

# COPERT 2026 updates

## Chapters 1.A.3.b.i-iv / Road Transport



# 2026 updates (COPERT v5.10)

- Revision of consumption of LDVs running in liquid fuels
- Revision of emission factors of PHEV/HEVs cars
- Revision of emission factors of CNG cars
- Introduction of Battery Electric Trucks
- Revision of emission factors of L-category vehicles
- Regular software improvements & bug corrections



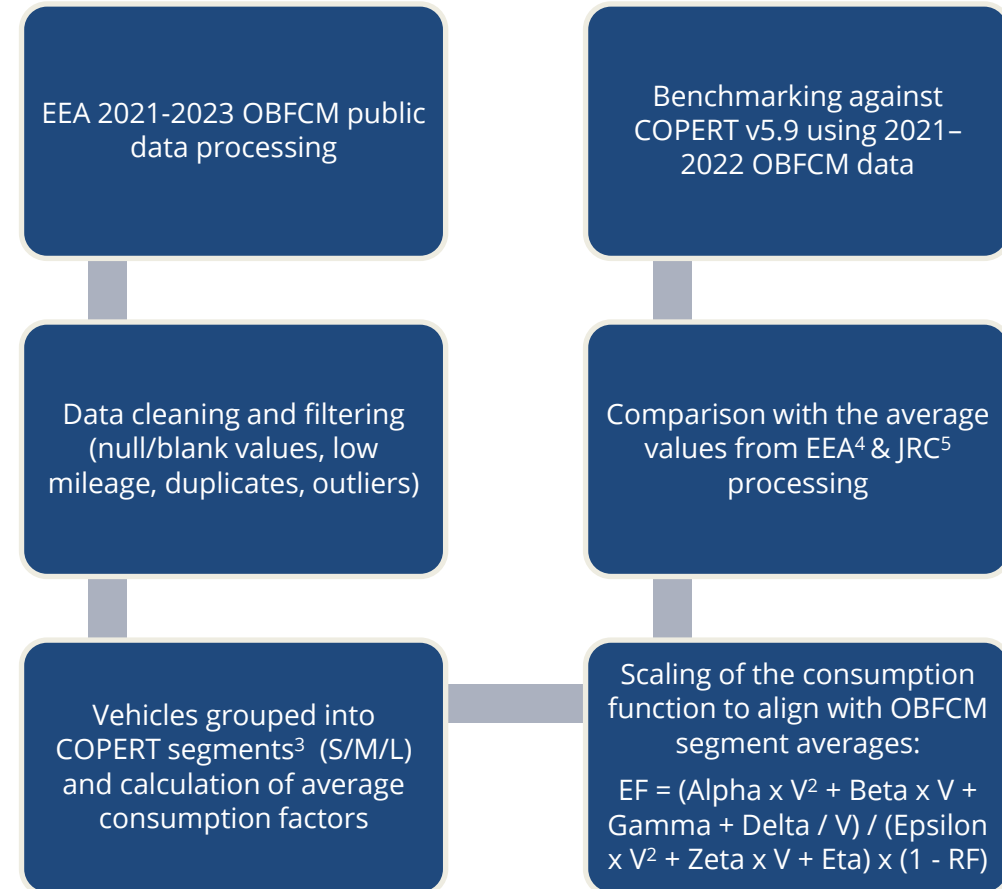
# Revised consumption of LDVs running in liquid fuels



# Revision of consumption of LDVs - Overview

- Real-world consumption & CO<sub>2</sub> data<sup>1</sup> from OBFCM devices:
  - >5M cars from EU27 countries running in liquid fuels registered between 2021-2023
  - >600k vans from EU27 countries running in liquid fuels registered between 2021-2023
  - WLTP vs real-world gap identified (reaching 300% for PHEVs)
- More data are expected the coming years & gradual expansion to all vehicles & powertrains<sup>2</sup>

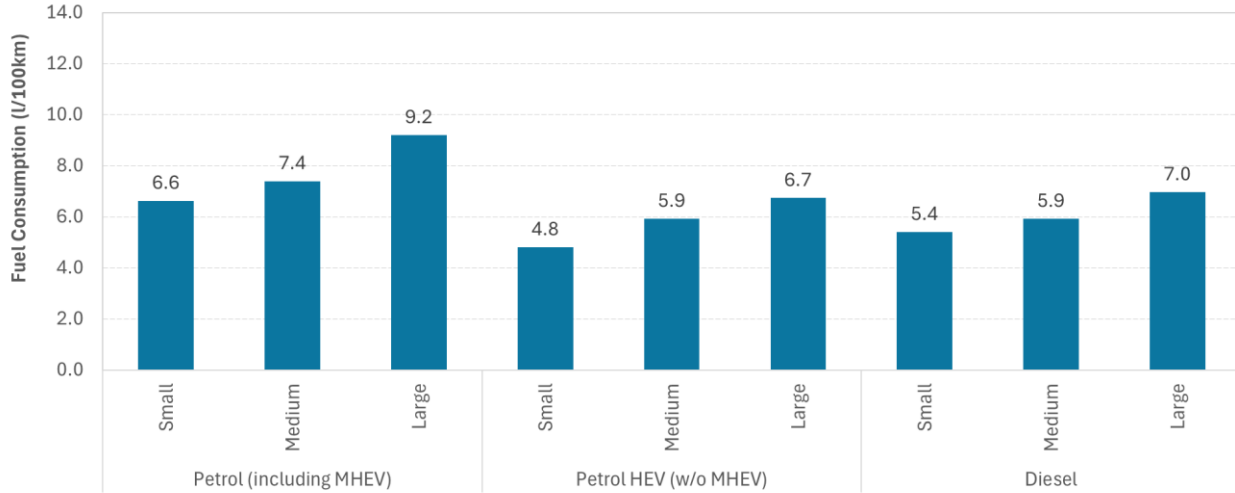
## Data processing flowchart



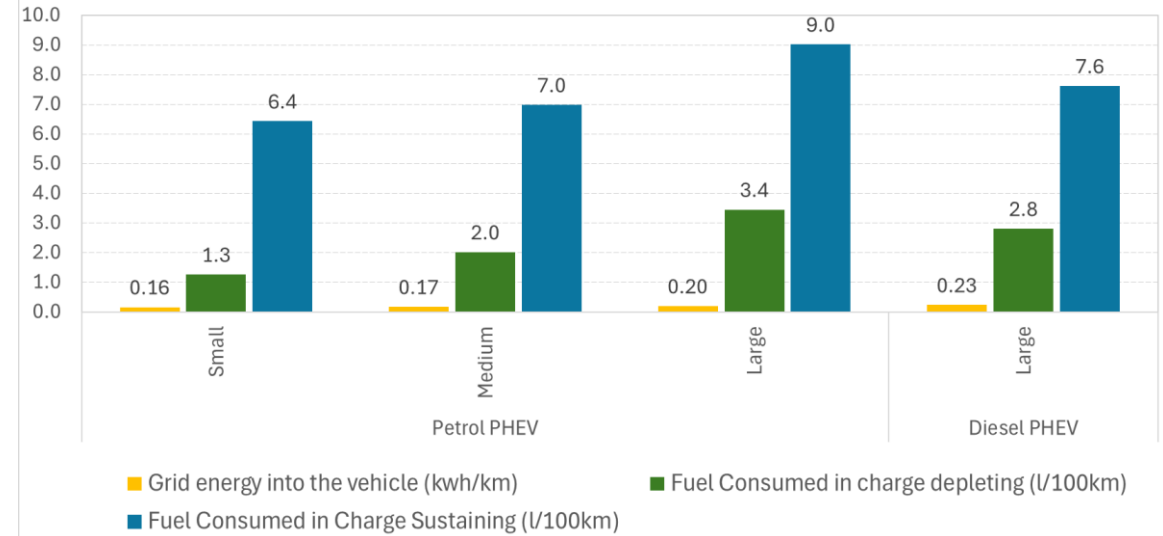
1. [Additional information](#)
2. [Regulation - 2024/1257 - EN - EUR-Lex](#)
3. Small (A-B)/Medium(C)/Large (D,E,F) classification is based on the [EU classification of vehicle types | European Alternative Fuels Observatory](#)
4. [Data](#)
5. [Towards zero CO2 emissions: Insights from EU vehicle on-board data - ScienceDirect](#)

# Revision of consumption of LDVs - Results

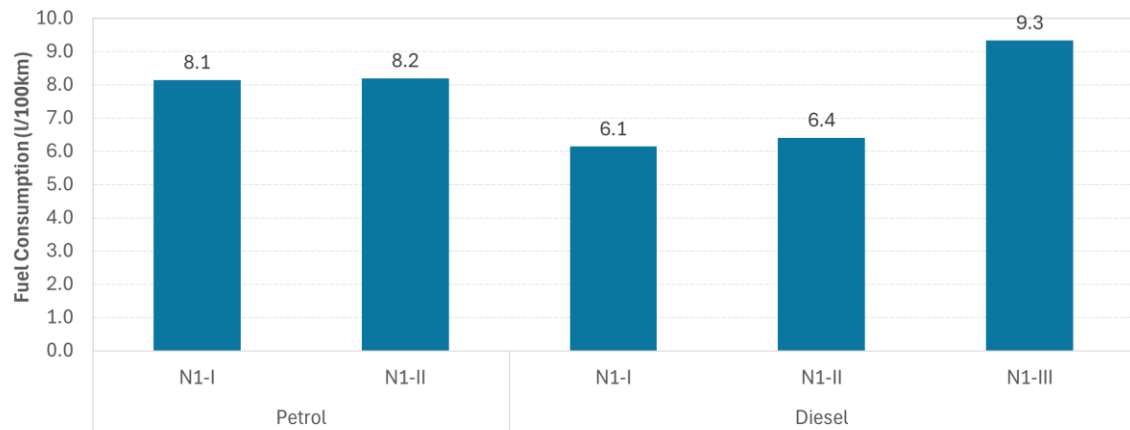
Average Fuel Consumption (l/100km) of **Cars** from OBFCM data 2021-2023



Average Consumption of **PHEV Cars** from OBFCM data 2021-2023



Average Fuel Consumption (l/100km) of **Vans** from OBFCM data 2021-2023



- **Charge sustaining** on avg in 62% & **Charge Depleting** in 38% of total distance:
  - **Charge Depleting in pure electric mode** in avg 27% of total distance
  - **Charge Depleting with engine on** in 11% of total distance
- **Grid energy into the vehicle** is Grid energy into the battery with an 8% offset increase for charging losses



