### **COPERT 4**

Charis Kouridis charis.k@emisia.com

Dimitris Gkatzoflias dimitris.g@emisia.com

EMISIA S.A. Thessaloniki +30 2310 473374 www.emisia.com



Ankara, September 19-20, 2012





### Overview

- Installation
- 7 Steps + Export Data
- Time series in a single file
- Reports
- New Run Wizard



### Installation

- Go to http://www.emisia.com/copert/Download.html
- Select the preferred language (En or Ru)
- Accept the license agreement and download the installation file
- Extract .zip file
- Double-click "setup.exe"
- Just follow the setup wizard and press "Close" when the installation is completed



### Installation – Important Note

- Microsoft .NET Framework version 1.1 or later is required, in order COPERT 4 to run
- In case it is not already installed, a message appears:

# Windows Installer Loader × Image: Windows Installer Loader × Image: This setup requires the .NET Framework version 1.1.4322. Please install the .NET Framework and run this setup again. The .NET Framework can be obtained from the web. Would you like to do this now? Image: Yes No

#### • Solution:

- Press "Yes"
- Save "dotnetfix.exe" on disk
- Double-click "dotnetfix.exe"
- Follow the setup wizard
- After the successful installation you can install COPERT 4



### **Getting Started**

- After the installation a folder named 'COPERT 4' is created in the 'My Documents' folder
- In that folder a file named 'data.mdb' will be placed

#### Important Note:

- Do not use the Microsoft Access application to open and modify the '.mdb' files that are created by the COPERT 4 application, because they may not be able
  - to be opened and
  - processed

#### by the COPERT 4 application





- After you launch COPERT 4 application (Start > All Programs > COPERT 4)
  - Go to 'File' > 'Open' and
  - Select the 'data.mdb' file.

	File	Country	Fleet Configur	ation Activity (	Data Calculation Factors	Emissions	Advanced	Help
			Open					7 X
File Country Fleet Configuration Activity Data			Look in:	COPERT 4			📸 🎫	
New Open			My Recent	🔊 data.mdb				
Save 🚬			Documents					
Save As			Uesktop					
Close			[=]					
New Run Wizard			Mu Documents					
Import/Export			ny booanonto					
Reports •			Salar Secondar					
Exit			My Computer					
			- <b>-</b>					
			My Network Places					
				File name:	data.mdb		-	Open 📐
				Files of type:	(*.mdb)		•	Cancel



### Step 1

- When you open a file a copy is created in the same folder of the opened file with an extension '.tmpX', where X is a number.
- This copy file is a hidden file. During the file process all the changes are stored to the copy file and not the original.
- When you close the file from the 'File' > 'Close' menu or you try to exit the application you will be asked if you want the changes to be stored to the opened file.
  - If you press 'Yes', the changes will be stored and the copy file will be deleted
  - If you choose 'No', the copy file will be deleted without storing the changes to the opened file.





- In order to create a new run:
  - Go to 'File' > 'New'
  - Provide a name for the file (e.g. 'MyCountryName mdh') File Country Fleet Configuration Activity Data Calculation Factors Emissions Advanced Help



Also do not forget to save frequently your changes (File > Save)



• The file that you process is showed at the top of the window.

🙀 COPERT 4 version 8.1 - C:\Users\thomas\Desktop\Copenhagen Training Session III\Denmark.mdb

File Country Fleet Configuration Activity Data Calculation Factors Emissions Advanced Help



### Step 2 – Select/Add Country and Year

• Since you open the file, try 'Country' > 'Select/Add' and from the appearing form you can either Select an existing country and year or Create a new country and year.

		Select / Add Country and Year	×
		Country and Year	Year
Country Fleet Configuration Activity Data			
Edit			
Delete View All Run Details			
Country Info			
Fuel Info			
		or add a new Country, or a new Year	1
	0	Country: Country Name	
	1	/ear: 2007	
	L	.trip (km): 12	
	t	_trip (h): 0.2 Add Data	
			UK 👗 Lancel

### Step 2 – Select/Add Country and Year

- If you want to create a country, fill the textboxes 'Country', 'Year', 'Ltrip', 't\_trip' and press 'Add Data'.
- Select the country and year and press OK. You can see the selected country and year on the Run Details table.
- If you don't want the changes to be applied press Cancel.

File	Country	Fleet Configuration	Activity Data	Calculation Factors	Emissions	Advanced	Help			
							_	-	🔺 🛛 Hide	Run Details
			Mg Select /	Add Country and Y	ear				Country:	Not Selected
			-Select Coun	try and Year				1	Year:	Not Selected
			Country			Year			Beta:	
			Denmark			2004			Apply Statistical Fuel Correction:	
									Mileage Degradation:	
									Mileage Degrad. Factors:	
									Fuel Effect Year:	
									Fuel Effect Factors:	
									Hot Emission Factors:	
									Cold Emission Eactors:	
					_		_		Evaporation Eactors:	
								1	Hot Emissions:	
			or add a nev	v Country, or a new Year					Cold Emissions:	
			Country:	Denmark					Evaporation Emissions:	
			Year:	2004					Advanced	
			Ltrip (km):	12				_	Load / Slope Effect:	
			cup (kiii).	12			?	2		
			t_trip (h):	0.2 Add Da	ta 🔰 🚽	🖌 ОК	🗙 Cance	el		

🔺 Hide	Run Details
Country:	Denmark
Year:	2004
Beta:	Not Calculated
Apply Statistical Fuel Correction:	No
Mileage Degradation:	No
Mileage Degrad. Factors:	Not Calculated
Fuel Effect Year:	1996
Fuel Effect Factors:	Not Calculated
Hot Emission Factors:	Not Calculated
Cold Emission Factors:	Not Calculated
Evaporation Factors:	Not Calculated
Hot Emissions:	Not Calculated
Cold Emissions:	Not Calculated
Evaporation Emissions:	Not Calculated
Advanced	
Load / Slope Effect:	No



### **Important Note**

- When you open one form and then you try to open another one, the second will not be available for changes but you can only view the data of the form.
- That happens because we want to have consistency of the data. So when you finish with the changes of one form close the form (by pressing OK the changes will be applied, by pressing Cancel they will be discarded) and then open another one for further changes.
- However when you have an open form you can open others to view or compare other data.

