# COPERT Training

# 1. Emissions from the road transport sector

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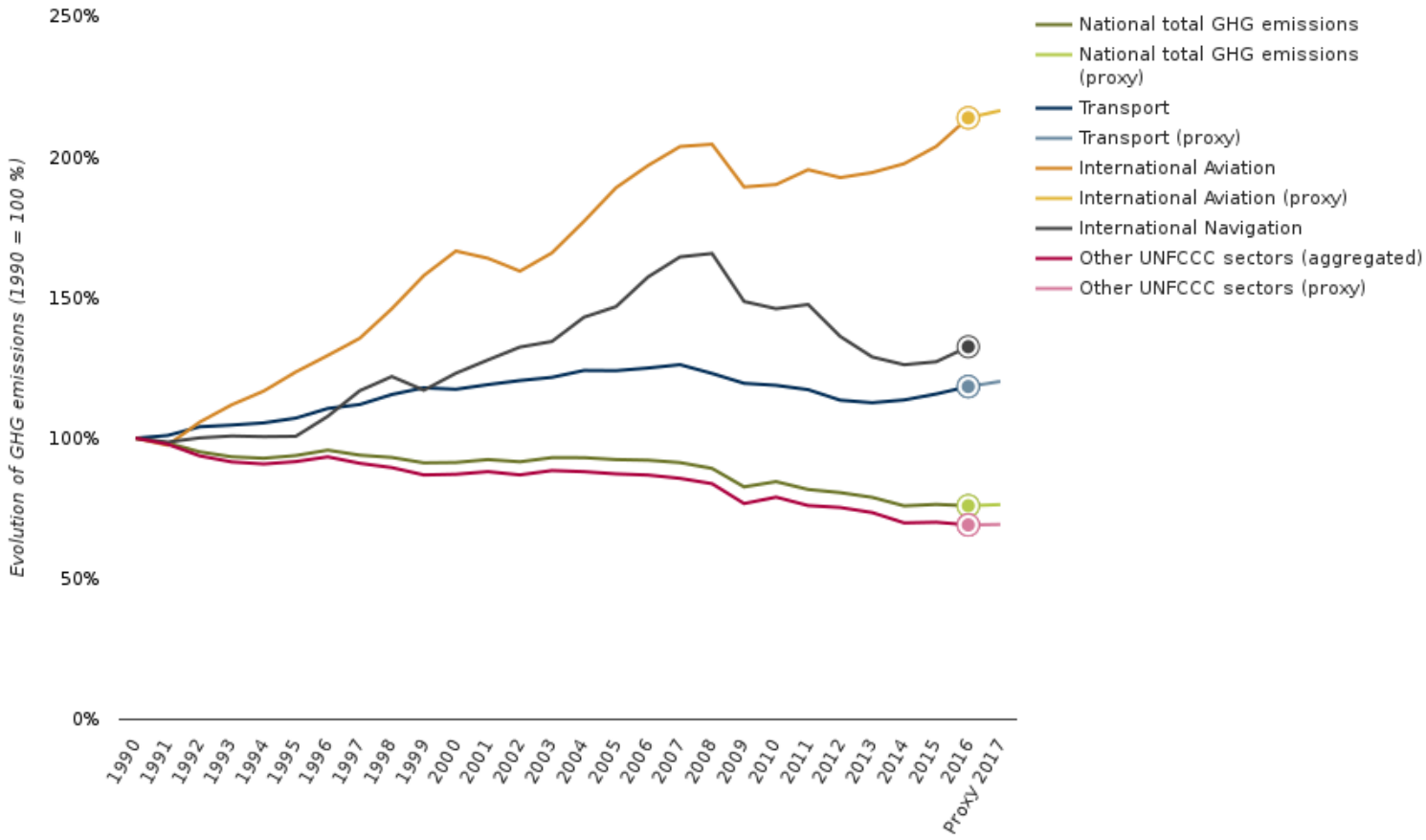
# Why transport emissions are so important

- Transport represents almost a quarter of Europe's greenhouse gas emissions and is the main cause of air pollution in cities
- The transport sector has not seen the same gradual decline in emissions as other sectors
- **The only sector with emissions remaining higher than in 1990!**