# Revision of consumption of LDVs - Impacts

- Relative adjustments also to other vehicles wo OBFCM data:
  - Pre-Euro 6 petrol cars
  - LPG ~15% less CO<sub>2</sub> from petrol cars aligned with literature<sup>1,2</sup> to ensure physical consistency
- Estimated impact in national emission inventories:
  - w/o energy statistical balance, **CO<sub>2</sub>** will:
    - **decrease < 5% for cars**
    - **increase < 5% for vans**
  - With energy statistical balance, no change in energy consumption & CO<sub>2</sub> but **mileage** will:
    - **Increase < 5% for cars**
    - **decrease < 5% for vans**

1. [Fuel consumption and exhaust emissions from Euro 6d vehicles fueled by innovative LPG/DME blend – ScienceDirect](#)  
2. [Determination of Euro 6 LPG passenger car emission factors through laboratory and on-road tests: Effect on nation-wide emissions assessment for Italy - ScienceDirect](#)



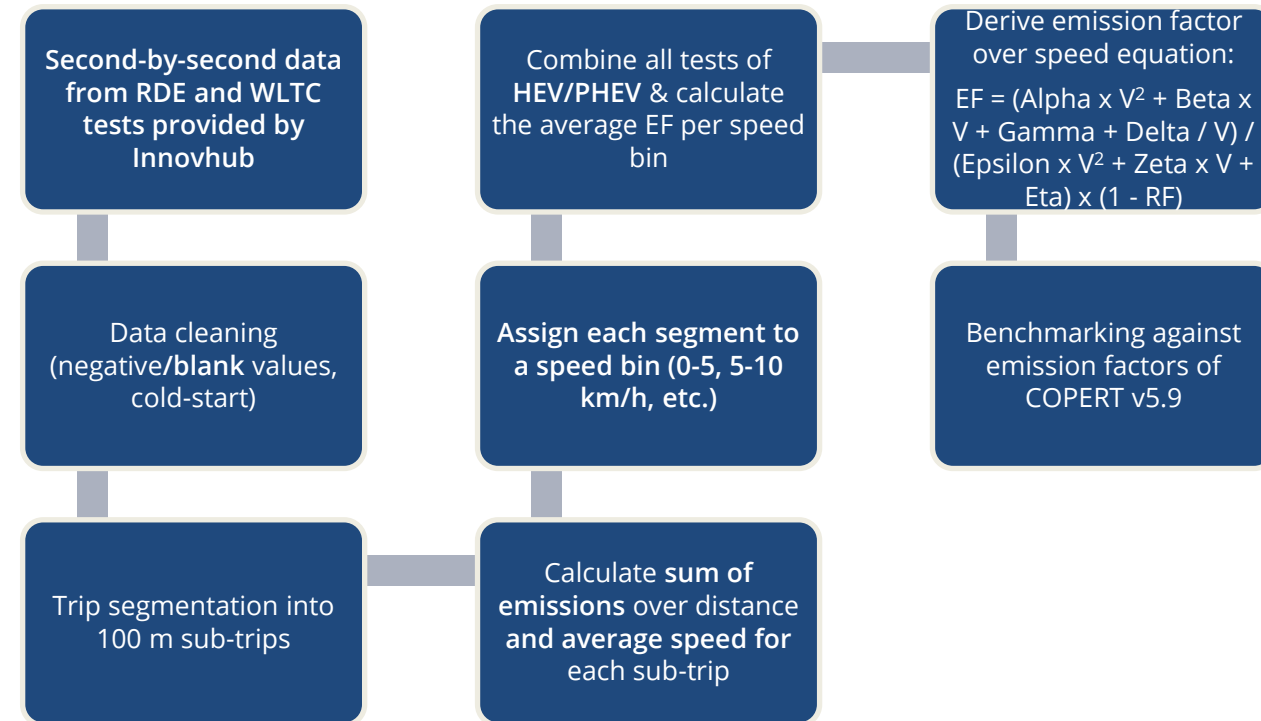
# Revised emission factors of PHEV/HEVs cars



# Revised emission factors of HEV/PHEV: Overview

- Revision of **Petrol Hybrid** and **Petrol Plug-in Hybrid Euro 6 cars** emission factors, based on measurements conducted by Innovhub<sup>1</sup>
- Available on-road (RDE) and in-lab (WLTC) measurement data for **8 Petrol Hybrid** and **4 Petrol PHEV** passenger cars of different segment (S/M/L)
- **RDE** test results were utilized for **CO, CO<sub>2</sub>, NO, NO<sub>x</sub>, SPN23** emission factors
- **WTLC** test results were utilized for **CH<sub>4</sub> and HC** emission factors

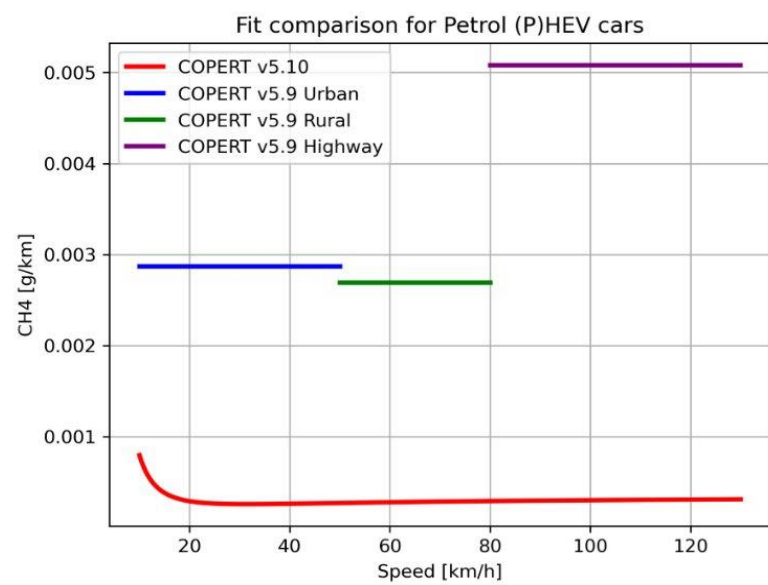
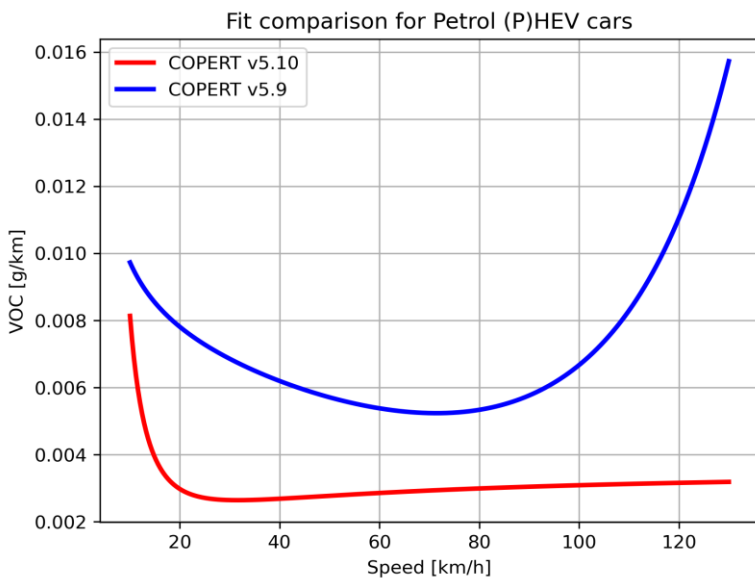
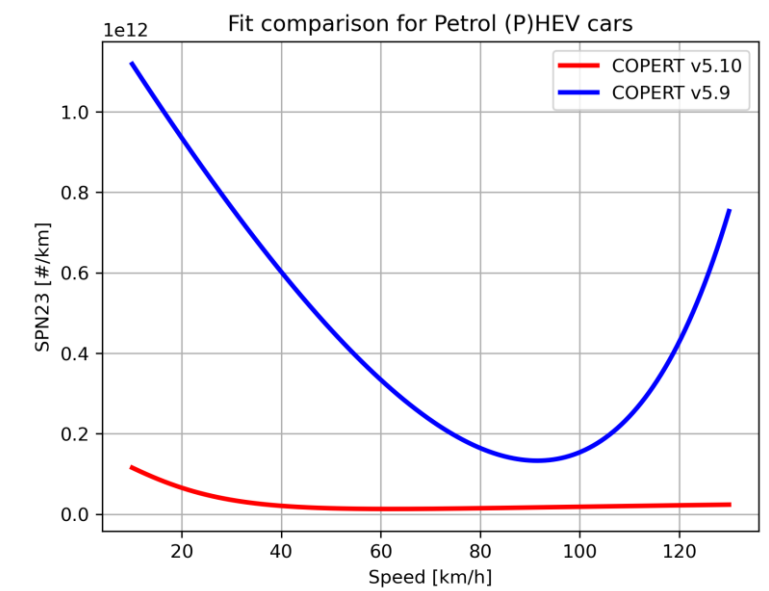
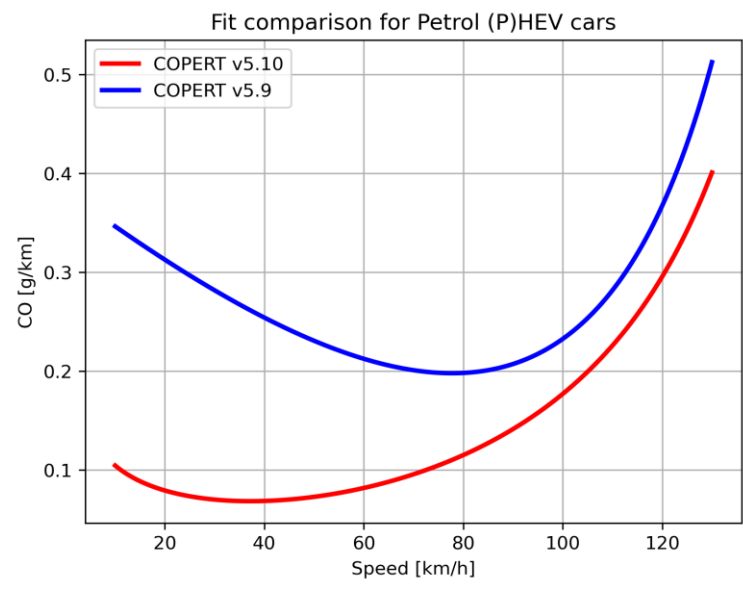
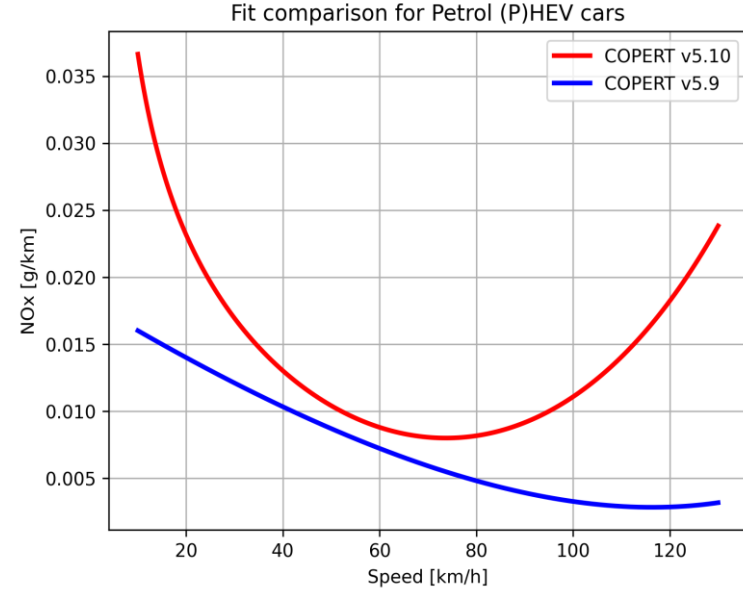
## Data processing flowchart