Denmark	Year 2004	Country Denmark	<b>Year</b> 2004	-
J				
r add a new Country, or a new Year 🦳		and change the attribute(s) you want.		
Country: Denmark		Country: Denmark	Change Name	
		Year: 2004	Change Year	?
'ear: 2004				
'ear: 2004 trip (km): 12	?	Ltrip (km): 12	Change Ltrip	

### Step 3 – Country Info

- From the 'Country' > 'Country Info' form you can fill the temperatures, RVP, humidity and Beta data of the selected country and year.
- Beta data can also be calculated by pressing the 'Calculate Beta' button.
- You can have either different data for every year of each country or the same. When you fill the data and press 'OK' you will be asked if you want the changes you made to be applied to all the years of the selected country or not.



### Step 4 – Fuel Info

- From the 'Country' > 'Fuel Info' form you can provide data for the Fuel specifications and the Statistical Annual Fuel Consumption to be used in the calculations.
- 7 fuel types are included, specifically: Leaded and Unleaded Gasoline, Diesel, Light Petroleum Gas (LPG), Compressed Natural Gas, Biodiesel and Bioethanol.
- Several values for heavy metal content and H:C ratio are proposed. However, those values can be changed if more accurate figures are available.
- Also these data can be different for every year and country.

				🚺 Fuel	l Informati	on									_ = ×		
				Annua	l Fuel Consur	nption											
							. Fue	:I	Annual	Consumpti	on (t)						
	O	Flant Garden				•	Gasoline Le	aded				0					
е	Country	Fleet Configi	Jration	Prov	vide Fuel		Gasoline Un	leaded				0					
	Select	/ Add		Lon	isumption in		Diesel					0					
		./ наа			tonnes	_	LPG					0					
	Edit				TI	-	CNG						lu Statistical				
	Delete	9			10		Biodiesel		Impr	oved Fi	iel Ou	iality Specifi	cations				
	11	Millionae Destables		FuelS	necifications							0					
	view /	All Run Details					Sulphur Content	Lead Content	F	Improve	aruei	quality specifi	Cauons				
					Fuel		(%wt)	(g/l)		Gasoli		E100 (%u/u)	E150 (%u/u)	Aromatics (%u/u)	Olefine (%u/u)	Benzene (%u/u)	Sulphur (ma/ka
	Count	ry Into	_	•	Gasoline Lea	ided	0	0	1	<b>N</b> 1	000	E100 (%070)	00	20 Nonaucs (2017)	10	21	150
	Fuel In	nfo 📐			Gasoline Unl	eaded	0	0		2	000	52	86	37	10	0.8	0
					L DG		0	0	2	2	005	52	86	33	10	0.8	0
					CNG		0	0	۷.	2	009	52	86	33	10	0.8	0
					Biodiesel		0	0									
										D. 1							
					_					Diesei	/oor	Donaitu (ka/m2)	PCA (%)	CN	T95 (aC) (	ulekur (ma (ka)	
				Adv	/anced					<b>b</b> 1	996	940	FUA (% WV)	51	350	400	
										2	000	840	7	53	330	400	
										2	005	835	5	53	320	0	
										2	009	835	5	53	320	0	
											_						
									F	uel consid	ered fo	IT	-1				
									ť	he calcula	ions:	1996 -					L X Can

# Step 5 – Fleet Configuration

- The next step is to configure your fleet. You can do that from the 'Fleet Configuration' > 'Add/Delete Vehicles' form.
- A list of the available vehicle categories will appear. You can select the desired vehicles by checking the checkboxes in the 'Select' column. After you make the selections press 'OK'.



Show all Sectors Passenger Cars Light Duty Vehicles Heavy Duty Trucks Buses Mopeds Motorcycles		Ту	es of vehicles • All • COPERT's Default • User Defined	Apply the to the fo	iis Fleet Configuration ollowing years:
ect al select elect	I the vehicles that yo all the vehicles that Sector	ou want to add to the 'Activ you want to delete from th Subsector	ity Data' forms. e 'Activity Data' forms.	Default Type	Fuel Type
<b>v</b>	Passenger Cars	Gasoline <1.41	PBE ECE	V	Gasoline Leaded
~	Passenger Cars	Gasoline <1.4	ECE 15/00-01	v	Gasoline Leaded
/	Passenger Cars	Gasoline <1,4 l	ECE 15/02	V	Gasoline Leaded
/	Passenger Cars	Gasoline <1.4	ECE 15/03	¥	Gasoline Leaded
/	Passenger Cars	Gasoline <1,4 l	ECE 15/04	<b>V</b>	Gasoline Leaded
7	Passenger Cars	Gasoline <1,4 l	Improved Conventional	<b>V</b>	Gasoline Leaded
/	Passenger Cars	Gasoline <1,4 l	Open Loop	×	Gasoline Unleaded
/	Passenger Cars	Gasoline <1,4 l	PC Euro 1 - 91/441/EEC	<b>V</b>	Gasoline Unleaded
7	Passenger Cars	Gasoline <1,4 l	PC Euro 2 - 94/12/EEC	<b>V</b>	Gasoline Unleaded
/	Passenger Cars	Gasoline <1,4 l	PC Euro 3 - 98/69/EC Stag	<b>V</b>	Gasoline Unleaded
7	Passenger Cars	Gasoline <1,4 l	PC Euro 4 - 98/69/EC Stag	<b>V</b>	Gasoline Unleaded
7	Passenger Cars	Gasoline <1,4 l	PC Euro 5 (post 2005)	<b>V</b>	Gasoline Unleaded
7	Passenger Cars	Gasoline <1,4 l	PC Euro 6	<b>V</b>	Gasoline Unleaded
/	Passenger Cars	Gasoline 1,4 - 2,0 I	PRE ECE	<b>V</b>	Gasoline Leaded
/	Passenger Cars	Gasoline 1,4 - 2,0 I	ECE 15/00-01	<b>V</b>	Gasoline Leaded
/	Passenger Cars	Gasoline 1,4 - 2,0 I	ECE 15/02	<b>V</b>	Gasoline Leaded
	Passenger Cars	Gasoline 1,4 - 2,0 I	ECE 15/03	V	Gasoline Leaded
/	-	Gasoline 1.4 - 2.0 I	ECE 15/04	<b>V</b>	Gasoline Leaded
7	Passenger Cars	Grasolinio 1,4 - 2,01			

# Step 5 – Fleet Configuration

 The next time you open the 'Add/Delete Vehicles' form, the vehicles of your fleet will be checked. If you want to delete a vehicle category from your fleet just uncheck the 'Select' checkbox.