Evolution of GHG emissions by sector in the EU



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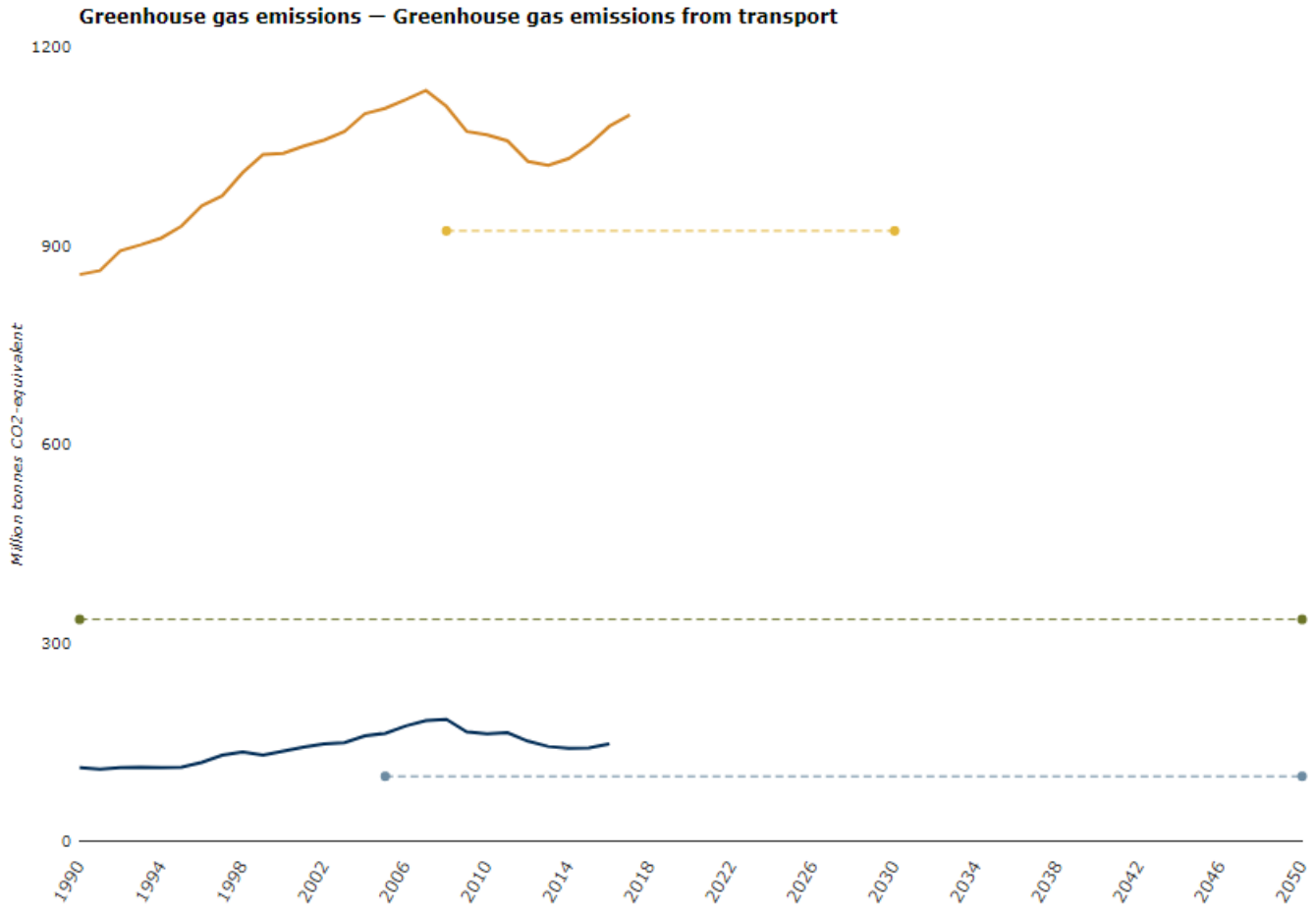
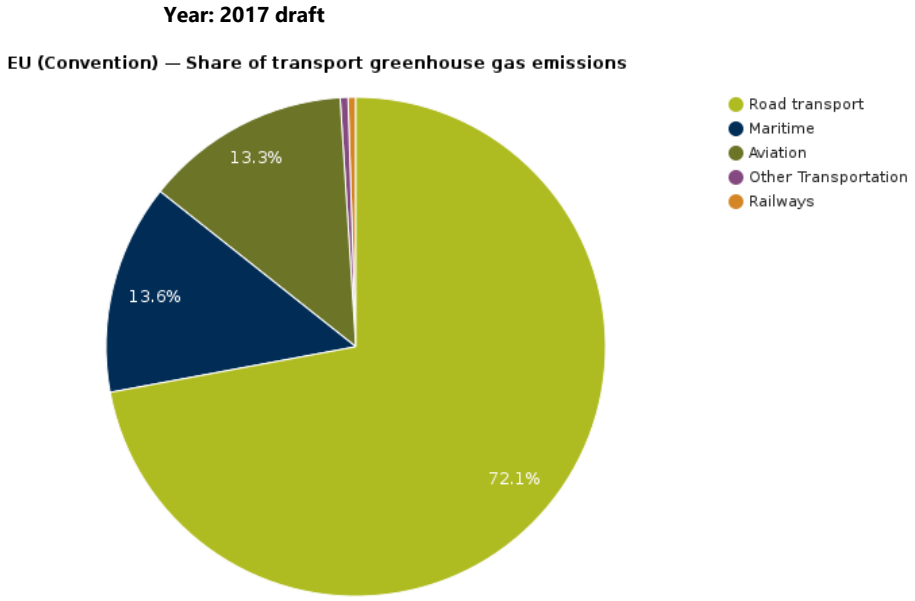
# GHG emissions from transport