1. [TFEIP\\_Innovhub\\_14\\_May\\_final](#)



# Revised emission factors of HEV/PHEV: Results



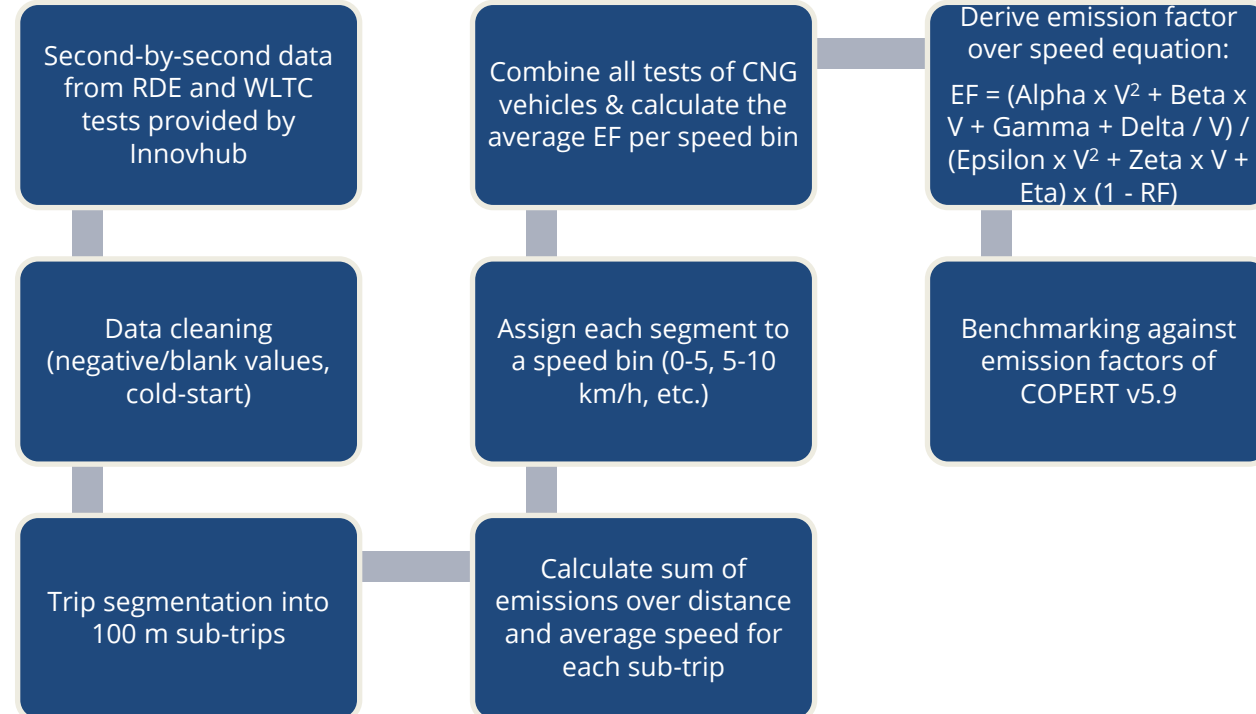
# Revised emission factors of CNG cars



# Revised emission factors of CNG cars: Overview

- Revision of **CNG Euro 6 cars** emission factors, based on measurements conducted by Innovhub<sup>1</sup>
- Available on-road (RDE) and in-lab (WLTC) measurement data for 4 CNG passenger cars of different segment (S/M/L)
- **RDE** test results were utilized for **CO, CO<sub>2</sub>, NO, NO<sub>x</sub>, SPN23** emission factors
- **WTLC** test results were utilized for **CH<sub>4</sub> and HC** emission factors

## Data processing flowchart

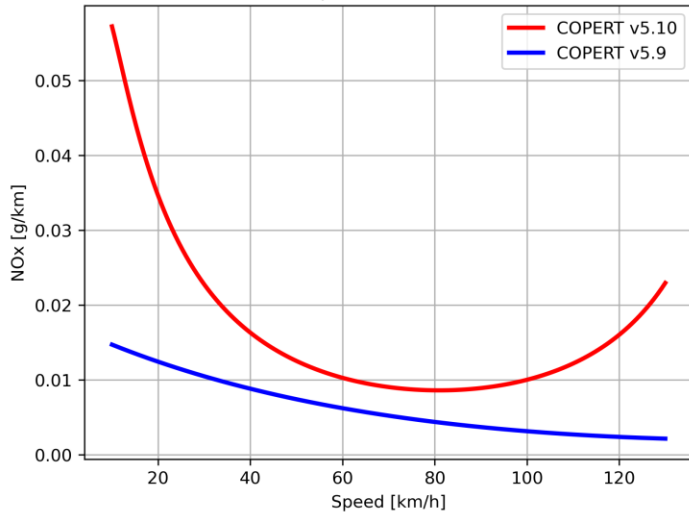


1. [TFEIP\\_Innovhub\\_14\\_May\\_final](#)