• Each year of every country has a different fleet configuration. However you can apply a configuration of one year to others of the same country by checking the years in the list: 'Apply this fleet configuration to the following years' that appears on the top right corner of the form.





# Step 6 – a) Direct Input Data

- Then you have to fill all the Activity Data (Fleet, Circulation and Evaporation Data). There are three ways to do that.
- The first way is directly through the forms 'Input Fleet Data', 'Input Circulation Data' and 'Input Evaporation Data' forms that are under the 'Activity Data' menu.
- You open each form; fill the desired values for every vehicle category

Sector: Passenger Cars

👔 Input Fleet Data



	Subsector	Legislation Standard	P <sup>22</sup> I	Input Circulation Data	1				– <b>– ×</b>							
•	Gasoline <1,4	PRE ECE						<u> </u>								
	Gasoline <1,4 l	ECE 15/00-01						Sector:	Passenger Cars 📃 💌							
	Gasoline <1,4 l	ECE 15/02						nut Euporation Data								
	Gasoline <1,4 l	ECE 15/03			Г	Spee		put Evaporation Data								
	Gasoline <1,4 l	ECE 15/04		Cubanatar	Logislation Chanded	-1.1.46-0.4								Se	ector: Passenge	Cars 🖵
	Gasoline <1,4	Improved Conventional	_	Subsector	Legislation Standard	Olbar										
	Gasoline <1,4 l	Open Loop	•	Gasoline <1,4 l	PRE ECE							Eucl Injection	Europoration	Evaporation	Share (%)	
	Gasoline <1,4	PC Euro 1 - 91/441/EEC		Gasoline <1,4 I	ECE 15/00-01			Subsector	Legislation Standard	Fuel Iank Size (It)	Canister size	(%)	Control (%)	Urban	Bural —	Highway
	Gasoline <1,4	PC Euro 2 - 94/12/EEC		Gasoline <1,4 I	ECE 15/02		•	Gasoline <1,41	PRE ECE	50	N/A	1	0	80	10	10 🔺
	Gasoline <1.4	PC Euro 3 - 98/69/EC Stage20		Gasoline <1,41	ECE 15/03			Gasoline <1,41	ECE 15/00-01	50	N/A	1	0	80	10	10
	Gasoline <1.4	PC Euro 4 - 98/69/EC Stage20		Gasoline <1,4 l	ECE 15/04			Gasoline <1,41	ECE 15/02	50	N/A	1	0	80	10	10
_	Gasoline <1.41	PC Euro 5 (post 2005)		Gasoline <1.4	Improved Conventional		_	Gasoline <1,41	ECE 15/03	50	N/A	1	0	80	10	10
	Gasoline <1.4.1	PC Euro 6		Gasoline (1.4.1	OpenLoop		_	Gasoline <1,41	EUE 15/04	50	N/A	1	0	90	10	10
	Gasoline 1.4 - 2.0	PREFCE		Gasoline (1,41	PC Euro L. 91 /4/1/EEC		-	Gasoline <1.41	Open Loop	50	N/A	1	0	80	10	10
	Gasoline 1,4 - 2,0	ECE 15/00.01		Caseline (1,4)	PC Euro II 04/10/EEC			Gasoline <1,41	PC Euro 1 - 91/441/EEC	50	2	100	100	80	10	10
_	Casaline 1,4 - 2,0	ECE 15/00-01		Gasoline < 1,4 1	PC EUro II - 94/12/EEC			Gasoline <1,41	PC Euro 2 - 94/12/EEC	50	2	100	100	80	10	10
	Gasoline 1,4 - 2,0	ECE 15/02		Gasoline <1,41	PC Euro III - 98/69/EC S			Gasoline <1,41	PC Euro 3 - 98/69/EC Stage200	50	1	100	100	80	10	10
•			_	Gasoline <1,4 l	PC Euro IV - 98/69/EC S		_	Gasoline <1,41	PC Euro 4 - 98/69/EC Stage200	50	1	100	100	80	10	10
-				Gasoline <1,4 I	PC Euro V (post 2005)		_	Gaseline <1,41	PC Euro 5 (post 2005)	50	1	100	100	80	10	10
				Gasoline 1,4 - 2,0 I	PRE ECE			Gasoline 1.4 - 2.0.1	PBE ECE	50	N / A	100	100	80	10	10
				Gasoline 1,4 - 2,0 I	ECE 15/00-01			Gasoline 1,4 - 2,01	ECE 15/00-01	60	N/A	1	0	80	10	10
			-	Gasoline 1.4 - 2.0 I	ECE 15/02			Gasoline 1,4 - 2,0 I	ECE 15/02	60	N/A	1	0	80	10	10
								Gasoline 1,4 - 2,0 I	ECE 15/03	60	N/A	1	0	80	10	10
								Gasoline 1,4 - 2,0 I	ECE 15/04	60	N/A	1	0	80	10	10 -
								IC F 44 001	1 10 2 1		KT 1A	-	0	00	10	

• The second way is through an Excel file. Open the 'File' > 'Import/Export' > 'Create Import Format Excel File' form.