- Transport accounts for 1/3 of total energy consumption and 1/4 (27%) of total GHG emissions
- Road transport alone contributes to 1/5 (22%) of total EU GHG emissions



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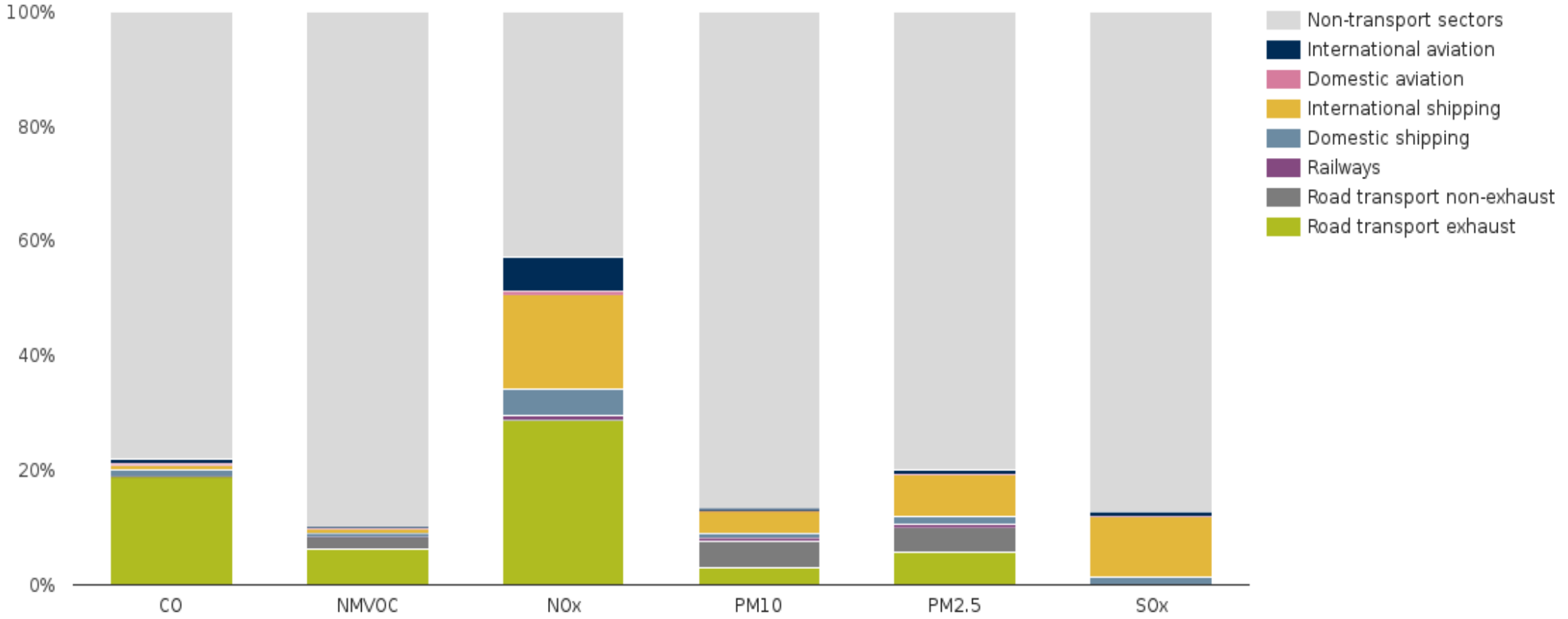
# Contribution of transport to total emissions

Chart — Contribution of the transport sector to total emissions of the main air pollutants




