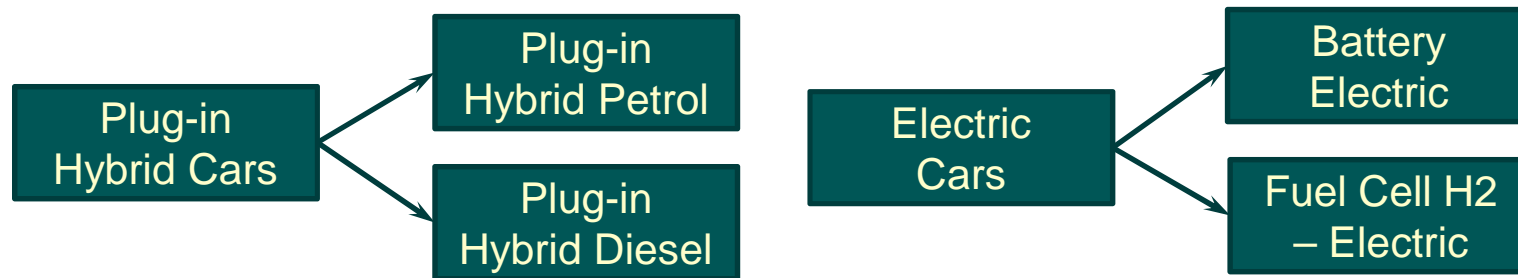


COPERT Training

6. Fuel vs Energy

Energy consumption calculation

- In order to facilitate new vehicle types COPERT 5 calculates energy and not fuel consumption



Hybrid and range-extender vehicles do not require an external energy source

COPERT 4 calculation

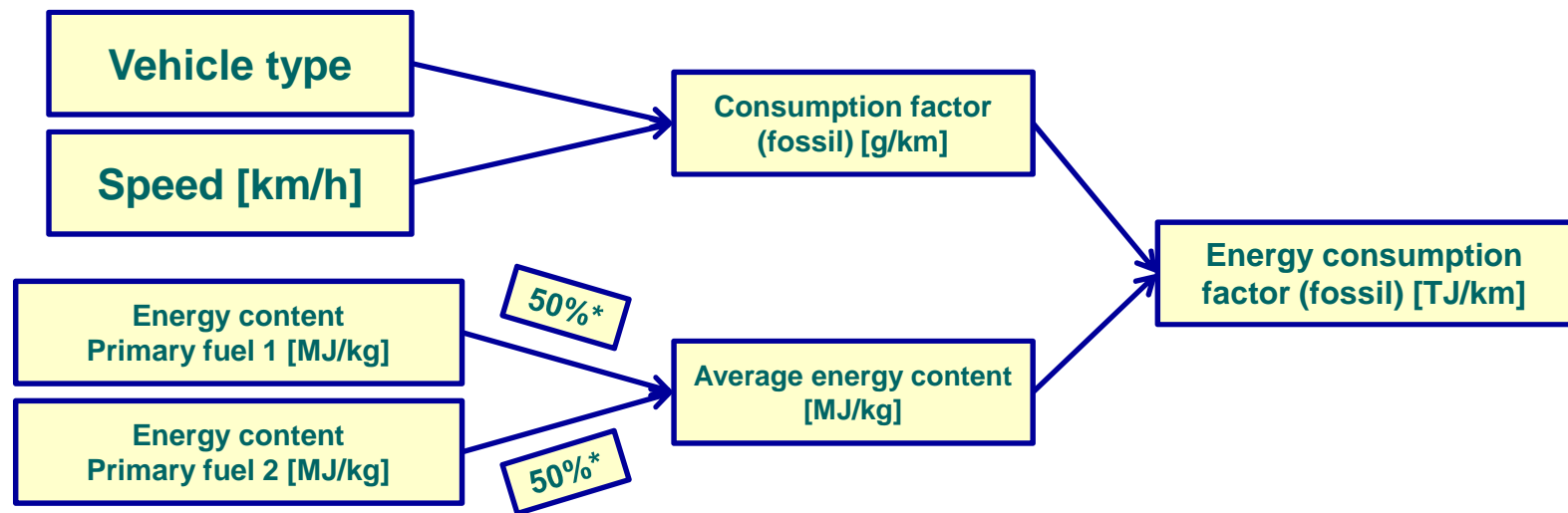
- Fuel consumption is calculated for each vehicle type by using specific functions, taking into account the vehicle speed, in grams of fuel per activity (Petrol, Diesel, LPG, CNG)
- The emission factor is multiplied with the activity to calculate the total consumption in grams
- It is assumed that fuel consumed is 100% fossil fuel