File	Country	Fleet	Configuration	Activity Data	Calculation F
Ne Op Sa Cl Ne	ew oen ave ave As ose ew Run Wiz	ard			
Im	nport/Expo	rt 🕨	Create Imp	oort Format Ex	cel File 📐
Re	ports	×	Import Dat	a (Excel File)	
E×	it		Import Dat Export Dat	a (COPERT III a (Excel File)	File)
			Export Cor Export CRF	inair (DBF File) (XML File)	



1	✓ 2004	Sheets to be cree	Input	Input Data					
		<ul> <li>✓ Population</li> <li>✓ Mileage-km pa</li> <li>✓ Mean Fleet Mi</li> <li>✓ U Speed-km p</li> <li>✓ R Speed-km p</li> </ul>	vryear v H Spee ryear v U Shar leage-km v R Shar erh v H Shar erh v Fuel Ta	ed-km per h e-perc e-perc e-perc nhk Size-lt	<ul> <li>Canister Size</li> <li>Fuel Injection-perc</li> <li>Evap Control-perc</li> <li>Evap U Share-perc</li> <li>Evap R Share-perc</li> </ul>				
	Select all	•	0			•			
	Unselect all		Select all	Unselect all					
ect	Sector	Subsector	Technology	2004					
	Passenger Cars	Gasoline <1,41	PRE ECE	V					
	Passenger Cars	Gasoline <1,4 l	ECE 15/00-01	V					
	Passenger Cars	Gasoline <1,41	ECE 15/02	V					
	Passenger Cars	Gasoline <1,41	ECE 15/03	V					
	Passenger Cars	Gasoline <1,41	ECE 15/04	V					
	Passenger Cars	Gasoline <1,41	Improved Conventional	V					
	Passenger Cars	Gasoline <1,41	Open Loop	V					
	Passenger Cars	Gasoline <1,41	PC Euro 1 - 91/441/EEC						
	Passenger Cars	Gasoline <1,41	PC Euro 2 - 94/12/EEC	✓					
	Passenger Cars	Gasoline <1,41	PC Euro 3 - 98/69/EC S	t 🗹					
	Passenger Cars	Gasoline <1,41	PC Euro 4 - 98/69/EC S	t 🗹					
	Passenger Cars	Gasoline <1,41	PC Euro 5 (post 2005)	✓					
	Passenger Cars	Gasoline <1,41	PC Euro 6	✓					
	Passenger Cars	Gasoline 1,4 - 2,0 I	PRE ECE	✓					
	Passenger Cars	Gasoline 1,4 - 2,0 I	ECE 15/00-01	V					
	Passenger Cars	Gasoline 1,4 - 2,0 I	ECE 15/02	V					
	Passenger Cars	Gasoline 1,4 - 2,0 I	ECE 15/03	V					

• Select the years of the country that you want to fill the data ('Years as columns' list).

•







- Finally select the vehicle categories of which the data will be filled by checking the checkboxes in the 'Select' column.
- The vehicles that are displayed are only those of the fleet configuration of each year of every country you did before and not all the COPERT's vehicle categories.
- If a vehicle category exists in a fleet configuration of a specific year then the cell of that year in the form's table will be checked, otherwise this column will not be checked.

Select	Sector	Subsector	Technology	2004
<b>V</b>	Passenger Cars	Gasoline <1,41	PRE ECE	
	Passenger Cars	Gasoline <1,41	ECE 15/00-01	
Image: A start and a start	Passenger Cars	Gasoline <1,41	ECE 15/02	
	Passenger Cars	Gasoline <1,41	ECE 15/03	
	Passenger Cars	Gasoline <1,41	ECE 15/04	
	Passenger Cars	Gasoline <1,4 I	Improved Conventional	<b>V</b>

• After you made your selections press 'Create File' and you will be asked the name and where the Excel file will be stored. To close this form press 'Close'.



- Open the Excel file you have just created with the Microsoft Excel application.
- Every selected data type is a different sheet in the Excel file.
- Every selected vehicle category is a row.
- Every selected year is a column.

×	Microsoft Excel - D	enmark 2004.xls	×
8	<u>F</u> ile <u>E</u> dit <u>V</u> iew <u>I</u>	nsert F <u>o</u> rmat <u>T</u> ools <u>D</u> ata <u>1</u>	<u>M</u> indow <u>H</u> elp _ ₽ ×
D	Σ • α 🐧	- 🏂 🛍 100% - 🥐 10	• B I 🔳 🗃 🗃 % , 🔄 • 🕭 • 🗛 • *
			Caller A Wellardy with Changes - End Deview
	D2		The second secon
	D2 -	7×	
1	A	B	
2	Deccordor Coro	Capalina 41.41	
2	Passenger Cars	Gasoline <1.41	
 	Passenger Cars	Gasoline <1.41	ECE 15/00-01
5	Paccondor Care	Geoline x1.41	ECE 15/02
8	Paccondor Care	Gacoline <1.41	ECE 15/03
7	Passenger Cars	Gasoline <1.41	Improved Conventional
8	Passenger Cars	Gasoline <1.41	OpenLoop
9	Passenger Cars	Gasoline <1 41	PC Euro 1 - 91/441/EEC
10	Passenger Cars	Gasoline <1 41	PC Euro 2 - 94/12/EEC
11	Passenger Cars	Gasoline <1.41	PC Euro 3 - 98/69/EC Stage2000
12	Passenger Cars	Gasoline <1,41	PC Euro 4 - 98/69/EC Stage2005
13	Passenger Cars	Gasoline <1,41	PC Euro 5 (post 2005)
14	Passenger Cars	Gasoline <1,41	PC Euro 6
15	Passenger Cars	Gasoline 1,4-2,01	PREECE
16	Passenger Cars	Gasoline 1,4 - 2,0 I	ECE 15/00-01
17	Passenger Cars	Gasoline 1,4 - 2,0 I	ECE 15/02
18	Passenger Cars	Gasoline 1,4 - 2,0 I	ECE 15/03
19	Passenger Cars	Gasoline 1,4 - 2,0 I	ECE 15/04
20	Passenger Cars	Gasoline 1,4 - 2,0 I	Improved Conventional
21	Passenger Cars	Gasoline 1,4 - 2,0 I	Open Loop
22	Passenger Cars	Gasoline 1,4 - 2,0 I	PC Euro 1 - 91/441/EEC
23	Passenger Cars	Gasoline 1,4 - 2,0 I	PC Euro 2 - 94/12/EEC
24	Passenger Cars	Gasoline 1,4 - 2,0 I	PC Euro 3 - 98/69/EC Stage2000
25	Passenger Cars	Gasoline 1,4 - 2,0 I	PC Euro 4 - 98/69/EC Stage2005
26		Gasoline 1.4-2.01 DATA Dopulation / Miles	PC Euro 5 (nost 2005)
	INFOT_	DATA	
Read	у		NUM



- You have to fill the cells in the year's columns with the values you want.
- For example if you want the Mileage for the year '2004' of a vehicle category to be 10000 km, you go to the 'Mileage\_km' sheet, then to the row of the vehicle category and to the column '2004' and you write the number 10000.
- You can leave a cell blank if you want a value of the database data not to be changed.