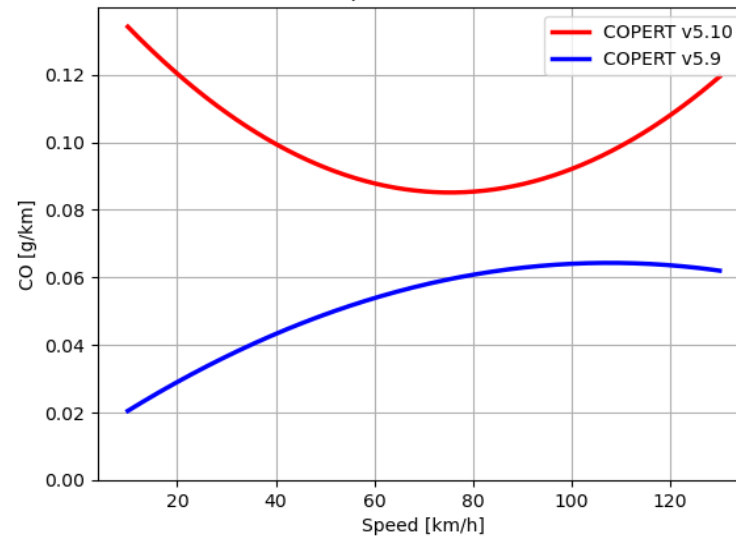


# Revised emission factors of CNG cars: Results

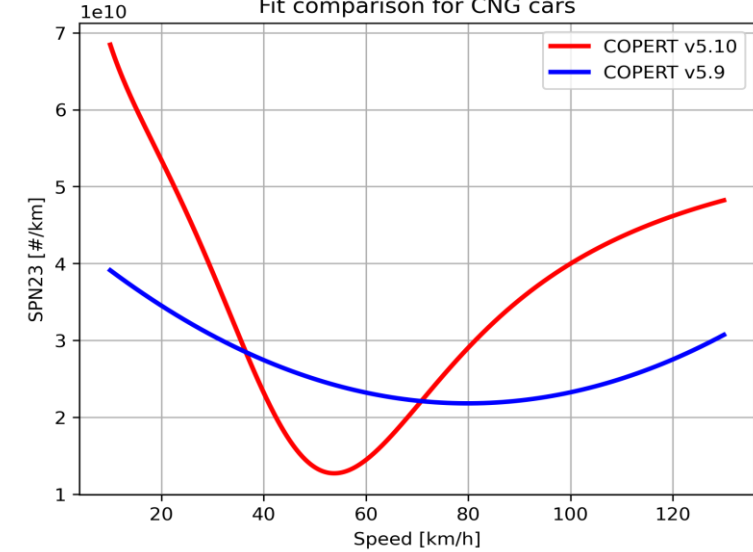
Fit comparison for CNG cars



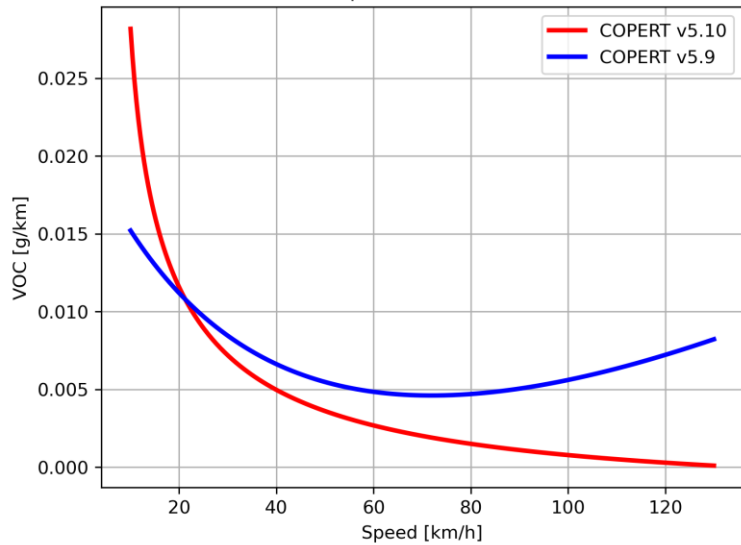
Fit comparison for CNG cars



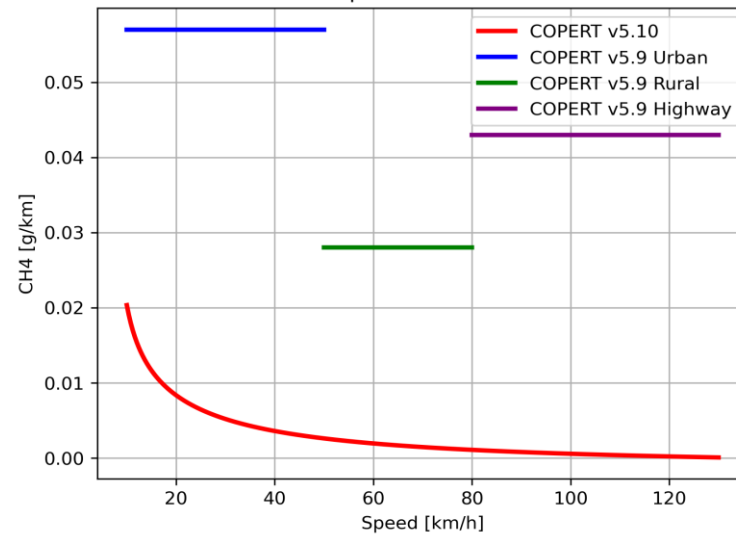
Fit comparison for CNG cars



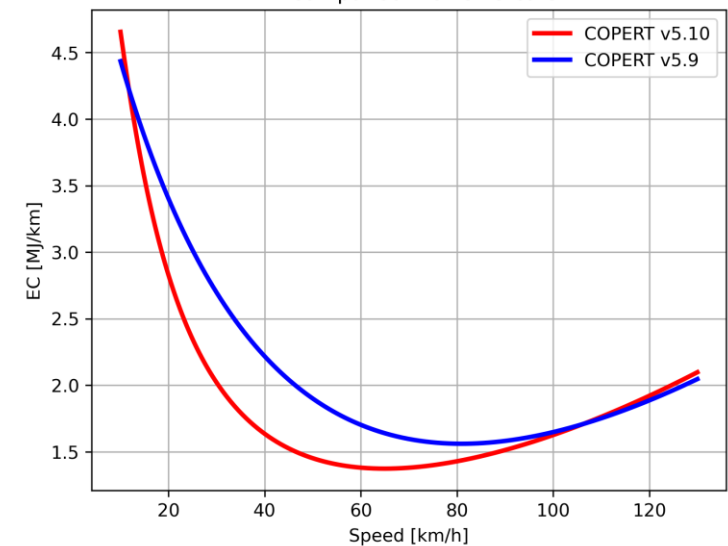
Fit comparison for CNG cars



Fit comparison for CNG cars



Fit comparison for CNG cars



# Introduction of battery electric trucks

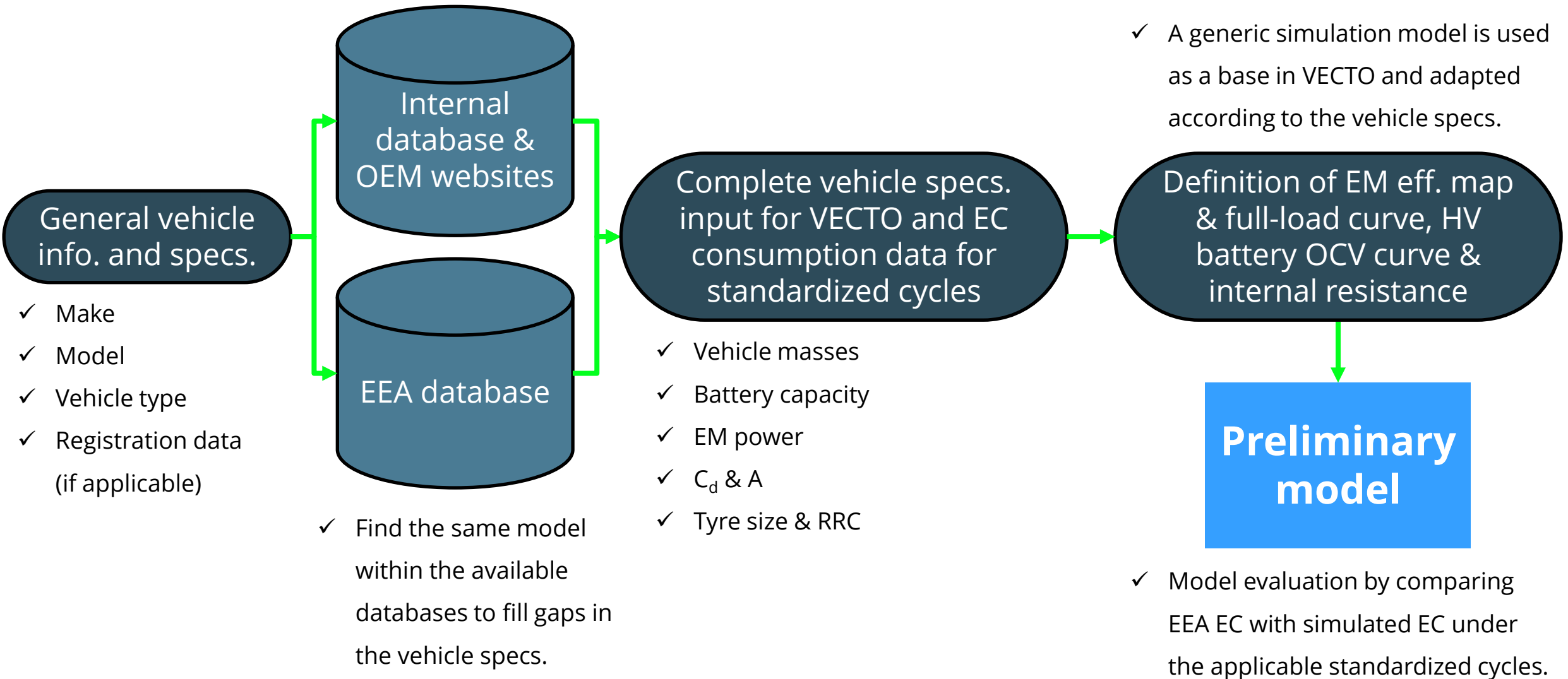


# Battery Electric Trucks: Overview

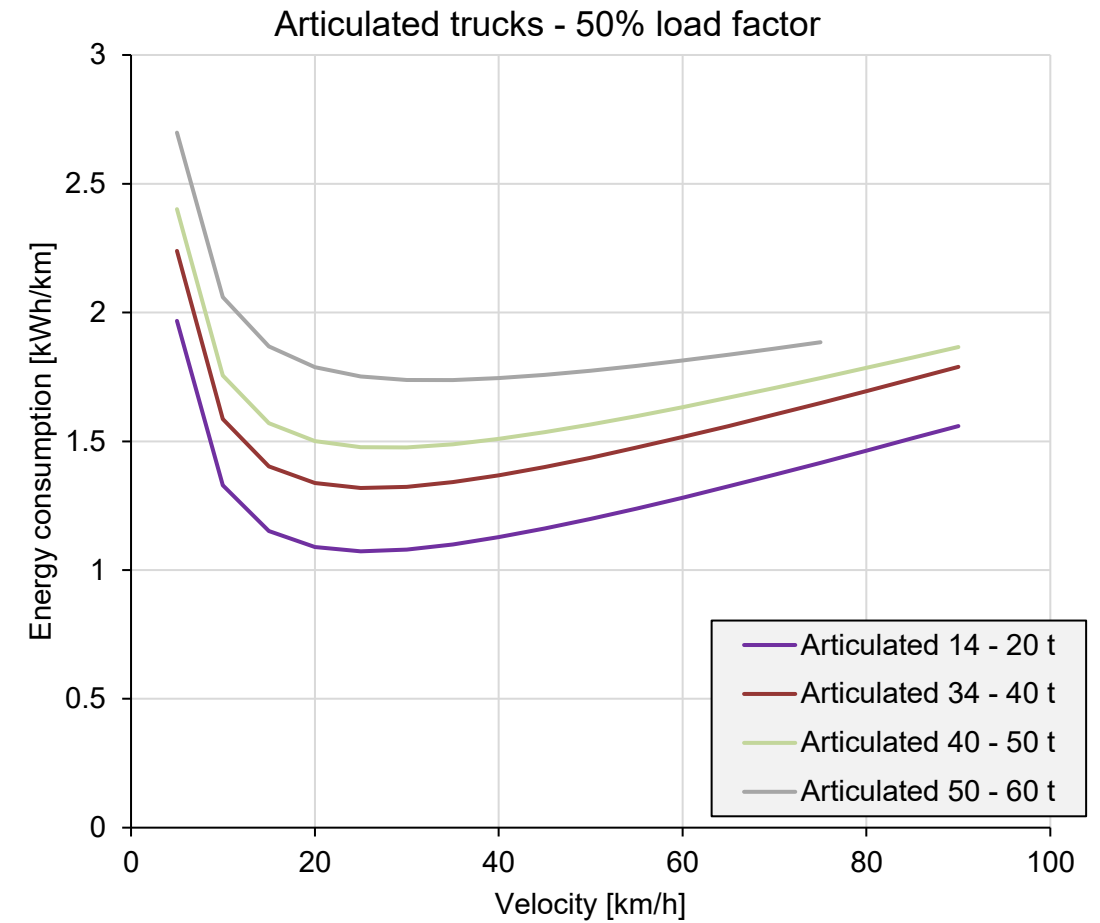
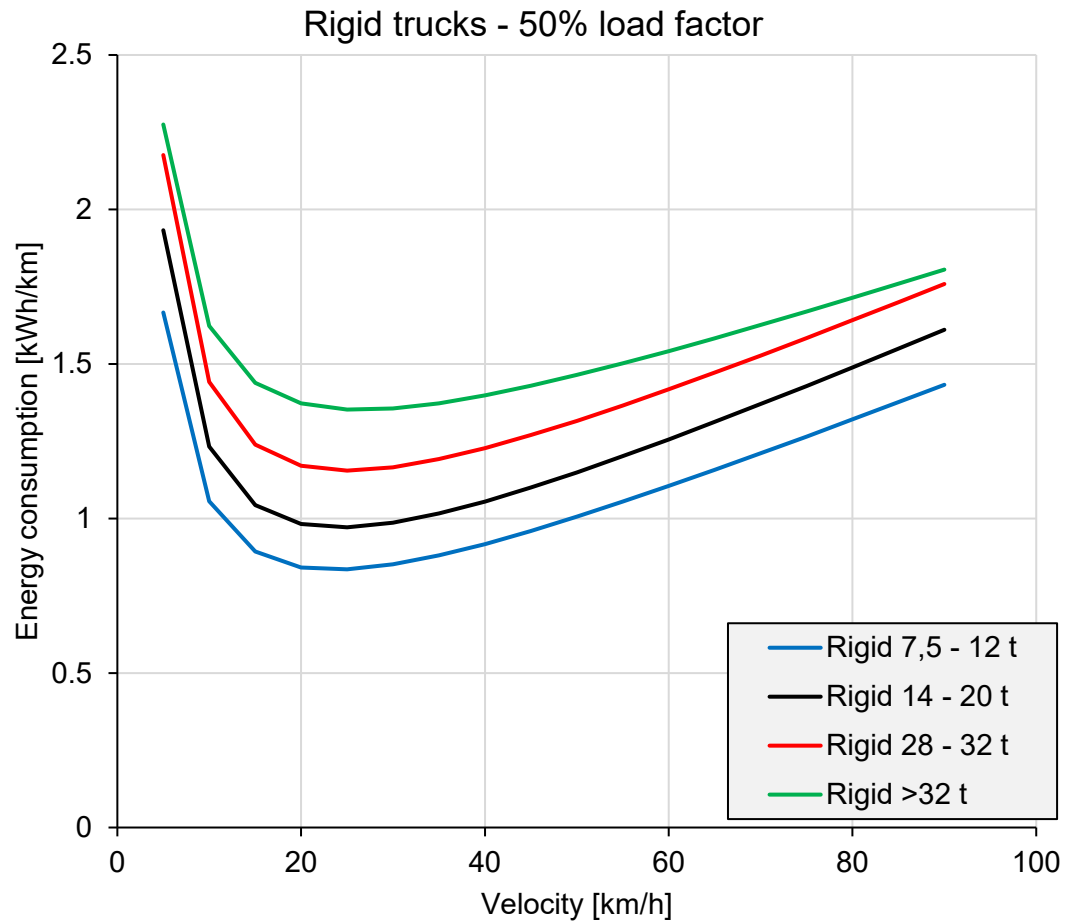
- BET no tailpipe emissions, so focus only on consumption
- Multiple types of BET, scarce consumption measurement data → simulation model using vehicle specifications from public databases (EEA, OEMs, etc.):
  - Segmentation of BET in COPERT same with diesel trucks based on chassis (Rigid/Articulate) & GVW
  - Each model is used to simulate all the selected cases (700 total simulation cases):
    - 20 driving cycles
    - different cases for road slope (-6% – 6% with a 2% step)
    - load factor (0-100% with a 25% step) are simulated
    - Auxiliaries' consumption kept constant for all the cases
- Results validated vs standardized cycles & are automatically processed to derive the speed-dependent consumption factors for each road grade & load factor combination



