



MODULE 4: LIFE CYCLE COSTING & PRACTICAL APPLICATIONS OF THE CVD



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4.2: OPERATIONAL LIFETIME COSTS (OLC)



OPERATIONAL LIFETIME COSTS

The third methodology of the CVD

- It monetises energy consumption, CO₂ and pollutant emissions (PM, NMHC, NO_x)
- Key point – its just **ONE option**, you don't have to use it!
- It is **prescriptive** – you must calculate it exactly as laid out by the CVD
- To be used correctly it should not be converted into points/ used as part of a weighting that is separate from the financial costs - It calculates a **monetary value** which should be added to the financial costs of the purchase.



OLC – FUEL CONSUMPTION

Vehicle type	Fuel consumption (l/100km)	Fuel consumption (l/km)	Fuel conversion factor (MJ/l)	Fuel consumption (MJ/km)	Cost per unit of energy (€/MJ)	Cost per km (€)	Lifetime fuel consumption cost (200,000 km) (€)
Diesel	3,9	0,039	36	1,404	0,02075	0,029136	5.827,30
Petrol	4,7	0,047	32	1,504	0,02075	0,031211	6.242,35
Electric	17,3 (kWh)	0,173	3,6	0,6228	0,02075	0,012924	2.584,93
Hybrid	3,8	0,038	32	1,216	0,02075	0,025235	5.047,01
CNG	7,7 (Nm ³)	0,077	33	2,541	0,02075	0,052732	10.546,42
Ethanol	7,1	0,071	21	1,491	0,02075	0,030941	6.188,40



OPERATIONAL LIFETIME COSTS – CO₂

Vehicle type	CO ₂ emissions (g/km)	CO ₂ emissions (kg/km)	Cost (€/kg CO ₂)	Lifetime CO ₂ emissions cost (200,000 km) (€)
Diesel	102	0,102	0,03	612
Petrol	109	0,109	0,03	654
Electric	0	0	0,03	0
Hybrid	87	0,087	0,03	522
CNG	138	0,138	0,03	828
Ethanol	116	0,116	0,03	696



OPERATIONAL LIFETIME COSTS - NO_x

Vehicle type	NO _x emissions (g/km)	Cost (€/g NO _x)	Lifetime NO _x emissions cost (200,000 km) (€)
Diesel	0,1225	0,0044	107,80
Petrol	0,0416	0,0044	36,61
Electric	0	0,0044	0,00
Hybrid	0,0033	0,0044	2,90
CNG	0,043	0,0044	37,84
Ethanol	0,012	0,0044	10,56



OPERATIONAL LIFETIME COSTS - NMHC

Vehicle type	NMHC emissions (g/km)	Cost (€/g NMHC)	Lifetime NMHC emissions cost (200,000 km) (€)
Diesel	0	0,001	0
Petrol	0,0552	0,001	11,04
Electric	0	0,001	0
Hybrid	0,0251	0,001	5,02
CNG	0	0,001	0
Ethanol	0,0564	0,001	11,28



OPERATIONAL LIFETIME COSTS - PM

Vehicle type	PM emissions (g/km)	Cost (€/g PM)	Lifetime PM emissions cost (200,000 km) (€)
Diesel	0,000011	0,087	0,1914
Petrol	0,0000168	0,087	0,29232
Electric	0	0,087	0
Hybrid	0	0,087	0
CNG	0	0,087	0
Ethanol	0,0000026	0,087	0,04524



OPERATIONAL LIFETIME COSTS - OVERVIEW

Vehicle type	Lifetime costs (€)					Total OLC (€)
	Fuel consumption	CO ₂ emissions	NO _x emissions	NMHC emissions	Particulate emissions	
Diesel	5.827,30	612	107,80	0	0,191400	6.547,29
Petrol	6.242,35	654	36,61	11,040	0,292320	6.944,29
Electric	2.584,93	0	0	0	0	2.584,93
Hybrid	5.047,01	522	2,90	5,020	0	5.576,93
CNG	10.546,42	828	37,84	0	0	11.412,26
Ethanol	6.188,40	696	10,56	11,280	0,045240	6.906,28