**Year: 2017 draft**



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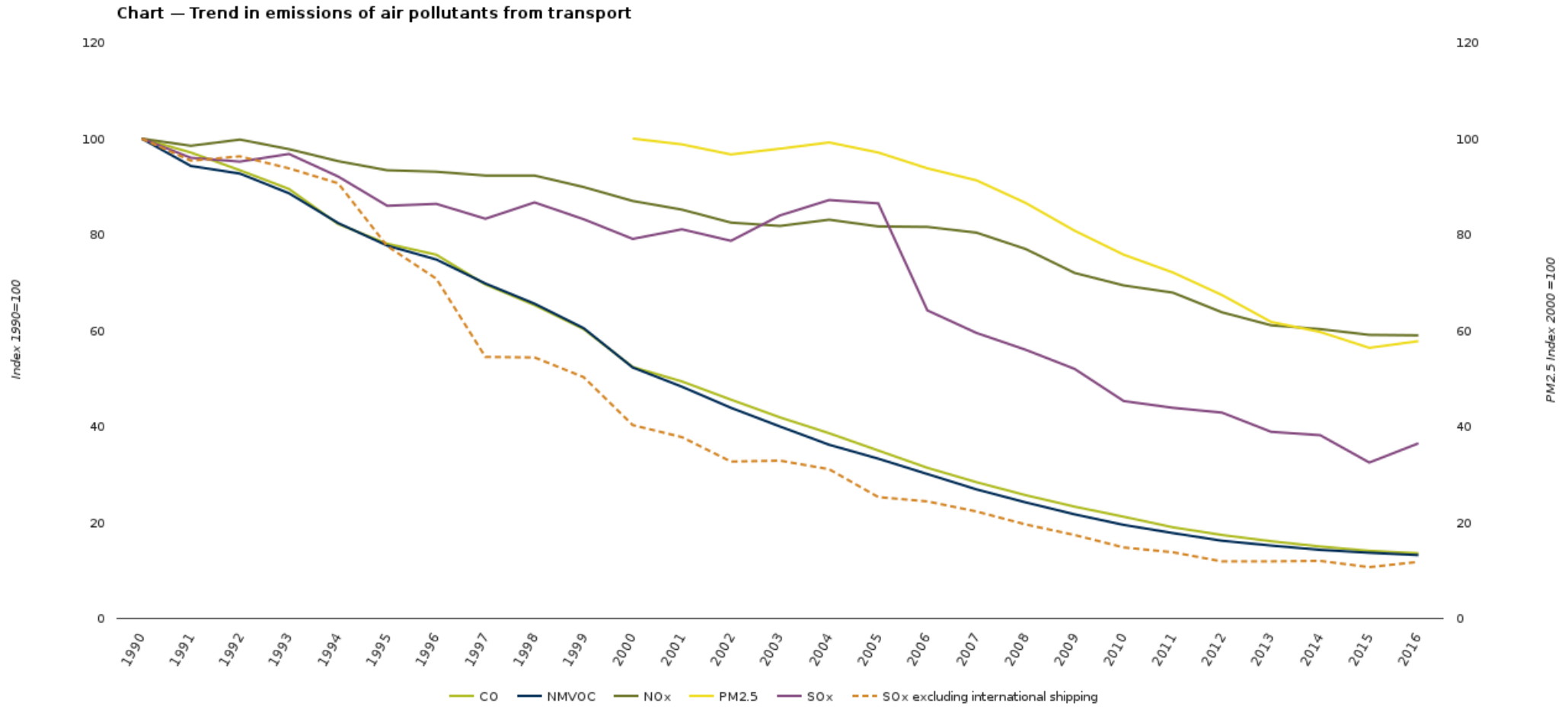
# Air pollutant emissions from transport