	Microsoft Excel - D	enmark 2004.xls		– – ×					
8	<u>File E</u> dit <u>V</u> iew <u>I</u>	nsert F <u>o</u> rmat <u>T</u> ools <u>D</u> ata	<u>W</u> indow <u>H</u> elp	_ & ×					
D	🔚 🛕 🗠 🗸 Σ	• f* 📶 100% • 🐥 10	• B I ≣≣≣ %,	🔄 - 🕭 - 🗛 - 🥐					
			🔽 🖏 🙉 🐄 Reply with Change	es End Review					
	A	B	С	D E					
1	Sector	Subsector	Technology	2004					
2	Passenger Cars	Gasoline <1.41	PREECE						
3	Passenger Cars	Gasoline <1.41	ECE 15/00-01						
4	Passenger Cars	Gasoline <1.41	ECE 15/02						
5	Passenger Cars	Gasoline <1.41	ECE 15/03						
6	Passenger Cars	Gasoline <1.41	ECE 15/04	10000					
7	Passenger Cars	Gasoline <1,41	Improved Conventional						
8	Passenger Cars	Gasoline <1,41	Open Loop						
9	Passenger Cars	Gasoline <1,41	PC Euro 1 - 91/441/EEC						
10	Passenger Cars	Gasoline <1,41	PC Euro 2 - 94/12/EEC						
11	Passenger Cars	Gasoline <1,41	PC Euro 3 - 98/69/EC Stage2000						
12	Passenger Cars	Gasoline <1,41	PC Euro 4 - 98/69/EC Stage2005						
13	Passenger Cars	Gasoline <1,41	PC Euro 5 (post 2005)						
14	Passenger Cars	Gasoline <1,41	PC Euro 6						
15	Passenger Cars	Gasoline 1,4 - 2,0 I	PRE ECE						
16	Passenger Cars	Gasoline 1,4-2,0 I	ECE 15/00-01						
17	Passenger Cars	Gasoline 1,4 - 2,0 I	ECE 15/02						
18	Passenger Cars	Gasoline 1,4 - 2,0 I	ECE 15/03						
19	Passenger Cars	Gasoline 1,4 - 2,0 l	ECE 15/04						
20	Passenger Cars	Gasoline 1,4 - 2,0 l	Improved Conventional						
21	Passenger Cars	Gasoline 1,4 - 2,0 I	Open Loop						
22	Passenger Cars	Gasoline 1,4 - 2,0 I	PC Euro 1 - 91/441/EEC						
23	Passenger Cars	Gasoline 1,4 - 2,0 I	PC Euro 2 - 94/12/EEC						
24	Passenger Cars	Gasoline 1,4 - 2,0 l	PC Euro 3 - 98/69/EC Stage2000						
25	Passenger Cars	Gasoline 1,4 - 2,0 I	PC Euro 4 - 98/69/EC Stage2005						
26	Pacconnor Care	Gaeoline 14-201	PC Euro 5 (nost 2005)						
14 4		DATA	ge_km_per_year / ™  ◀						
Read	V			NIM					



#### • Note:

If a vehicle category does not exist in a fleet configuration of a specific year then the cell of the Excel file will have the value 'not exists'. You should not change that value.

• After you fill the desired values save and close the Excel file.

	Microsoft Excel - D	enmark 2004.xls		– – ×					
8	<u>F</u> ile <u>E</u> dit <u>V</u> iew <u>)</u>	insert F <u>o</u> rmat <u>T</u> ools <u>D</u> ata	<u>W</u> indow <u>H</u> elp	_ & ×					
D	Σ • α []	• f 🛍 100% • 🐥 10	• B I ≣≣≣ %,	🔄 - 🕭 - <u>A</u>					
			D R A A MARenly with Chang	es End Deview					
_		<i>j×</i>	0						
-	A	B	U U						
	Sector	Subsector	DDF FOF	2004					
2	Passenger Cars	Gasoline <1,41	PRE EUE						
3	Passenger Cars	Gasoline <1,41	ECE 15/00-01						
4	Passenger Cars	Gasoline <1,41	ECE 15/02						
0	Passenger Cars	Gasoline <1,41	ECE 15/03	10000					
2	Passenger Cars	Gasoline <1,41	ECE 15/04						
	Passenger Cars	Gasoline <1,41	Open Leen	<b></b>					
	Passenger Cars	Gasoline <1,41	DO Euro 1 01/441/EEC						
10	Passenger Cars	Gasoline <1,41	PC Euro 2 04/12/EEC						
11	Passenger Cars	Gasoline <1,41	PC Euro 2 - 94/12/EEC						
12	Passenger Cars	Gasoline K1,41	PC Euro 3 - 30/63/EC Stage2000						
12	Passenger Cars	Gasoline X1,41	PC Euro F (post 2005)						
14	Passenger Cars	Gasoline X1,41	PC Euro 6						
15	Passenger Cars	Capolino 1.4-2.01							
16	Passenger Cars	Gasolino 1.4-2.01	ECE 15/00-01						
17	Paccondor Care	Gacolino 1.4-2.01	ECE 15/02						
18	Passonger Cars	Gasoline 1,4-2,01	ECE 15/02						
19	Passenger Cars	Gasoline 1.4-2.01	ECE 15/03						
20	Passenger Cars	Gasoline 1,4-2,01	Improved Conventional						
21	Passenger Cars	Gasoline 1.4-2.01	Open Loop						
22	Passenger Cars	Gasoline 1.4-2.01	PC Euro 1 - 91/441/EEC						
23	Passenger Cars	Gasoline 1.4-2.01	PC Euro 2 - 94/12/EEC						
24	Passenger Cars	Gasoline 1.4 - 2.0 I	PC Euro 3 - 98/69/EC Stage2000						
25	Passenger Cars	Gasoline 1.4 - 2.0 I	PC Euro 4 - 98/69/EC Stage 2005						
26	Paccoprior Care	Gasoline 1.4-2.01	PC Euro 5 (nost 2005)	<u>└ ,                                   </u>					
H 4	(	DATA Population / Milea	age_km_per_year / M⊧ ∢	▶					
Read	ly			NUM					



- At this point you have to import the Excel file you have just created.
- So open the 'File' > 'Import/Export' > 'Import Data (Excel File)' form.