# Battery Electric Trucks: Vehicle model creation flowchart

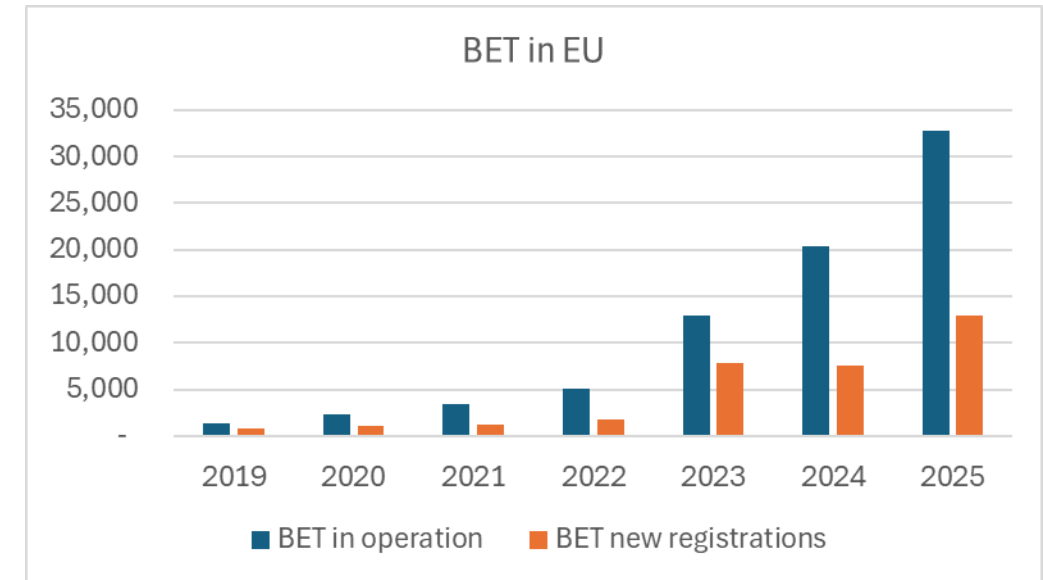


# Battery Electric Trucks: Results



# Battery Electric Trucks: Impact

- Battery Electric Trucks (BET) were not part of COPERT until v5.9
- Still low uptake (0.5%) of BET in EU fleet but increasing market share among total HDTs sales<sup>1,2,3</sup>
- The market uptake of BET is expected to grow exponentially over the next years (together with hydrogen-fueled trucks) so that OEMs meet the 45% CO2 reduction target<sup>4</sup> by 2030
- Therefore, BET mainly important for projections



1. [New commercial vehicle registrations: vans -8.8%, trucks -6.2%, buses +7.5% in 2025 - ACEA - European Automobile Manufacturers' Association](#)  
2. [Report - Vehicles on European roads 2026 - ACEA - European Automobile Manufacturers' Association](#)  
3. [European Union \(EU27\) | European Alternative Fuels Observatory](#)  
4. [Lorries, buses and coaches - Climate Action - European Commission](#)

# Revised emission factors of L-category vehicles

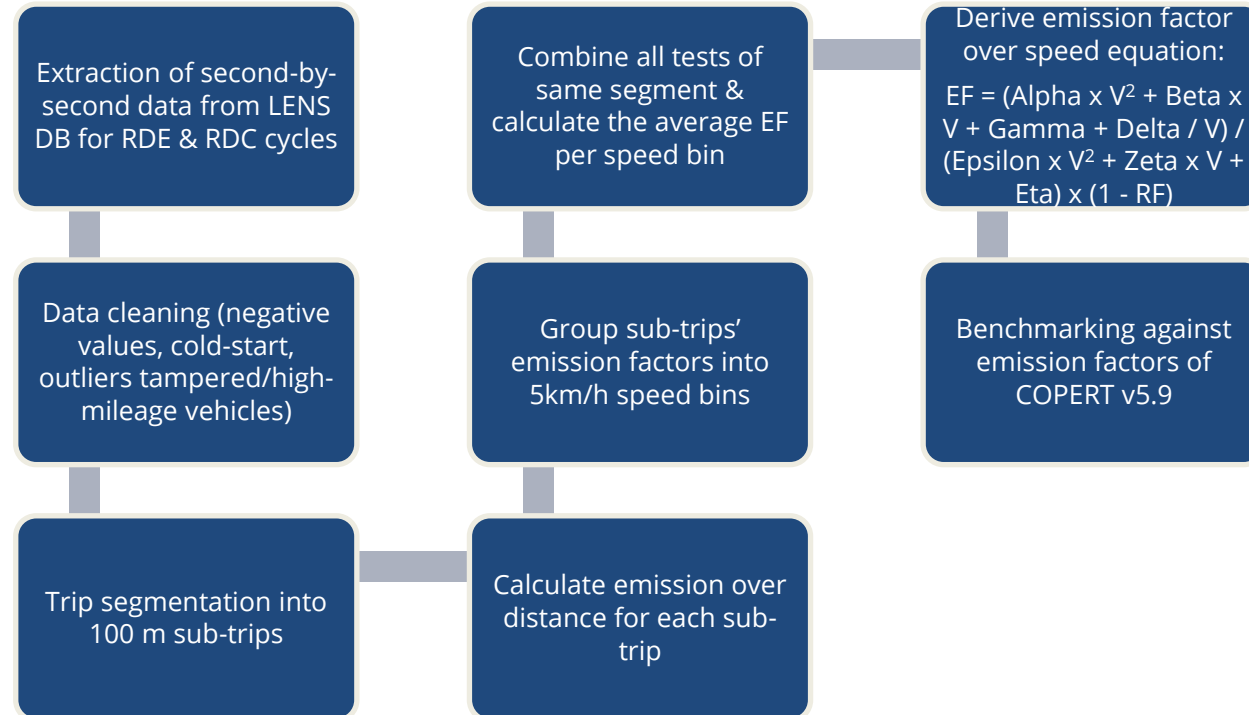


# Revised emission factors of L-cat vehicles: Overview

- Horizon Europe L-vehicles Emissions and Noise mitigation Solutions<sup>1</sup> (LENS). Project Activities:
  - 150 vehicles tested in-lab & on-road for emissions & noise
  - Remote sensing and tampering detection
  - Recommendations for pollutants & noise reduction
- Utilizing results of LENS for updating emission factors in COPERT:
  - Motorcycles, Mopeds, Quad & ATVs, Micro-cars
  - All Euro standards
  - EC, CO, NO<sub>x</sub>, NO<sub>2</sub>, PM, SPN, VOC, CH<sub>4</sub>, NH<sub>3</sub>, N<sub>2</sub>O