Emissions are decreasing, however…



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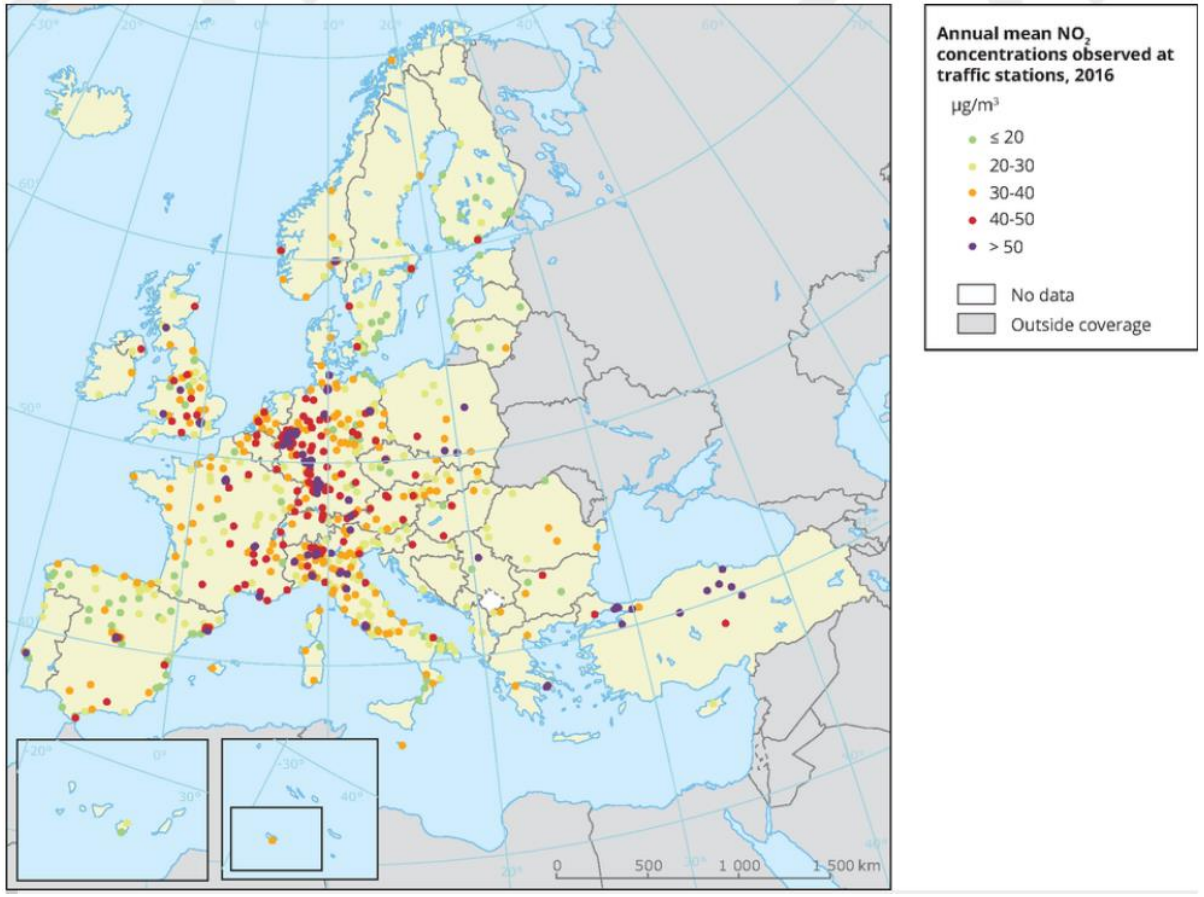
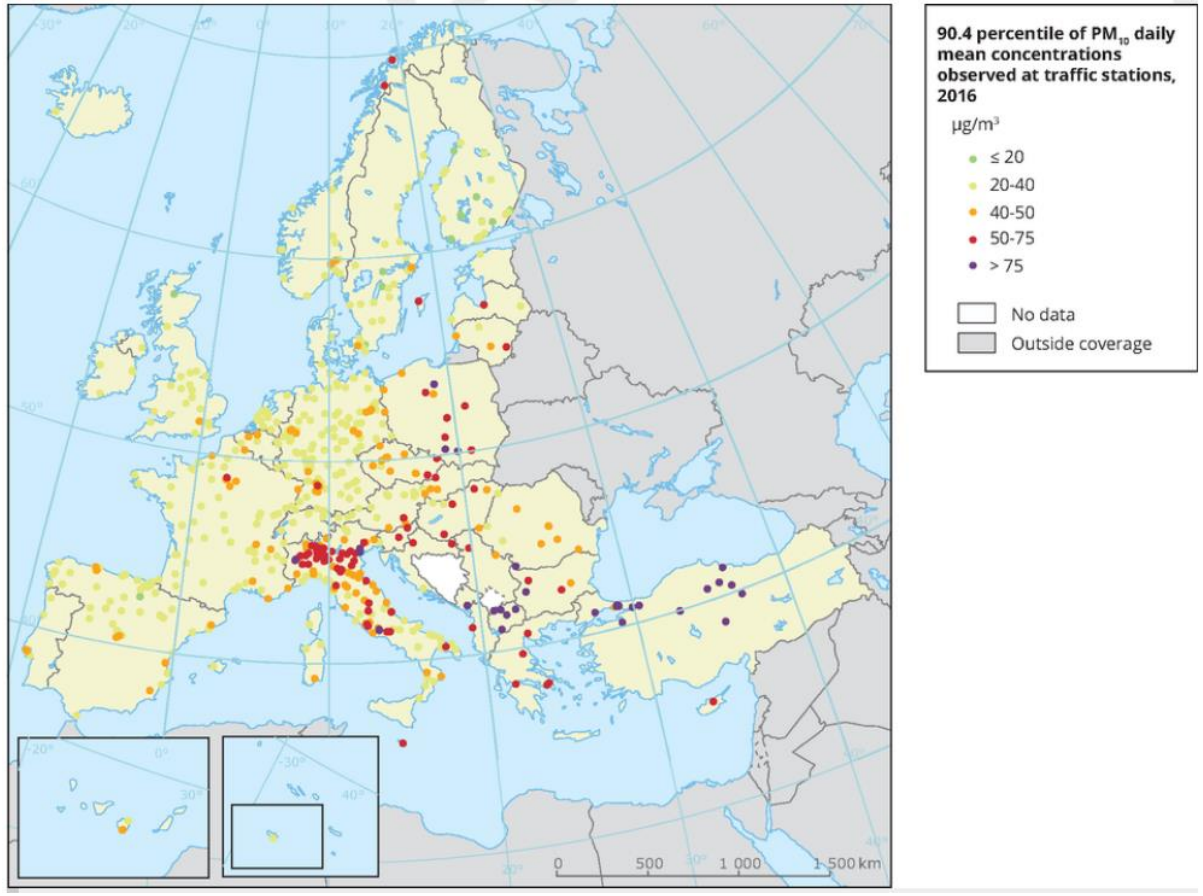
# Air Quality exceedances due to traffic



