

The European Commission's science and knowledge service

Joint Research Centre



Emissions during WLTC 3 phases and 4 phases at -7 °C

R. Suarez-Bertoa

Sustainable Transport Unit, Energy Transport & Climate

16 April 2018, JRC, Ispra

Introduction

- To what extent emission factors (mass/distance units) would be affected if only 3-phases of WLTC (~ 15 km) are integrated instead of 4-phases (~ 23.3 km) ?
- What fraction of the total emissions would be neglected if only 3-phases are considered?

Experimental

- Euro 6b passenger cars: 6 diesel and 7 petrol
- Tested following Type 1-like procedure at -7 °C
- Road load at -7 °C as described in Type 6 Reg. 83 (i.e., 10% reduction of coast-down time)

Influence on emission results if 4th phase of WLTC is omitted at -7 °C

- Influence (%) on emission factors (i.e., mass/distance units). In brackets standard deviation;
- Comparing 3-phase result to 4-phase result;
- Emission factors integrating 3-phases are higher than integrating 4-phases, for most pollutants.

# Vehicles	6 Diesel	7 Petrol
THC	32(±24)	50(±4)
CO	46(±14)	11(±45)
NO_x	-18(±20)	7(±28)
CO₂	-8(±14)	-5(±15)

Influence on emission results if 4th phase of WLTC is omitted at -7 °C

- Influence on total absolute emissions (mass units).
In brackets standard deviation;
- Comparing 3-phase result to 4-phase result;
- Impact on integrated result over complete cycle in %.
- Fraction (%) of emissions that are not taken into account when only 3-phases are used.

# Vehicles	6 Diesel	7 Petrol
THC	-15(±16)	-3(±3)
CO	-6(±9)	-28(±29)
NO _x	-47(±13)	-31(±18)
CO ₂	-41(±9)	-39(±9)



Thank you

Any questions?

You can find me ricardo.suarez-bertoa@ec.europa.eu