- Press 'Import Excel File' and you will be asked to point to the Excel file you have just created.
- In the 'Results' text area you will be informed about what the application found in the Excel file
- After you successfully imported the data press 'Close'.

#### Step 6 – c) Import Data from COPERT III

- The third way is to import the Activity Data from a COPERT III '.mdb' Access Database file.
- Open the 'Eile' > 'Import/Export' > 'Import Data (COPERT III)' form.

New Open Save Save As Close		Y Import Data (COPERT III Access File) ▲ ×
Import/Export	Create Import Format Excel File	Import 'COPERT III' Access File
Exit	Import Data (Excer File) Import Data (COPERT III File) Export Data (Excel File) Export Corinair (DBF File) Export CRF (XML File)	Results:
		2 Close

- Press 'Import COPERT III Access File' and point to the file.
- Again in the 'Results' text area you will be informed about what the application found in the file you have just pointed to.
- Press the 'Close' button and view the data you imported in the forms under the 'Action Data' menu.

### Step 7 – Emissions

- Then next step is to calculate all the emissions.
- Open the 'Emissions' > 'Total Emissions' form and press each button of the 'Recalculate' box for every Emission category you want (Hot, Cold, or Evaporation).

we.										
	Emissions	Advanced	Help	Po	ollutant	co 💌		Se	ctor: Passe	enger Cars
.015	Emissions	Mavancea	neip	Ho	ot Emissio	ns Cold Emissions T	otal Emissions			
	Total En	nissions						Emission	ns (t)	
	rocaren	113310113				Subsector	Legislation Standard	Urban	Rural	Highway
	Total En	oissions of all l	UDDEC		•	Gasoline <1.41	PRE ECE	5137.11	7958.14	5797.39
	TOCALEI	nissions of all	years			Gasoline <1,41	ECE 15/00-01	3542,33	5371,55	6955.37
						Gasoline <1,41	ECE 15/02	2962,03	3444,07	3085,47
						Gasoline <1,41	ECE 15/03	3128,80	3993,92	2846,40
	<ul> <li>Fuel Bal</li> </ul>	ance				Gasoline <1,41	ECE 15/04	1697,16	2107,86	1603,10
						Gasoline <1,41	Improved Conventional	1266,65	2188,14	3719,37
	NMVOC	Speciation				Gasoline <1,41	Open Loop	1367,54	2029,09	3149,72
	TALLACCE.	opeciacion				Gasoline <1,41	PC Euro I - 91/441/EEC	329,62	527,27	659,46
	NINAL LOCAL	Constanting and				Gasoline <1,41	PC Euro II - 94/12/EEC	123,13	214,58	279,96
	NMMOC	Speciation pe	er venicie type			Gasoline <1,41	PC Euro III - 98/69/EC S	103,79	246,25	459,38
						Gasoline <1,41	PC Euro IV - 98/69/EC S	39,00	99,21	211,40
						Gasoline <1,41	PC Euro V (post 2005)	0,00	0,00	0,00
						Gasoline 1,4 · 2,0 I	PRE ECE	5137,11	7958,14	5797,39
						Gasoline 1,4 - 2,0 I	ECE 15/00-01	3542,33	5371,55	6955,37
						Gasoline 1,4 - 2,0 I	ECE 15/02	2962,03	3444,07	3085,47
			_			Gasoline 1,4 - 2,0 I	ECE 15/03	3128,80	3993,92	2846,40
						Gasoline 1,4 - 2,0 I	ECE 15/04	1697,16	2346,99	1603,10
						Gasoline 1,4 · 2,0 I	Improved Conventional	702,30	990,71	1020,89
			_			Georgian 17.201	Open Loop	651.38	1099.41	2511.70

You can calculate all the emissions and emission factors without having to open all the corresponding forms with the 'All Emissions (including Mileage Degrad. Not Calculated button, be careful to have the desired Fuel Effect years:
 Fuel Effect Year: 2000
 Fuel Effect Year: 2000

Eactors:

#### Final Step – Export Data to Microsoft Excel

- The final step is to export all the emissions.
- Open the 'File > Import/Export > Create Import Format Excel File' form.

