

What is new in COPERT 5

Zürich, 17 November 2017

Software improvements

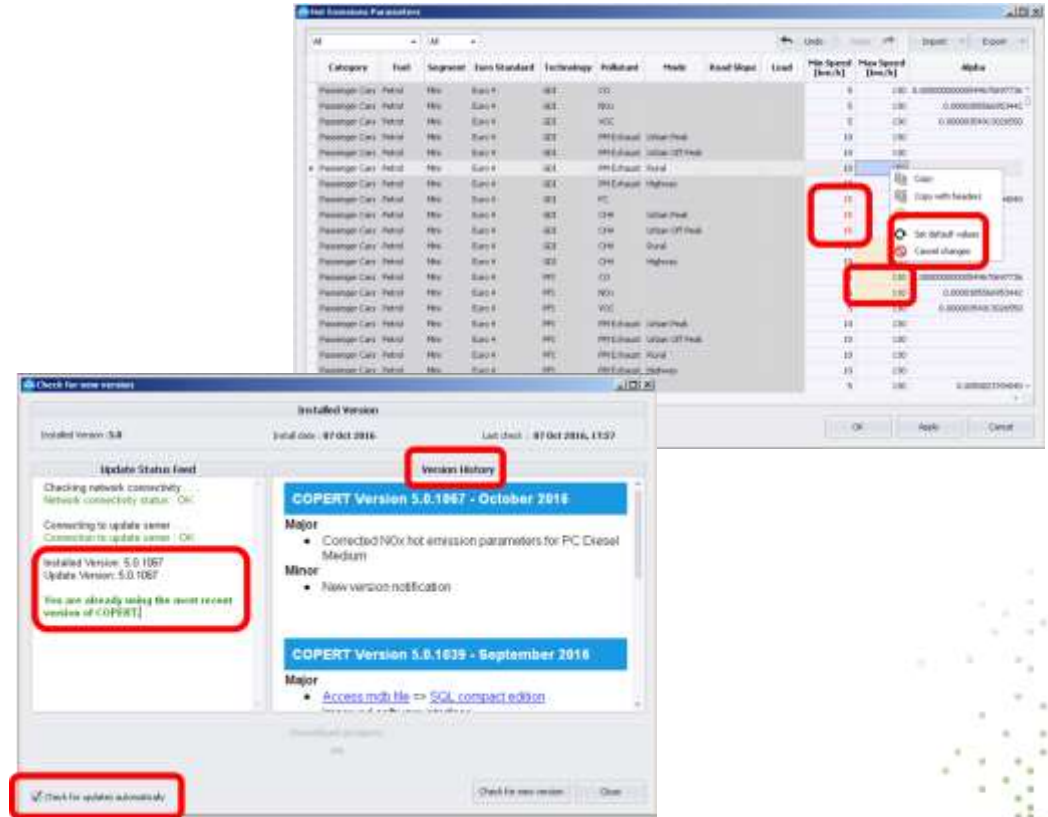


Improvements over COPERT 4

	COPERT 4	COPERT 5
COPERT file	Access mdb file	SQL compact
Temporal analysis	7-10 years in one file	40 years
Calculation time	2 min per year	10 sec per year
File size	Unzipped file	Zipped file

New software elements

- Form design:
 - Undo/Redo
 - Import/Export in all forms
 - Track changes in input forms
- Implied emission factors
- “Cancel” during calculation
- COPERT 4 files consolidation
- Error report
- “Updates” notification



Other software updates

- Interface: DevExpress
- Form design:
 - Pivot table forms
 - Copy and Paste in all forms
- Improved “import from COPERT 4” capabilities
- Updated Excel interface
- No serial number required
- Ticketing for COPERT questions (support@emisiam.com)
- Online help file (<http://copert.emisia.com>)