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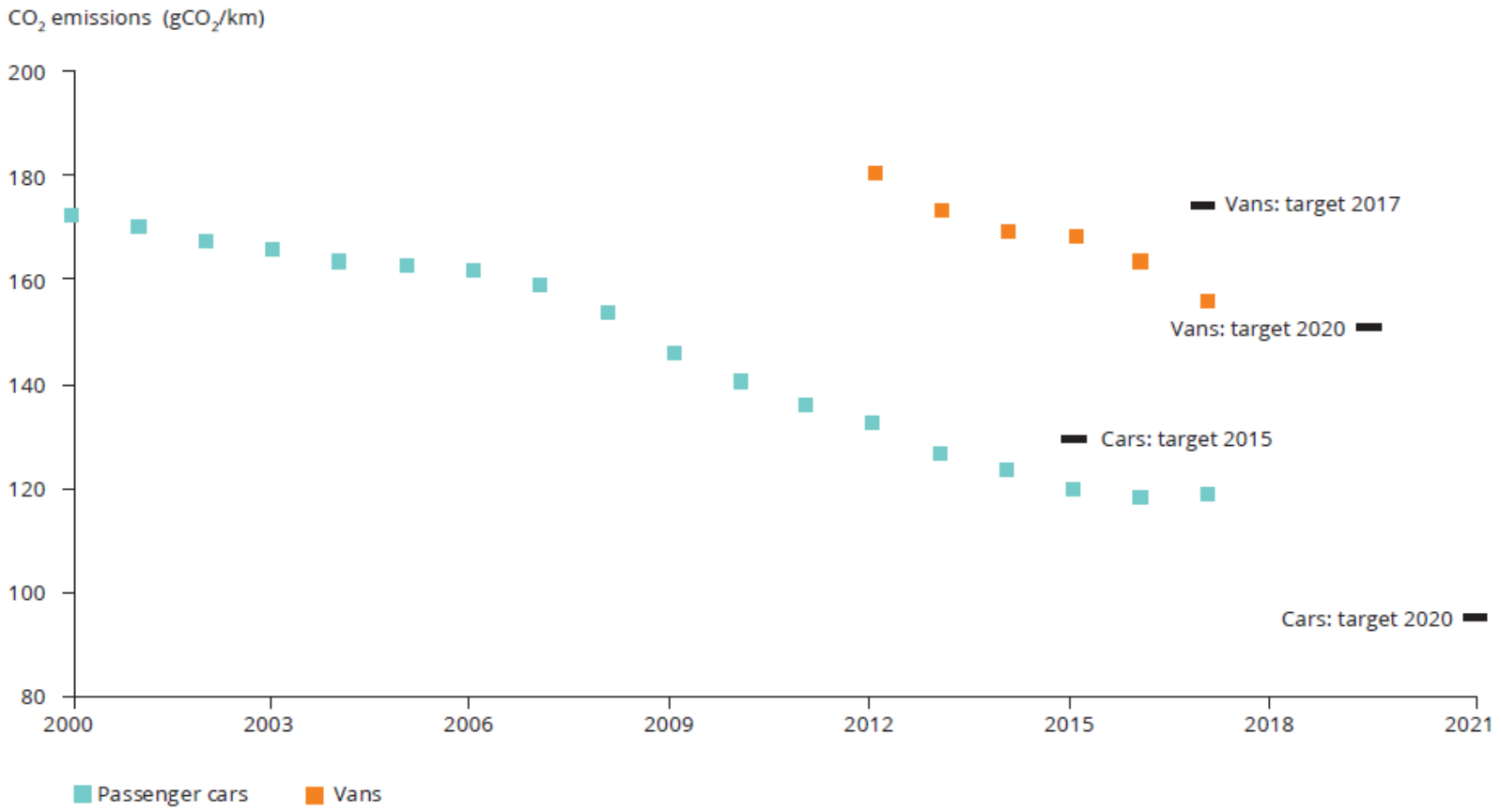
# Average $CO_2$ emissions and targets for cars and vans




- Car and van manufacturers have already met their specific $CO_2$ emissions targets for 2015/2017
- More effort is needed to meet the emissions targets for 2020/2021