		C D'did (Excer	r ne y					
	Yearsa	as columns	Sheets to be created Ing	out Data			Results	
Country Fleet Configuration Activity Data Calculation Fa n e e As	20	04	<ul> <li>Population</li> <li>Mileage-km per year</li> <li>Mean Fleet Mileage-km</li> <li>U Speed-km per h</li> <li>R Speed-km per h</li> <li>H Speed-km per h</li> <li>U Share-perc</li> <li>R Share-perc</li> <li>H Share-perc</li> </ul>	<ul> <li>✓ Fuel Tank Size-It</li> <li>✓ Canister Size</li> <li>✓ Fuel Injection-perc</li> <li>✓ Evap Control-perc</li> <li>✓ Evap Control-perc</li> <li>✓ Evap U Share-perc</li> <li>✓ Evap H Share-perc</li> <li>✓ Evap H Share-perc</li> <li>✓ Temperatures</li> <li>✓ RVP and beta</li> </ul>		U CO Emiss     R CO Emiss     H CO Emiss     H CO Emiss     U VOC Emiss     U VOC Emiss     H VOC Emiss     H VOC Emiss     Total VOC Emiss     U NMVOC Emiss	<ul> <li>✓ R NMVOC Emiss</li> <li>✓ H NMVOC Emiss</li> <li>✓ Total NMVOC Emiss</li> <li>✓ U CH4 Emiss</li> <li>✓ R CH4 Emiss</li> <li>✓ R CH4 Emiss</li> <li>✓ Total CH4 Emiss</li> <li>✓ Total CH4 Emiss</li> <li>✓ U NOX Emiss</li> <li>✓ R NOX Emiss</li> </ul>	H NOX Emiss     Total NOX Em     U NO Emiss     R NO Emiss     H NO Emiss     Total NO Emiss     Total NO Emis     U NO2 Emiss     U NO2 Emiss     H NO2 Emiss     H NO2 Emiss
e	S	elect all	4		- <b>F</b>	4		•
Run Wizard	Un	select all	Select all	Unselect all		Selec	t all Unselect all	
Import Data (Excel File)	Select	Sector	Subsector	Technology	2004			
Expert Data (COPERTIFICE)	V	Passenger Cars	Gasoline <1,4 l	PRE ECE	<b>V</b>			
	V	Passenger Cars	Gasoline <1,41	ECE 15/00-01	<b>V</b>			
Export Corinair (DBF File)	V	Passenger Cars	Gasoline <1,4 I	ECE 15/02	<b>V</b>			
Export CRF (XML File)	<b>V</b>	Passenger Cars	Gasoline <1,41	ECE 15/03	<b>V</b>			
	<b>V</b>	Passenger Cars	Gasoline <1,41	ECE 15/04	<b>V</b>			
	<b>V</b>	Passenger Cars	Gasoline <1,41	Improved Conventional	<b>V</b>			
	<b>V</b>	Passenger Cars	Gasoline <1,41	Open Loop	<b>V</b>			
	<b>V</b>	Passenger Cars	Gasoline <1,41	PC Euro 1 - 91/441/EEC	<b>V</b>			
	<b>V</b>	Passenger Cars	Gasoline <1,41	PC Euro 2 - 94/12/EEC	<b>V</b>			
	<b>V</b>	Passenger Cars	Gasoline <1,41	PC Euro 3 - 98/69/EC St	<b>V</b>			
	<b>V</b>	Passenger Cars	Gasoline <1,41	PC Euro 4 - 98/69/EC St	<b>V</b>			
	<b>V</b>	Passenger Cars	Gasoline <1,41	PC Euro 5 (post 2005)	<b>V</b>			
	×	Passenger Cars	Gasoline <1,41	PC Euro 6	<b>V</b>			
	×	Passenger Cars	Gasoline 1,4 - 2,0 I	PRE ECE	<b>V</b>			
•	×	Passenger Cars	Gasoline 1,4 - 2,0 I	ECE 15/00-01	<b>V</b>			
	✓	Passenger Cars	Gasoline 1,4 - 2,0 I	ECE 15/02	<b>V</b>			
		-	C 1.4. 2.01	ECE 15/00	1.4			

- This form works the same way the 'Create Import Format Excel File' form does.
- Select the 'Input' and 'Results' Data that you want to export and press 'Export File

### Time series in a single file

- Since you have calculated one year of a Country you can go on with the next year.
- Just follow the previous steps.
- First 'Select/Add Country and Year'.

Denmar	, k	_	Yea 2004 2005	-
or add a n	ew Country, or a	a new Year		
Country:	Denmark			
Year:	2005			
	12			
Ltrip (km):				

• Then configure the fleet of this year, input Activity data, calculate Emission Factors and Emissions as it was shown before.

### Time series in a single file

- You can view the results through-out the years from the 'Total Emissions of all Years' form
- Go to 'Emissions > 'Total Emissions of all Years' form.

uridi\My Documents\COPERT 4\data.mdb

Total Emissions of all years

NMVOC Speciation per vehicle type

actors Emissions Advanced Help Total Emissions

> Fuel Balance NMVOC Speciation

Pollu	tant: CO	<b>-</b>			Show all S Passenger C Light Duty Vi Heavy Duty	Sectors ars shicles
					Buses	THUCKS
					Motorcycles	_
Urban	Rural Highway T	[otal				
	Sector	Subsector	Legislation Standard	2004	2005 📐	
•	Passenger Cars	Gasoline <1,41	PRE ECE	376.61	330.21	
	Passenger Cars	Gasoline <1,4 l	ECE 15/00-01	2457.69	2183.26	
	Passenger Cars	Gasoline <1,4 l	ECE 15/02	427.29	431.07	
	Passenger Cars	Gasoline <1,4 l	ECE 15/03	8274.08	4345.45	
	Passenger Cars	Gasoline <1,41	ECE 15/04	13553.45	12661.81	
	Passenger Cars	Gasoline <1,4 l	Improved Conventional	0.00	0.00	
	Passenger Cars	Gasoline <1,4 I	Open Loop	0.00	0.00	
	Passenger Cars	Gasoline <1,41	PC Euro 1 - 91/441/EEC	14617.06	12080.13	
	Passenger Cars	Gasoline <1,41	PC Euro 2 - 94/12/EEC	9974.49	9276.34	
	Passenger Cars	Gasoline <1,41	PC Euro 3 - 98/69/EC St	9316.48	10475.87	
	Passenger Cars	Gasoline <1,41	PC Euro 4 - 98/69/EC St	0.00	0.00	
	Passenger Cars	Gasoline <1,41	PC Euro 5 (post 2005)	0.00	0.00	
	Passenger Cars	Gasoline <1,41	PC Euro 6	0.00	0.00	
	Passenger Cars	Gasoline 1,4 - 2,0 I	PRE ECE	292.95	256.81	
	Passenger Cars	Gasoline 1,4 - 2,0 I	ECE 15/00-01	1723.68	1562.43	
	Passenger Cars	Gasoline 1,4 - 2,0 I	ECE 15/02	271.26	277.94	
	Passenger Cars	Gasoline 1,4 - 2,0 I	ECE 15/03	4592.70	2480.77	
	Passenger Cars	Gasoline 1,4 - 2,0 I	ECE 15/04	9314.36	8155.89	
				0.00	0.00	



- After calculating the emissions of the desired country and years, one can view autogenerated reports of the selected country's emissions results.
- The available options are: 'Driving Mode Oriented' and 'Source Oriented'.