Category	Fuel	2014					Cold	
		Urban Off Peak [TJ]	Urban Peak [TJ]	Rural [TJ]	Highway [TJ]	Total [TJ]	Urban Off Peak [TJ]	Urban...
Passenger Cars	Petrol	103,668,306	103,668,306	239,354,7239	304,954,542	651,645,8798	37,357,6107	37,357
	Diesel	94,966,5493	94,966,5493	232,575,8725	201,171,9743	623,680,9495	25,012,7142	25,012
	Petrol Hybrid	796,1386	796,1386	2,412,2749	2,431,2778	4,429,8299	653,0611	653
	LPG/Bifuel	3,462,8361	3,462,8361	8,314,4624	4,099,8796	21,219,2142	1,259,1273	1,259
	CNG/Bifuel	897,0599	897,0599	2,133,2549	1,791,0527	5,718,4274	364,1569	364
Passenger Cars Total		203,732,8895	203,732,8895	484,790,9887	416,417,8263	1,308,704,2943	64,646,8702	64,646
Light Commercial Vehicles	Petrol	1,373,2562	1,373,2562	1,289,6495	1,366,760	5,372,9299	478,3648	478
	Diesel	24,523,8527	24,523,8527	27,495,463	36,860,1753	113,403,3436	4,660,9162	4,660
Light Commercial Vehicles Total		25,897,1089	25,897,1089	28,785,1115	38,226,9434	118,776,2695	5,139,2811	5,139
Heavy Duty Trucks	Petrol	0	0	0	0	0	0	0
	Diesel	44,281,8891	44,281,8891	130,470,2104	293,162,9902	912,156,9788	312,156,9788	312,156,9788
Heavy Duty Trucks Total		44,281,8891	44,281,8891	130,470,2104	293,162,9902	912,156,9788	312,156,9788	312,156,9788
Buses	Diesel	8,451,7643	8,451,7643	18,379,7701	5,937,2017	41,219,5003		
	CNG	720,6456	720,6456	885,8322	104,4989	2,401,3224		
	BioDiesel							

Methodology updates



New methodological elements

➤ Calculation

- Tier 2
- Entity mode
- Lubricant consumption and specifications

➤ Fuel

- Energy instead of fuel mass calculations
- Automated energy balance
- Distinction between primary fuels and final blends
- Bi-fueled vehicles

➤ Vehicle Types

- New vehicle types (under development)
- Emission control technology level

Country name

Continent: EUROPE

Country: Greece

Custom name

Name: _____

Run mode

Timeseries Entity: Region

Tier mode

Tier 2 Tier 3

Create Cancel

Category	Fuel	Euro	Tech 1	Tech 2	Tech 3
Passenger Cars	Petrol	4, 5, 6	PFI	GDI	
Passenger Cars	Diesel	6	DPF	DPF+SCR	DPF+LNT
Heavy Duty Trucks	Diesel	V	EGR	SCR	

Other methodological updates

➔ Emission factors

- ➔ Consolidated hot emission factor function
- ➔ Distinguish between peak/off-peak urban
- ➔ NO_x Diesel PCs (Euro 6) and LDVs (Euro 5/6)

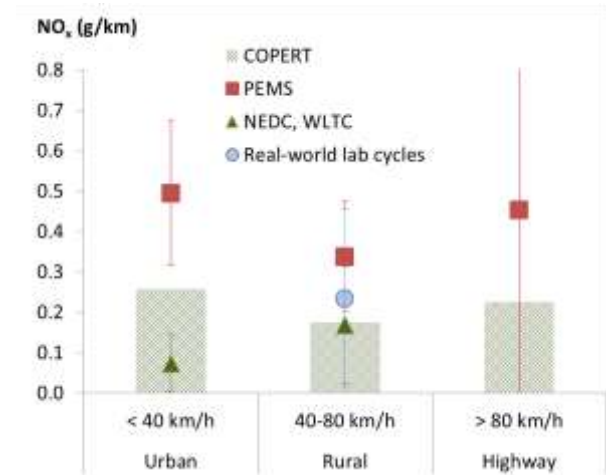
➔ Fuel

- ➔ Advanced fuel specifications
- ➔ Updated CO₂ correction calculation

➔ New/updated vehicle category naming

- ➔ Segments for passenger cars
- ➔ N1-I, II, III for LCVs
- ➔ L-category vehicles (mopeds, motorcycles, quads & ATVs, micro-cars)

$$EF(v) = \frac{a \cdot v^2 + b \cdot v + c + \frac{d}{e \cdot v^2 + f \cdot v + g}}{v} (1 - RF_{EURO}) (1 - RF_{FUEL})$$



Thank you for your attention

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