Guidelines for Frontrunner Public Procurers

Cars and Vans

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Why follow Topten criteria?

- Topten.eu Pro (**www.topten.eu/professional**) is a European web portal helping buyers, professionals, public procurers and large buyers to find **the most energy efficient products available in Europe**. The products are selected and updated continuously, according to their high energy and environmental performances, independently from the manufacturers.

- All cars and vans displayed on **www.topten.eu** meet the criteria contained in these guidelines. Procurers can therefore use the website to check the availability and assortment of products currently on the market, which meet the **Topten selection criteria**.

- Topten.eu Pro links to national partners Topten Pro websites and is developed under the Topten Act project, supported by the European Union through the Horizon 2020 programme.

How much can you save?

Considering cars and vans with combustion engines running on either diesel, petrol or car natural gas (CNG), including hybrids, listed on www.topten.eu, and the following assumptions, it is possible to achieve the savings indicated in the next table.

Assumptions
- Lifetime mileage: 100.000 km
- Fuel price: 1,2 €/litre of petrol and 1,1 €/litre of diesel

	Topten Model	Inefficient Model	Topten Model	Inefficient Model
Category of car	Small	Small	Van 6 or more seats	Van 6 or more seats
CO_2 Emissions	75 g/km	180 g/km	96 g/km	260 g/km
Fuel consumption	3,3 l/100 km petrol hybrid	7,5 l/100 km petrol	4,1 l/100 km petrol hybrid	10,9 l/100 km petrol
CO_2 Emissions (100.000 km)	8 t	18 t	10 t	26 t
Fuel costs (100.000 km)	3.960 €	9.000 €	4.920 €	13.080 €
Savings over 100.000 km	56% CO_2 / unit 5.040 € / unit		62% CO_2 / unit 8.160 € / unit	

Choosing a Topten hybrid model will allow savings of over 5.000 € over the lifespan of a small car, compared with a small car inefficient model on the market. Smaller cars generally consume less fuel but even for vans with 7 seats, a Topten hybrid model can save up to 8.100 € over 100.000 km, in comparison with an inefficient van model.

CO_2 emissions, expressed in g/km, are an important environmental impact to take into account. It is directly linked to fuel type and consumption. In the examples above, Topten models emit around 60% less than inefficient car models.

Different categories of Topten cars, presented according to car size and fuel types, can be found on www.topten.eu. All the Topten models allow large energy and CO_2 emissions savings, and have as well lower environmental impacts, such as noise and other air pollutants.

Procurement criteria

The following criteria can be inserted directly into tendering documents. The selection criteria and the product lists are updated continuously. The newest versions are always available at **www.topten.eu/pro**.

The specifications for cars and vans are based on the ecological rating system developed by the the Institut für Energie und Umweltforschung (IFEU), by order of the German Office for Environment (Bundesumweltamt) and is used by the Swiss Association for Traffic and Environment (ATE) together with its sister organisations - the traffic associations of Germany and Austria (ATE). This multi-criteria rating system takes into account the greenhouse gas, air pollutant and noise emissions for each vehicle type and awards a cumulative score (Eco Points) reflecting environmental performance. The better the environmental performance, the higher the score of Eco Points.

The following technical specifications only relate to cars and vans with a combustion engine, which run on petrol, diesel or natural gas, including hybrid models. Only vehicles with CO_2 emissions up to 180 g/km are taken into consideration.

SUBJECT: **HIGHLY ENVIRONMENTAL PERFORMING CARS**

TECHNICAL SPECIFICATIONS

1. **Pollution index**
All car and vans must achieve a minimum score of Eco Points, as shown in the table bellow, per vehicle category, and not exceed a maximum allowed emission rate. The calculation scheme for the Pollution Index determination is explained further below.

Vehicle category	Vehicle length (VL)	Minimum Eco Points
Mini cars	VL < 3,6 m	72,3
Small cars	3,6 m ≤ VL < 4,0 m	67,3

Compacts	4,0 m ≤ VL < 4,4 m	67,2
Middle class	4,4 m ≤ VL < 4,8 m	57,0
Upper middle class	4,8 m ≤ VL < 5,0 m	48,0
Van with 5 seats	5,0 m ≤ VL	57,8
Van with 6 or more seats	5,0 m ≤ VL	51,8

Calculation of the ATE Pollution Index (expressed in Eco points)

The next table indicates the four types of environmental impacts that contribute to the determination of the Pollution Index.