COPERT 5 approach

example of a vehicle

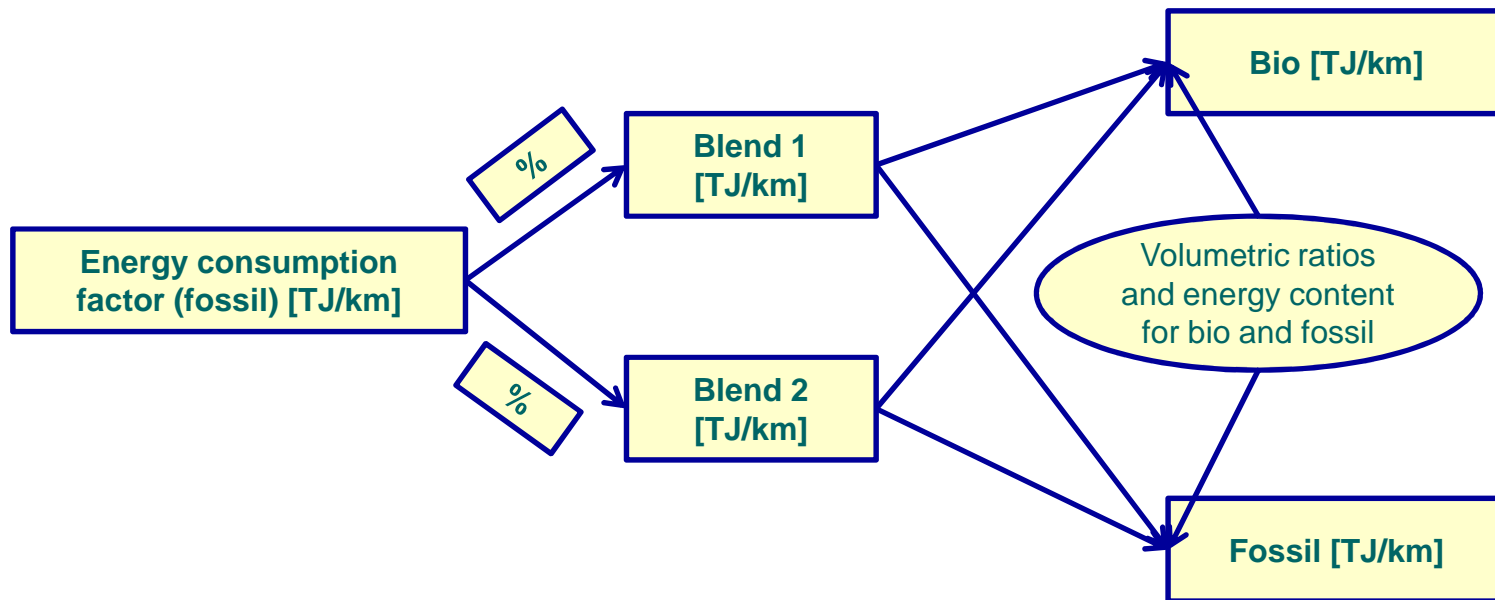
- Input data:
 - Vehicle type
 - Vehicle speed [km/h]
 - Primary fuel(s) consumption [TJ]
 - Primary fuel(s) energy content [MJ/kg]
 - Fuel blend(s) used
 - Fuel blend(s) energy share [%]