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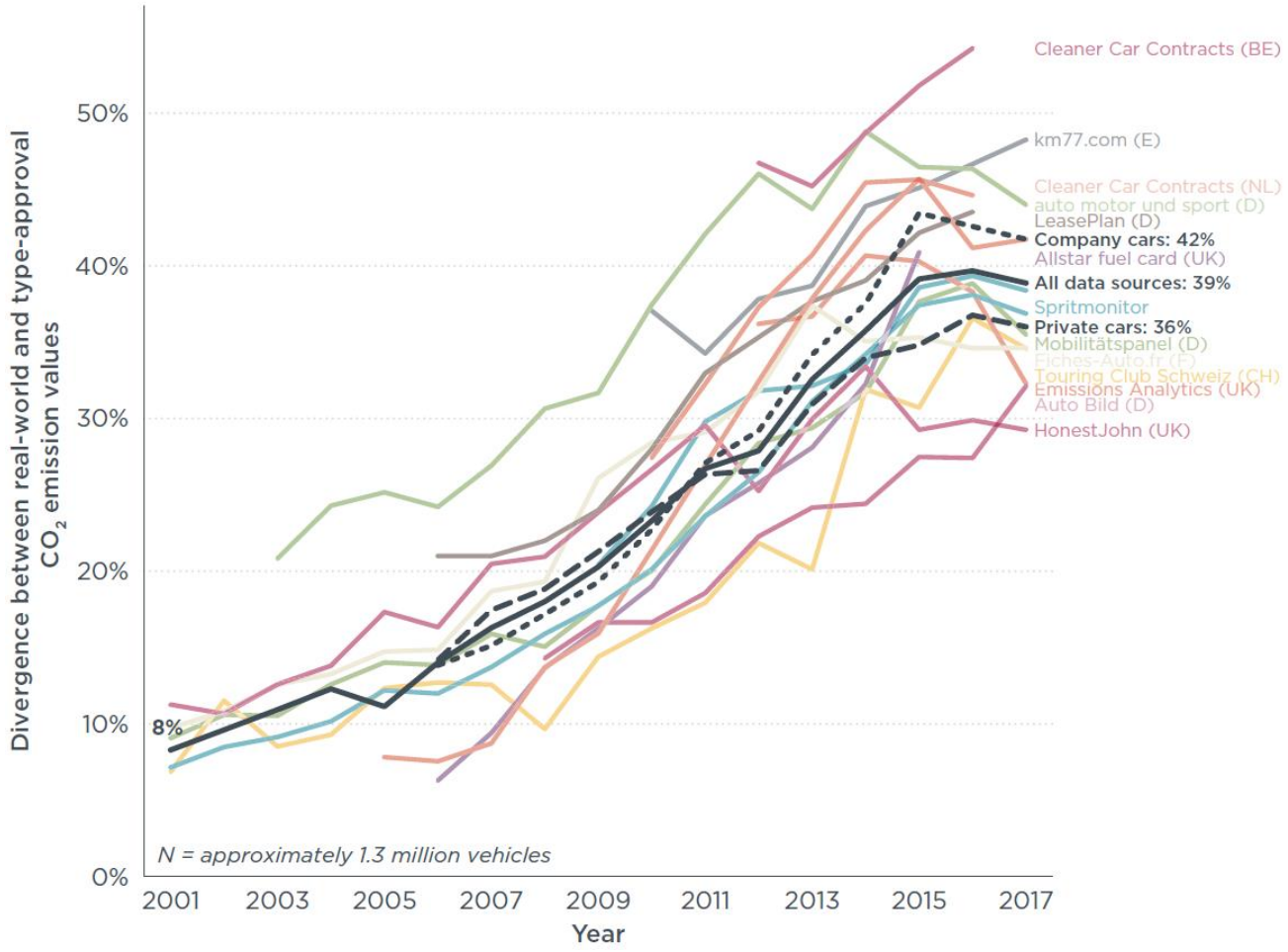
# Real-world $CO_2$ emissions are different




- There is a gap between real-world and official $CO_2$ emissions / fuel consumption
- **The gap is increasing over the years (from 8% in 2021 to 39% in 2017)!**