- With the 'Driving Mode Oriented' form the user can view, save and print reports with the emissions results of the selected country, oriented by driving mode (Urban, Rural, and Highway).
- With the 'Source Oriented' form the user can view, save and print reports with the emissions results of the selected country, oriented by source (Hot, Cold start, Evaporation).
- The results are grouped by pollutant and the user can view all the years' results of the



#### Driving Mode oriented Pollutants Heavy Metals 🕨 🗗 🗙 😂 🛃 📜 🔍 - 🕅 H. MainReport Ľ CO + - 🗅 VOC ++NMVOC + CH4 16/06/2009 Emission Results - Driving Mode oriented COPERT 4 service 5.1 17:29:50 NOX + C0 NO 🗋 + FOLLUTANT YEAR SECTOR URBAN HI REBALLY HIGHWAY D TOT AL [1] • NO2 33,711.80 +2004 157,537,71 15,442.23 206,001.43 Passenger Cars Gasoline «1,41 139,919,39 23,364.75 10,905.65 174,029.78 - 🗅 N20 + 10,121.46 2,458.59 71,154.72 87,698.74 Georgies 1.4., 2.61 NH3 Geodine wheel 8,515,88 1.612.69 847.21 10.025.54 + 436.06 22.28 0.15 1.25 0.00 0.00 Deset <2.81 Deset <2.81 1,041,85 191.98 1,641,91 98.35 Ph PM2.5 0.32 0.56 0.00 0.00 + LEG 0.32 4.19 0.83 2-6 mila Hybrid Gasoline «1,4 1 0.00 - 🗅 PM10 0.00 + Hybrid Geodine 1,4 - 2,01 Hybrid Geodine >2,01 0.00 0.00 0.00 0.00 - 🗋 PM (exhaust) + 13.498.33 Light Duty Vehicles 9.156-14 2.916.07 1402.03 Select Years: 1,010,03 249.78 leofier S.J 312.27 715.85 1,367.13 - 🗋 EC + Birsel s151 2008.28 Heavy Duty Trusis 1,099,05 2,649,000 1205.10 6,167,18 - 🗋 ОМ 2004 + Graniter of a 100.54 218.19 97.64 300.00 219.19 101.44 22.48 25.50 129.29 129.29 Rigid <= 2.9.1 94.67 41.52 238.83 Rigid 73 - 121 Rigid 12 - 141 Rigid 14 - 201 2005 · 🗋 FC + 23.87 77.87 81.78 81.88 (0.18 10.45 10.00 94.02 201.28 218.49 - 🗋 CO2 Rigid 20 - 28 t Rigid 26 - 28 t Rigid 26 - 28 t Rigid 28 - 32 t Rigid 28 - 32 t 100.05 + 312.81 143.30 164.24 243.87 124.16 127.11 299.14 248.96 273.52 321.10 104.42 116.89 🗄 🗋 SO2 149,49 24,45 566.79 288.92 Articulated 14 - 201 Articulated 28 - 261 10.34 00.39 261.29 141.32 201.34 246.17 31.04 210.29 147.34 318.22 \$3-1.01 Articulated 28 - 343 Articulated 34 - 40 t Articulated 34 - 40 t Articulated 38 - 50 t Articulated 38 - 60 t 577,82 161.11 361.03 Roses Debug CNG Hasse 1316-57 2010.07 155.08 1.017.61 10.00 10 1010 1010 1010 0.00 Urban Buidenel Buses Urban Buses Mide <- 15 101 101 Urban Buses Standard 15 - 16 t Urban Buses Articulated +16 t Deadless Standard +16 t 433.56 258.79 151.64 229.28 292.64 129.05 32.68 656.55 41.81 52.84 842.34 340.62 Desphere Articulated 5-19.7 170.85 142.00 51.15 104.41 Select all 1,190.46 11.40 2,161.05 0.00 Mapeds Strengt 1,150.4 410.44 0.00 104184 9,177,49 Metarcyclov 3,817,89 3,633,11 1,727.27 2-stroke #Sizem" 4-stroke #210 gm? 616.31 662.98 211.40 289:35 346:30 296:16 1,568.51 1,810.54 Unselect all 151.21 Astrono 250 - 150 420° Astrono 250 - 150 420° 1,000,000 1,684.00 4,765,645 640.59 314,71 201.44 1,599,01 Refresh Report Current Page No: 1 Total Page No: 1+ Zoom Factor: Whole Page 2 Close

• The user can navigate through the results, with the arrows on top of the form,



• or directly through the Group Tree section on the left side of the form.





One can view the pages of a specific pollutant by double clicking on the shadowed box with the pollutant's name and a new tab will be created



• One can export the pages of the tab (pdf, xls, doc or rtf format) that are viewed by clicking on the "envelope" icon.



### Reports – Important Note

- If you have a problem with the export process to Excel file format:
  - go to http://www.emisia.com/copert/Download.html
- Download the software patch and save the "patch.zip" file on disk
- Extract .zip file
- Close COPERT 4 application
- Double-click the ".exe" file
- Just follow the setup wizard and press "Finish" when the installation is completed

• After each year two pie-charts follow, concerning the year's results.



After all the years for each pollutant, there are two bar-charts where the user can view the results during all the years.
 Report - Emission Results - Driving Mode gringted

	Driving Mode or	ed	
Pollutants, Hosey Matala	Driving Mode on		
Heavy Metals	- ···		
H I I I I I X 🎒 🖄 🛅	: 🔍 - 🕅		
🖭 🗋 CO 🛛 🕅	ainReport		
		16/06/2009 Emission Results - Driving Mode or 13:29:50	fented COPERT 4 version 6.1
		co	
🗉 🖸 PM2.5		Total Emisions / Year & Secto	r
PM10     PM(adapte)		200	Here a late lates
		2 100. 2 120.	Parengei Car Bughi Day Vander
🗉 🖸 ОМ		2 cv	2 Segrets 2 Selengeles
		* * *	]
±-⊡ 002		Year & Sector	
		Total Emissions / Year & Driving	Mode
		580	-
			Constant age to a feature of the second age to a feature of th
		2 m	-
		est yaar 8 Ditahu Mede	

### New Run Wizard

• After creating or opening a file, one can use a wizard, which performs the basic steps in order to calculate a complete run.



New R	un Wizard Steps	×					
1) Select Country and Year							
	2) Country Info						
3) Fuel Info							
	4) Add/Delete Vehicles						
5) Input Fleet Data							
	6) Input Circulation Data						
	Total Emissions						
	< Back Ne	ext >					
	Exit Wizard	?					



• Just press 'Start Wizard' and follow the instructions.

### **Questions**?