	Environmental impact	Weighting
A	CO_2 emissions	60%
B	Noise emissions	20%
C	Air pollutants affecting human health	15%
D	Nature pollution (ex. acid rain)	5%

A - CO₂ emissions impact

CO_2 emissions released by vehicles are rated with a linear function. For a CO_2 emissions of 60 g/km a score of 10 points will be granted, while 180 g CO_2/km receive 0 (zero) points. The specific formula for calculating this environmental impact is:

$$\text{Eco points} = (180 - x) * 0,0833 \qquad\qquad x = CO_2 \text{ emissions, in g/km}$$

B - Noise emissions impact

The noise rating scale runs linearly between 10 points, when noise levels correspond to 65 dB(A) and 0 (zero) point when noise emissions are equal to or higher than 75 dB(A), as shown below:

dB(A)	65	66	67	68	69	70	71	72	73	74	75
Points	10	9	8	7	6	5	4	3	2	1	0

C and D - Air pollutants affecting human health and nature pollution impacts

Euro standards set the emission limits for several pollutants affecting human health and nature, as well as ecosystems in general. These two impacts are scored according to the emission class (Euro 6) and type of fuel used by the vehicle.

Emission class[1]		Human health impact[2]	Nature impact[3]
Euro 6	petrol	9,35	7,6
	diesel	2,00	-6,0
Euro 6 Norm 14	petrol	7,48	7,6
Euro 6 Norm 17	petrol	9,35	7,6
Euro 6d-TEMP	petrol	6,64	3,28

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[1] Emission classes are set by Directive (CE) nº 692/2008
[2] Air pollutants considered are nitrogen oxides (NO_x) and non-methane hydrocarbons (HCNM)
[3] Environmental pollution is related to the particulate pollutants emitted by exhaust pipes

Final score, expressed in Eco points

The separate scores of each single environmental effect categories are weighted, added up and multiplied by 10, to obtain the final score.

Eco points = [(A score * 0,6) + (B score * 0,2) + (C score * 0,15) + (D score * 0,05)] *10

Verification

Bidders must supply technical data and test results for the vehicles tendered to demonstrate performance in each of the categories covered by Eco Point rating, accompanied by the above calculation indicating the Eco Points achieved.

2. Particle filter
All diesel vehicles must be fitted with a particle filter (DPF).

NOTES ON IMPLEMENTATION

To increase savings and reduce environmental impact, procurers should evaluate life cycle costs when tendering for cars and vans. Thus, it is advisable to include in the tender a costing exercise - even if simple - for the product life cycle costs.

Example of a breakdown costs table, to be filled in by bidders:

	Information details	**Different unit costs in € (excluding tax)**	**Total cost in € (excluding tax)**
Delivery			
Warranty			
Use*	Fuel consumption x km x nº units	Fuel cost**	
	CO_2 emissions (kg/km) x km x nº units	0,035 €/kg	
	NO_x emissions (g/km) x km x nº units	0,0044 €/g	
	HCNM emissions (g/km) x km x nº units	0,001 €/g	
	Particulate emissions (g/km) x km x nº units	0,087 €/g	
Maintenance			
Recycling and disposal*			

* Example of how use costs can be determined during the usage phase, according to Directive No. 2009/33/EC (Table 2 of the Annex). Other information on glossary, costs per km over the vehicle lifetime, by typology, and other calculating tools in http://ec.europa.eu/transport/themes/urban/vehicles/directive/.

** Bidders must show the calculation of the average fuel consumption per km (if necessary conversion factors are given in Directive Nº 2009/33/CE -Table 1 of the annex).

*** Figures to document this line can include costs related to vehicle change by similar or different car range.

Advice and support

If you would like further assistance in using the information presented here in your own procurement actions or more information on Topten Pro please contact your national Topten team (find the links on Topten.eu).

The European Commission's Green Public Procurement website also contains valuable legal and practical guidance together with procurement criteria for a range of commonly procured products and services.