## Data processing flowchart



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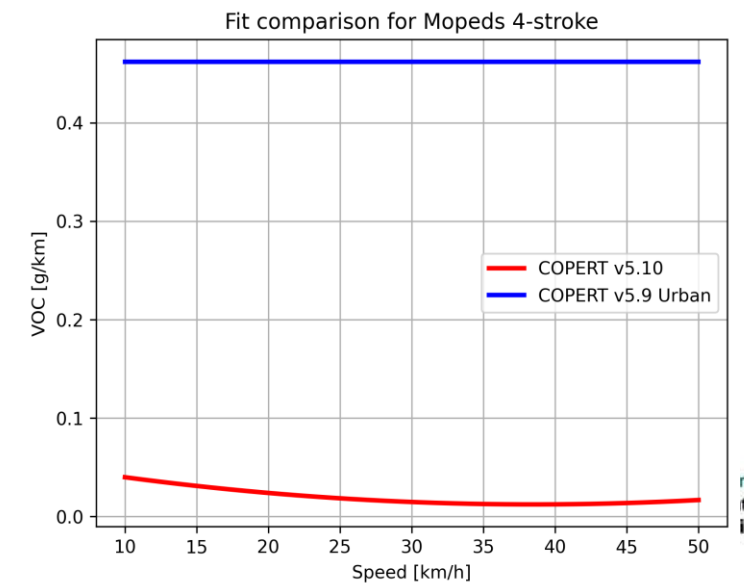
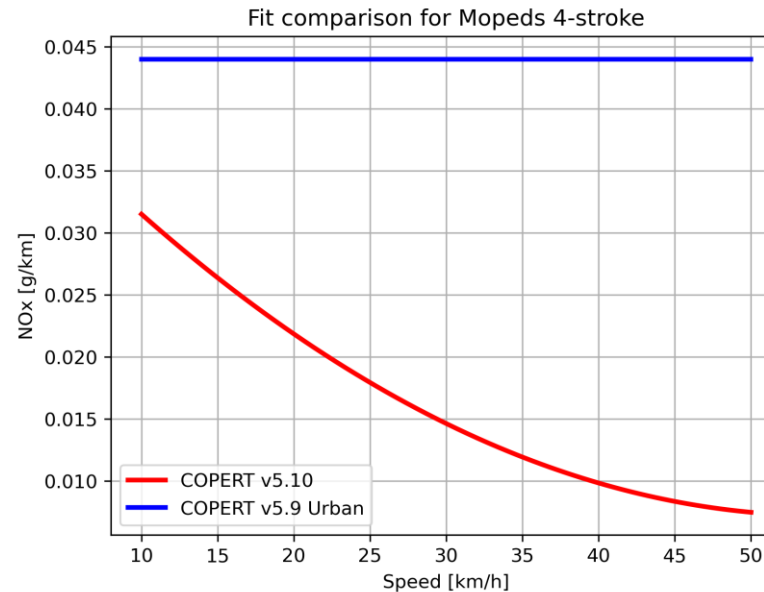
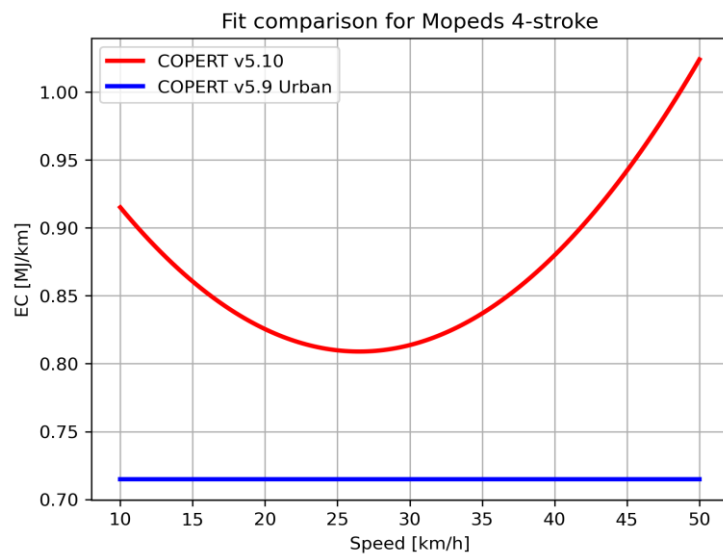
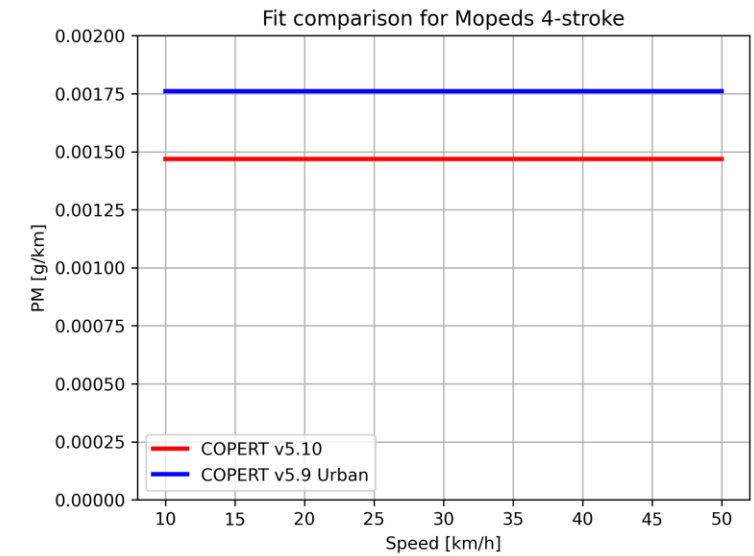
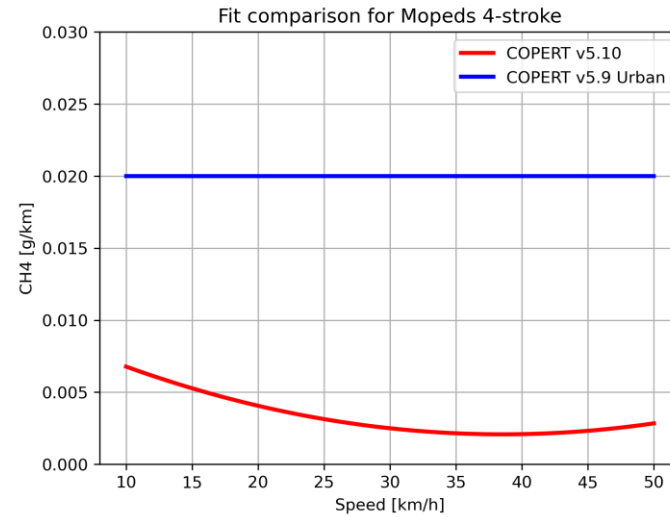
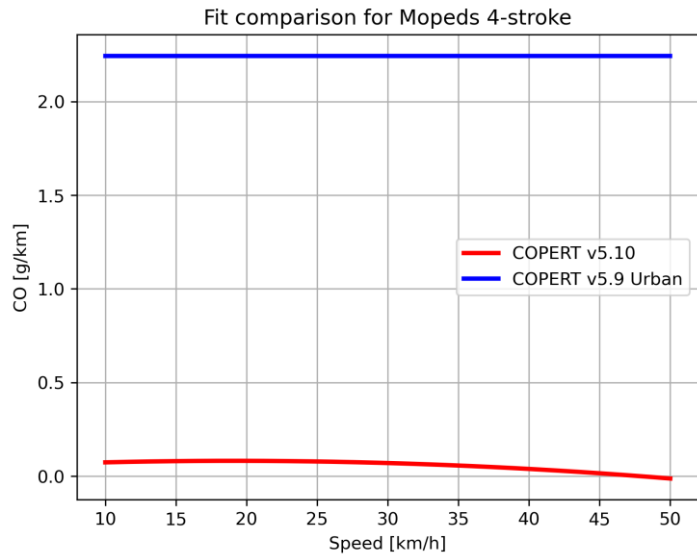
European Environment Agency  
European Topic Centre  
Climate change mitigation



1. [LENS - L-vehicles Emissions and Noise mitigation Solutions](#)