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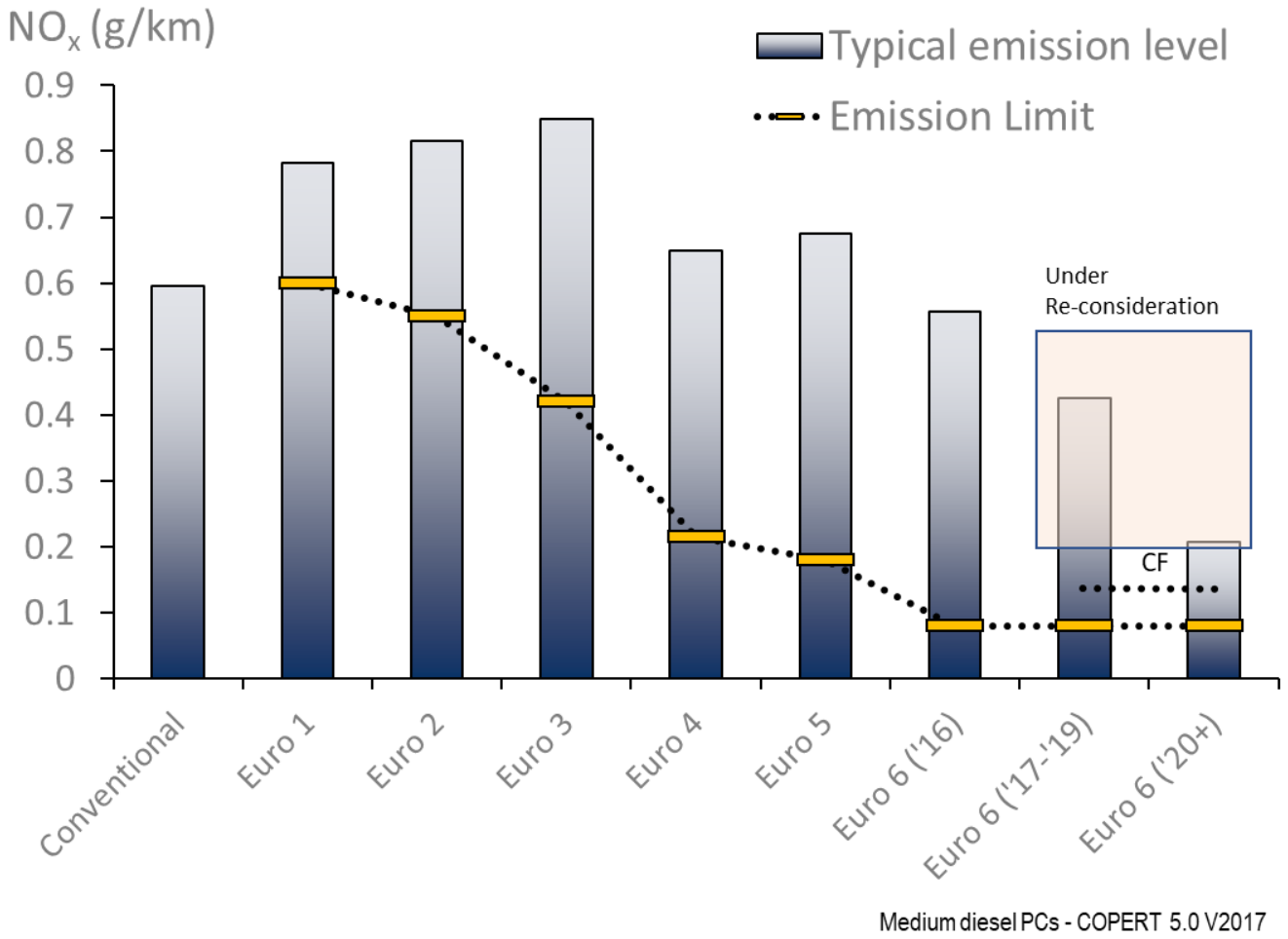
# Real-world diesel PC NOx emissions




Medium diesel PCs - COPERT 5.0 V2017

- Significant exceedances up to Euro 5
- Expected reductions at Euro 6 step
- Still limited evidence – models under revision



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# Air policy in Europe

- The EU has introduced and implemented various legal instruments with the objective of achieving levels of air quality that do not adversely impact human health and the environment
- The overarching policy framework is the EU Thematic Strategy on Air Pollution (TSAP), adopted by the Commission in 2005
- National Emission Ceilings Directive
- Air Quality Directive on ambient air quality and cleaner air for Europe regulates concentrations of $SO_2$, $NO_2$, $PM_{10}$, $PM_{2.5}$, CO, $O_3$, benzene and lead.

# Transport targets up to 2050 (1/2)

| Target | Date | Source |
|---|---|---|
| Transport GHG (including international aviation, excluding international maritime shipping)<br>- 20 % ↓ (versus 2008)<br>- 60 % ↓ (versus 1990) | <br>2030<br>2050 | Transport White Paper, 2050 Roadmap |
| 10 % share of renewable energy in the transport sector final energy consumption for each Member State | 2020 | Renewable Energy Directive |
| Fuel suppliers to reduce lifecycle GHG of road transport fuel 6–10 % ↓ (versus 2010 fossil fuels) | 2020 | Fuel Quality Directive |
| Target average type-approval emissions for new passenger cars<br>- 130 g $CO_2$/km<br>- 95 g $CO_2$/km | <br>2015<br>2021 | EC Regulation 443/2009 |
| Target average type-approval emissions for new light vans<br>- 175 g $CO_2$/km<br>- 147 g $CO_2$/km | <br>2017<br>2020 | EC Regulation 510/2011 |
| EU fleet-wide $CO_2$ emission targets for new passenger cars and vans<br>- 15 % ↓ for cars and 15 % ↓ for vans (versus 2021)<br>- 37.5 % ↓ for cars and 31 % ↓ for vans (versus 2021) | <br>2025<br>2030 | EC Regulation 631/2019 |



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# Transport targets up to 2050 (2/2)

| Target | Date | Source |
|---|---|---|
| Road freight over 300 km shift to rail/ waterborne transport<br>- 30 % shift<br>- 50 % shift | <br>2030<br>2050 | Transport White Paper |
| Use of conventionally fuelled cars in urban transport<br>- 50 % ↓<br>- 100 % ↓ | <br>2030<br>2050 | Transport White Paper |
| $CO_2$ free city logistics in major urban centres | 2030 | Transport White Paper |
| The majority of medium-distance passenger transport should go by rail | 2050 | Transport White Paper |
| EU $CO_2$ emissions of maritime bunker fuels 40 % ↓ (versus 2005) | 2050 | Transport White Paper |
| 40 % share of low carbon sustainable fuels in aviation | 2050 | Transport White Paper |

# Thank you for your attention!



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