https://www.eumonitor.eu/9353000/1/j4nvk6yhcbpeywk_j9vvik7m1c3gyxp/vjs5ga5aifou#:~:text=This%20regulation%2C%20the%20Monitoring%20Mechanism,and%20rules%20for%20GHG%20emissions.
- European Commission. (2001, November 7). *Commission Regulation (EC) No 2163/2001 concerning the technical arrangements for data transmission for statistics on the carriage of goods by road*. Brussels: European Commission. Retrieved from EUR-LEX: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02001R2163-20080101>
- European commission. (2003). *Regulation 437/2003 - Transport by air*. Retrieved from European commission: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32003R1358>
- European Commission. (2004, April 7). *Commission Regulation (EC) No 642/2004 of 6 April 2004 on precision requirements for data collected in accordance with Council Regulation (EC) No 1172/98 on statistical returns in respect of the carriage of goods by road*. Brussels: European Commission. Retrieved from EUR-LEX: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32004R0642&qid=1714010399897>
- European Commission. (2009). *Directive 2009/42/EC - Transport by sea*. Retrieved from European Commission: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32009L0042>
- European Commission. (2011). *Regulation (EU) No 691/2011 on European environmental economic accounts*. Retrieved from European Commission: <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:192:0001:0016:EN:PDF>
- European Commission. (2012). *Regulation 70/2012 - Carriage of goods by road*. Retrieved from European commission: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32012R0070>
- European Commission. (2013). *Regulation (EU) No 525/2013 on a mechanism for monitoring and reporting greenhouse gas emissions*. Retrieved from European Commission: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex:32013R0525>
- European Commission. (2018a). *Monitoring and reporting of CO2 emissions from and fuel consumption of new heavy-duty vehicles*. Retrieved from European Commission: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018R0956>
- European Commission. (2018b). *Regulation (EU) 2018/974 - Statistics of goods transport by inland waterway*. Retrieved from European Commission: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32018R0974>
- European commission. (2019a). *EU rail transport statistics*. Retrieved from European Commission: <https://eur-lex.europa.eu/legal-content/EN/LSU/?uri=CELEX:32018R0643>
- European Commission. (2019b). *European Green Deal*. Retrieved from European Commission: https://ec.europa.eu/commission/presscorner/detail/en/ip_23_762
- European Commission. (2019c). *Regulation (EU) 2019/1242*. Retrieved from European Commission: <https://eur-lex.europa.eu/eli/reg/2019/1242/oj>
- European Commission. (2020). *Sustainable and Smart Mobility Strategy*. Retrieved from European Commission: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12438-Sustainable-and-Smart-Mobility-Strategy_en
- European Commission. (2021). *Transport and the Green Deal*. Retrieved from European Commission: <https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green->

deal/transport-and-green-deal_en#:~:text=Our%20goal%20of%20being%20the,greenhouse%20gas%20emissions%20by%202050.

European Commission. (2022). *European Union regulations*. Retrieved from European Commission: <https://eur-lex.europa.eu/EN/legal-content/summary/european-union-regulations.html#:~:text=Regulations%20form%20part%20of%20the,legislative%2C%20delegated%20or%20implementing%20act>.

European Commission. (2022). *Study on new mobility patterns in European cities*. Retrieved from European Commission: <https://op.europa.eu/en/publication-detail/-/publication/adfc18f1-80e1-11ed-9887-01aa75ed71a1>

European Commission. (2023a). *Air Emissions Accounts Questionnaire 2024*. Retrieved from European Commission: <https://ec.europa.eu/eurostat/documents/1798247/6191529/AEA+Questionnaire/>

European Commission. (2023b). *ETS 2: buildings, road transport and additional sectors*. Retrieved from European Commission: https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets/ets-2-buildings-road-transport-and-additional-sectors_en

European Commission. (2023c). *Questions and Answers: CountEmissionsEU*. Retrieved from European Commission: https://ec.europa.eu/commission/presscorner/detail/en/qanda_23_3774

European Commission. (2023d). *Proposal for a regulation on the accounting of greenhouse gas emissions of transport services*. Retrieved from European Commission: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52023PC0441>

European Commission. (2023e). *Transport statistics introduced*. Retrieved from European Commission: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Transport_statistics_introduced#Broad_transport_policies

European Commission. (2023f). *Statistical pocketbook 2023*. Brussels: European Commission. Retrieved from https://transport.ec.europa.eu/facts-funding/studies-data/eu-transport-figures-statistical-pocketbook/statistical-pocketbook-2023_en

European Commission. (2024a). *CountEmissionsEU*. Retrieved from European Commission: [https://www.europarl.europa.eu/RegData/etudes/BRIE/2023/757562/EPRS_BRI\(2023\)757562_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2023/757562/EPRS_BRI(2023)757562_EN.pdf)

European Commission. (2024b). *Eurostat role*. Retrieved from European Commission: <https://ec.europa.eu/eurostat/web/main/about-us/policies/co-ordination-role>

European Commission. (2024c). *What is the European Statistical System?*

European Commission. (2024d). *Report on the implementation of Regulation (EU) No 70/2012 of the European Parliament and of the Council of 18 January 2012 on statistical returns in respect of the carriage of goods by road, COM(2024) 9 final*. Brussels: European Commission. Retrieved from <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52024DC0009>

European Parliament. (2009). *DIRECTIVE 2009/42/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on statistical returns in respect of carriage of goods and passengers by sea*.