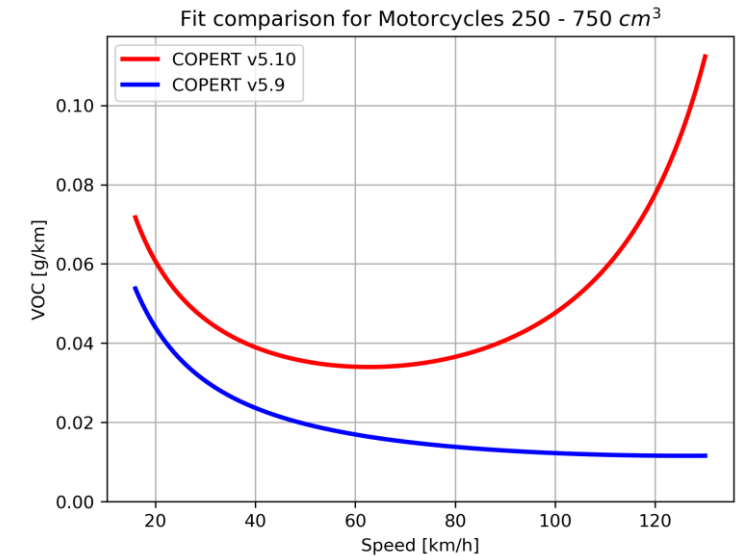
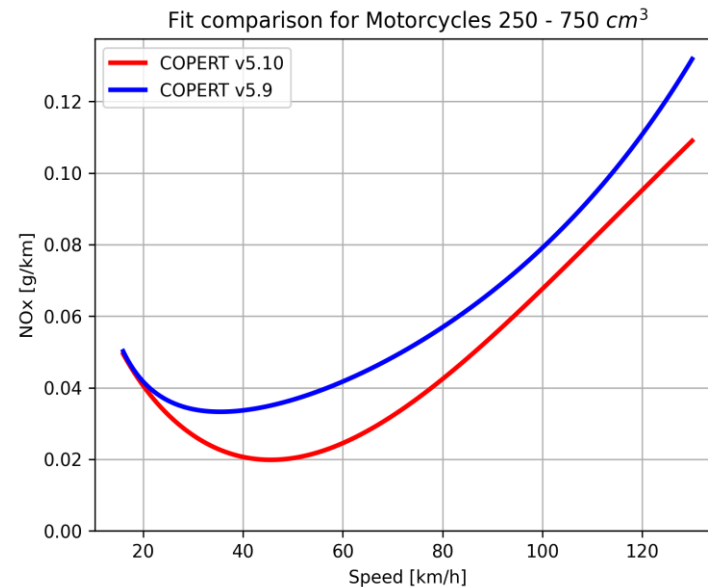
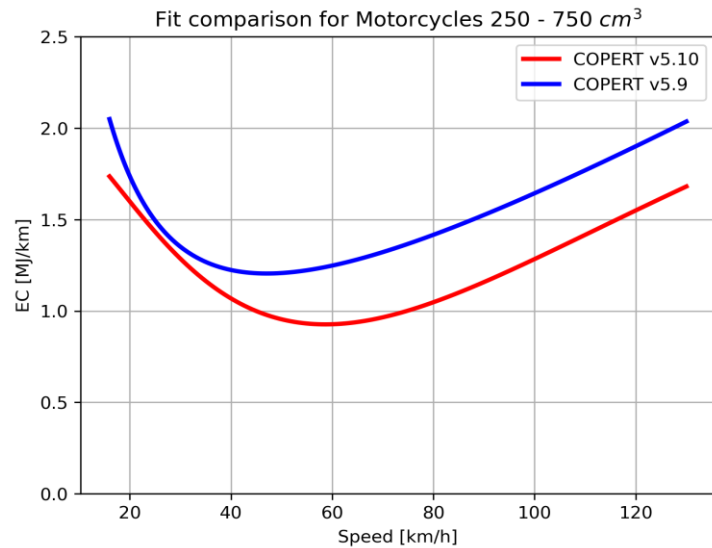
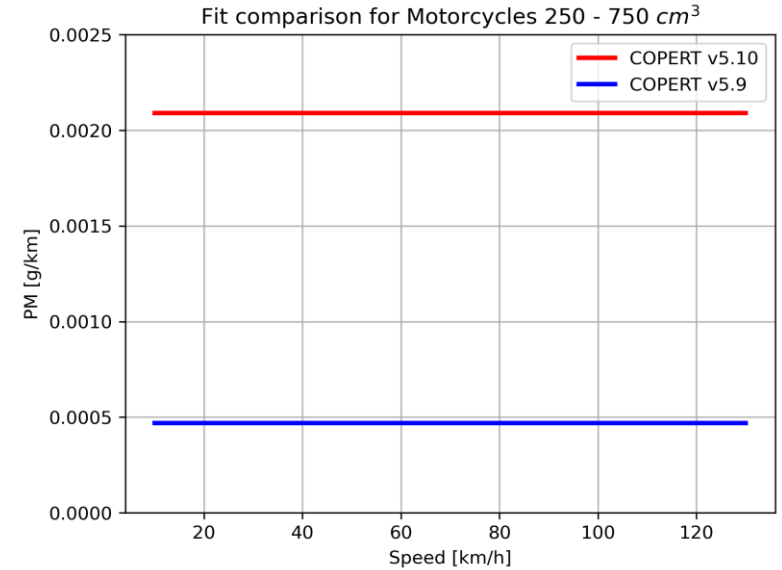
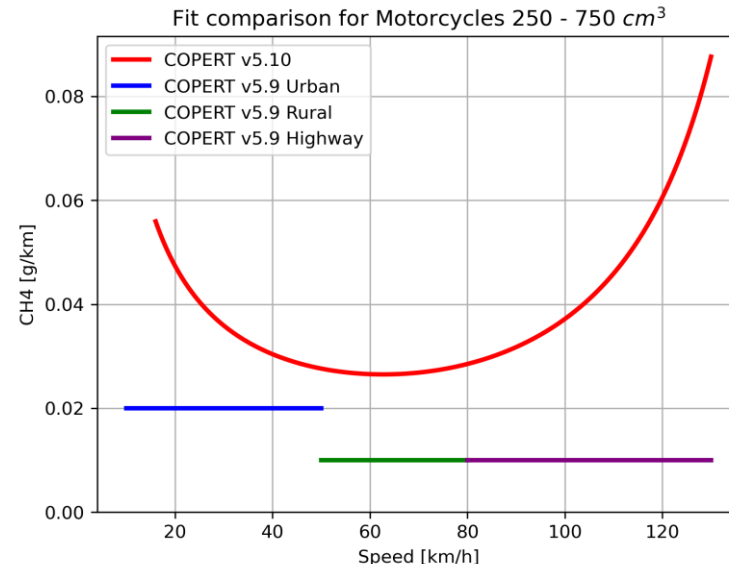
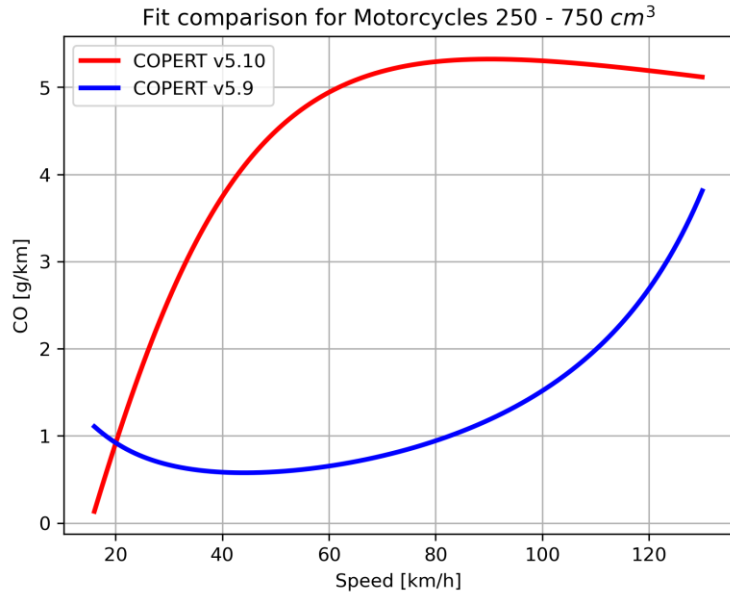
# Revised emission factors of motorcycles: Results

## Results for Mopeds 4-stroke <math> < 50 \text{ cm}^3 </math>



# Revised emission factors of motorcycles: Results

## Results for Motorcycles 4-stroke 250 – 750 cm<sup>3</sup>



# Software improvements & bug corrections



# Software improvements & bug corrections

- Corrections in the calculation of evaporative emissions (leading to a small decrease)
- Correction when importing hot parameters from excel
- Corrections in CH<sub>4</sub>/VOC of Euro 7 HDVs
- Minor improvements in the software



# Impact of all 2026 updates on emission inventories



# Overall impact of 2026 updates in emission inventories

Emissions* Growth (%)	Passenger Cars	Light Commercial Vehicles	Heavy-Duty Vehicles	L-category	All fleet
Over 10% increase				NH3, SPN, CO, PM,	
Up 10% increase		CO2, SO2		N2O	CO, NH3
Up to 10% decrease	CO, VOC <sub>exh</sub> , CH4, CO2, SO2			CH4, CO2, SO2	CH4, VOC
Over 10% decrease	VOC <sub>evap</sub>			VOC <sub>evap</sub>	
Minor (+-1%) or no change	Rest	Rest	Rest**	Rest	Rest

\*Growth is calculated compared to 2025 COPERT version (v5.9.2) using EU fleet data for 2024-2025. Variations may occur among the EU countries and across years.

\*\* Introduction of battery electric trucks (BET) may have a small impact in energy consumption of emission inventories.



**Thank you for your attention!**  
**For more information, please see our [website](#)**  
**or contact us at [support@emisiam.com](mailto:support@emisiam.com)**