Energy allocation to primary fuels (1/2)

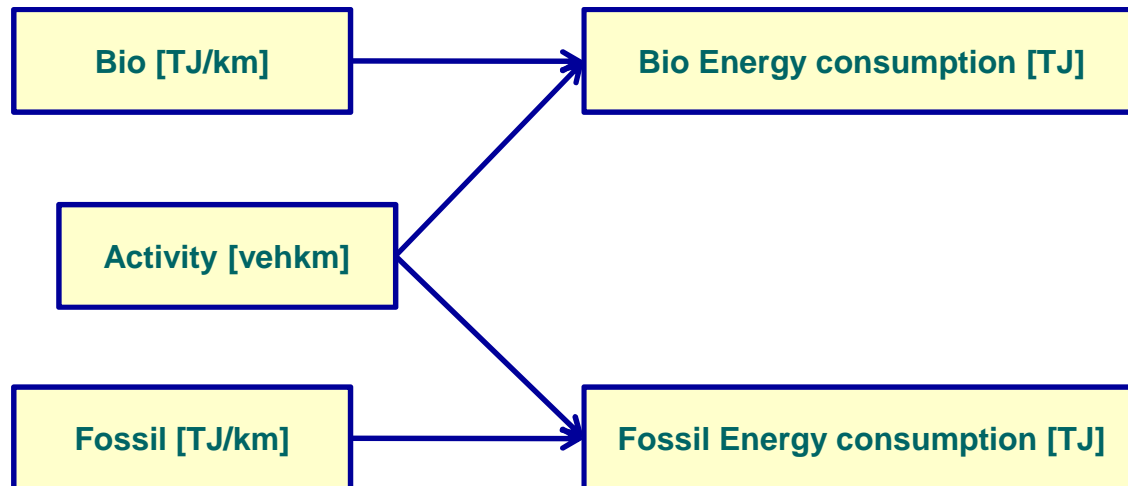


*If no statistical energy consumption provided

Energy allocation to primary fuels (2/2)



Energy consumption calculation



Pollutants affected

The use of biofuels in the fleet may have an impact on the following pollutants:

- CO₂
- Heavy Metals
- Minor effect on Evaporative Emissions
- SO₂

and the total energy consumption

Energy Breakdown form

Energy Breakdown

Drop Filter Fields Here All digits Export

Category	Fuel	Segment	Euro Standard	Fossil Bio Fuel						Grand Total	
				Fossil Petrol	Fossil Diesel	LPG	CNG	Bio Diesel	Bio Ethanol		
Buses	CNG	Urban CNG Buses	EEV				856.6402			856.6402	
		Urban CNG Buses Total					2,401.3224			2,401.3224	
	Biodiesel	Urban Biodiesel Buses	Conventional		0			0		0	
			Euro I		0			0		0	
			Euro II		0			0		0	
			Euro III		0			0		0	
			Euro IV		0			0		0	
			Euro V		0			0		0	
		Euro VI		0			0		0		
		Urban Biodiesel Buses Total			0			0		0	
Buses Total					41,219.5003		2,401.3224	0		43,620.8228	
L-Category	Petrol	Mopeds 2-stroke <50 cm³	Conventional	1,618.2541					0	1,618.2541	
			Euro 1	1,079.1933					0	1,079.1933	
			Euro 2	1,166.5812					0	1,166.5812	
			Euro 3	283.9036					0	283.9036	
		Mopeds 2-stroke <50 cm³ Total			4,147.9322					0	4,147.9322
		Mopeds 4-stroke <50 cm³	Conventional	0						0	0
			Euro 1	0						0	0
			Euro 2	0						0	0
		Mopeds 4-stroke <50 cm³ Total			0					0	0
		Motorcycles 2-stroke >50 cm³	Conventional	428.6699						0	428.6699
Euro 1	174.215							0	174.215		
Euro 2	94.2891							0	94.2891		

Thank you for your attention!