European Parliament. (2018). *REGULATION (EU) 2018/643 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on rail transport statistics*. Retrieved from <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018R0643>

European Parliament. (2023a). *Common transport policy: Overview*. Retrieved from European Parliament: <https://www.europarl.europa.eu/factsheets/en/sheet/123/common-transport-policy-overview>

European Parliament. (2023b). *CountEmissionsEU*. Retrieved from European Parliament: [https://www.europarl.europa.eu/RegData/etudes/BRIE/2023/757562/EPRS_BRI\(2023\)757562_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2023/757562/EPRS_BRI(2023)757562_EN.pdf)

European Union. (2024). *Internal market*. Retrieved June 21, 2024, from EUR-Lex: <https://eur-lex.europa.eu/summary/chapter/24.html>

Eurostat. (2008). *NACE. Statistical classification of economic activities in the European Community*. Retrieved from Eurostat: <https://ec.europa.eu/eurostat/documents/3859598/5902521/KS-RA-07-015-EN.PDF>

- Eurostat. (2015a). *Manual (2015) for Eurostat's Air Emissions Accounts (AEA)*. Retrieved from Eurostat: https://circabc.europa.eu/sd/a/c0a0cdaa-aa03-4f16-9cde-a62fc351f385/ENV_ACC_WG_2015_03.2%20AEA%20Manual.pdf
- Eurostat. (2015b). *Manual for air emissions accounts*. Retrieved from Eurostat: https://seea.un.org/sites/seea.un.org/files/airemissions_ks-gq-15-009-en-n.pdf
- Eurostat. (2016). *Road freight transport methodology: 2016 edition*. European Commission. Retrieved from <https://ec.europa.eu/eurostat/documents/3859598/7731279/KS-GQ-16-005-EN-N.pdf/555702cd-f4f4-491e-92d3-e725a6656389>
- Eurostat. (2018). *Eurostat guidelines on Passenger Mobility Statistics*.
- Eurostat. (2020). *Greenhouse gas emission statistics - emission inventories*. Retrieved from Eurostat: https://www.congreso.es/docu/docum/ddocum/dosieres/sleg/legislatura_14/spl_11/pdfs/50.pdf
- Eurostat. (2021). *EUROSTAT GUIDELINES ON PASSENGER MOBILITY STATISTICS 2021 edition*. Retrieved from <https://circabc.europa.eu/ui/group/097ec987-3401-48d2-8cff-925d158b6eb1/library/97c8f2d4-f2c2-4a90-9709-62dcd1d7f411/details>
- Eurostat. (2021). *Passenger mobility statistics*. Retrieved from Eurostat: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Passenger_mobility_statistics
- Eurostat. (2023). *Energy consumption decomposition analysis on EU-27 and EU-27 members - 2023 edition*. Retrieved from Eurostat: <https://ec.europa.eu/eurostat/documents/3888793/18455312/KS-TC-23-006-EN-N.pdf/943cee29-14a9-4003-70f4-6ead6912f00a?version=1.0&t=1707312893910>
- Eurostat. (2024). *Information on data*. Retrieved from Eurostat: <https://ec.europa.eu/eurostat/web/transport/information-data>
- Eurostat. (2024a). *NUTS - NOMENCLATURE OF TERRITORIAL UNITS FOR STATISTICS*. Retrieved from Eurostat: <https://ec.europa.eu/eurostat/web/nuts/history>
- Eurostat. (2024b, March 15). *Road freight transport statistics*. Retrieved from Eurostat: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Road_freight_transport_statistics
- Eurostat. (2024c, March 12). *Electronic Data Files*. Retrieved from Eurostat CROS: <https://cros.ec.europa.eu/dashboard/edamis>
- European Parliament. (2003). *REGULATION (EC) No 437/2003 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on statistical returns in respect of the carriage of passengers, freight and mail by air*.
- ICCT. (2024a). *The revised CO2 standards for heavy-duty vehicles in the European Union*. Retrieved from ICCT: <https://theicct.org/publication/revised-co2-standards-hdvs-eu-may24/>
- ICCT. (2024b). *Roadmap Model Documentation*. Retrieved June 26, 2024, from GitHub: <https://theicct.github.io/roadmap-doc/>
- IPCC. (2019). *2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories*. Retrieved from IPCC: <https://www.ipcc-nggip.iges.or.jp/public/2019rf/index.html>
- Joint Research Centre. (2024, May 22). *JRC-IDEES-2021*. Retrieved June 21, 2024, from Joint Research Centre Data Catalogue: <https://data.jrc.ec.europa.eu/dataset/82322924-506a-4c9a-8532-2bdd30d69bf5>



T: +44 (0) 1235 75 3000

E: info@ricardo.com

W: www.ricardo.com