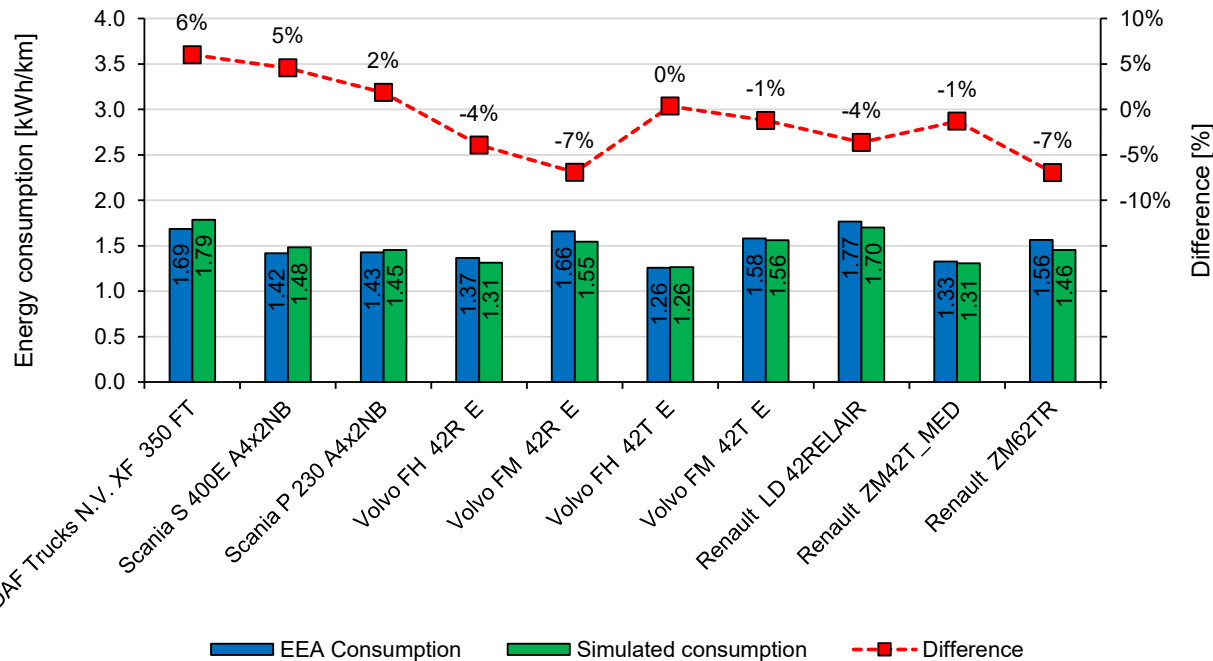
# Back-up slides



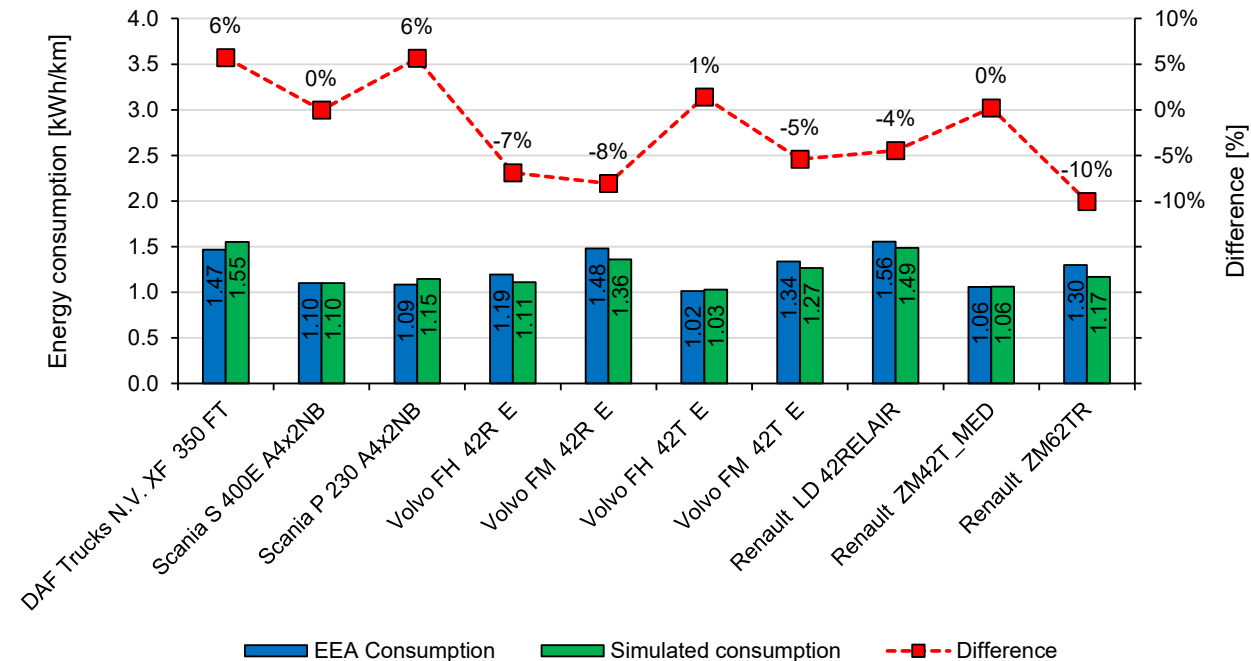
# Battery Electric Trucks: Simulation models validation

Energy consumption comparison between EEA data and simulation results after model calibration

Longhaul - High payload



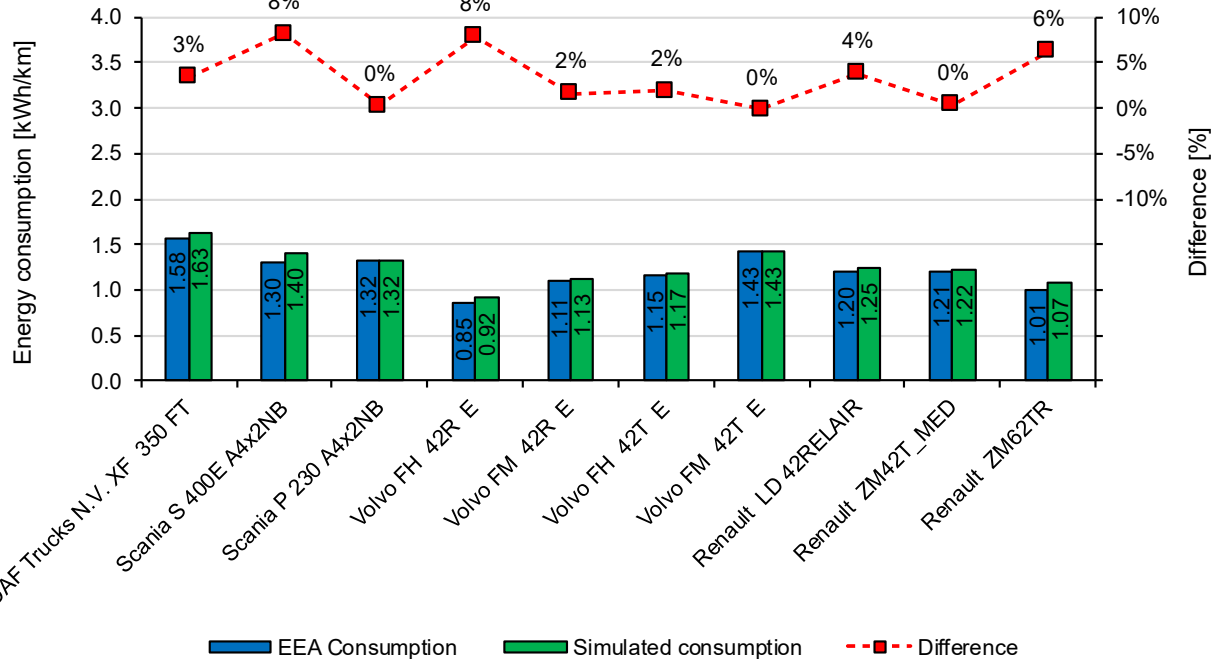
Longhaul - Low payload



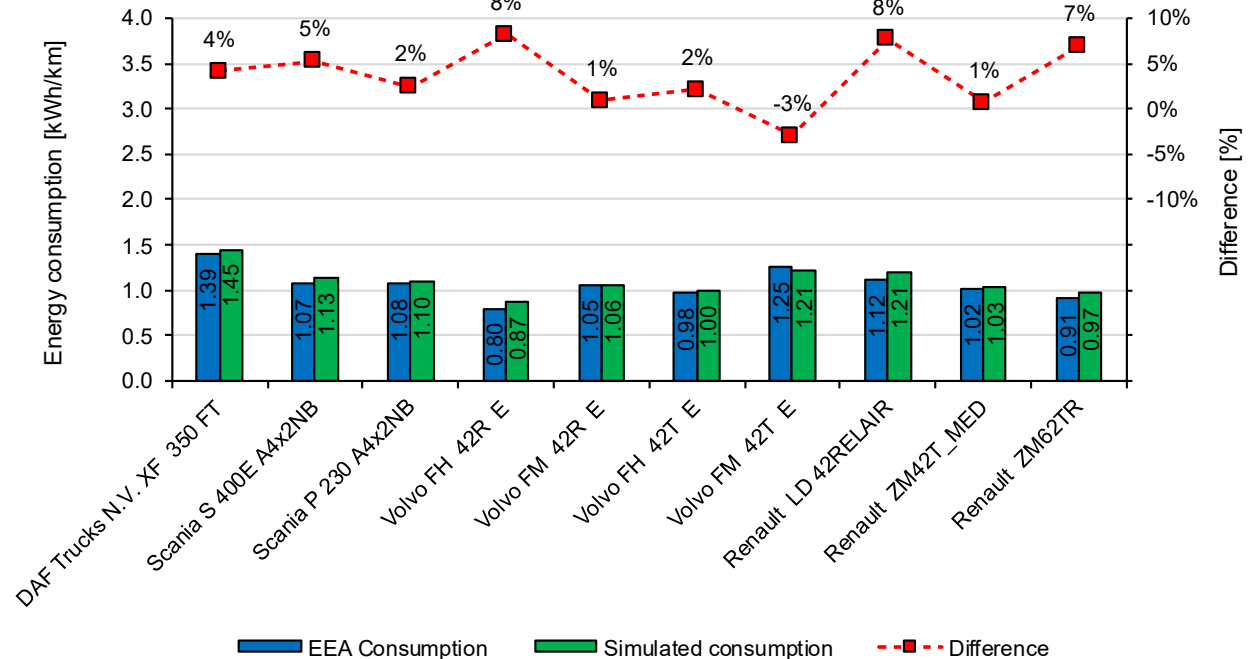
# Battery Electric Trucks: Simulation models validation

## Energy consumption comparison between EEA data and simulation results after model calibration

Regional Delivery - High payload



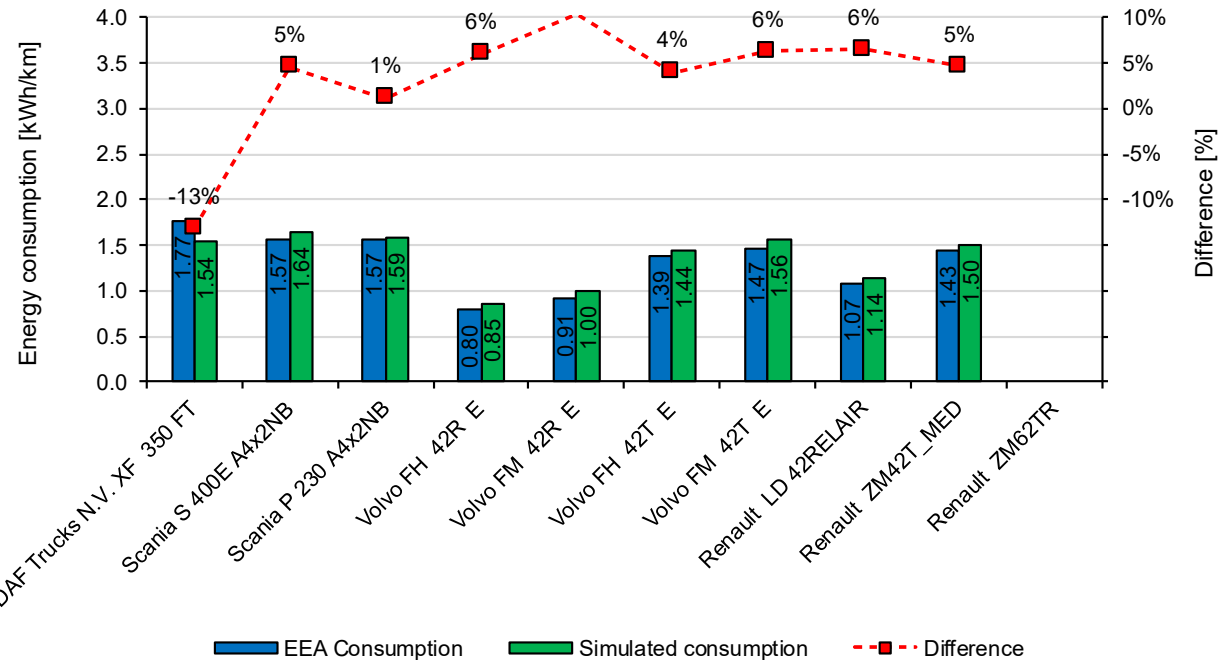
Regional Delivery - Low payload



# Battery Electric Trucks: Simulation models validation

## Energy consumption comparison between EEA data and simulation results after model calibration

Urban Delivery - High payload



Urban Delivery - Low payload

