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Purchase, rent or leasing of vehicles with low emissions

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Purchase, rent or leasing of vehicles with low emissions

On vehicles in the case of the needs for different types of vehicles (i.e, sedan, station wagon, hatchback) tender must be divided into lots and defined all lots. The market research is important, that the demands in a particular context to avoid unduly competition closing. In market research, after we definition lots, for each set of lot, we verified the following data/information on models from different manufacturers:

- Engine power (kW)
- Capacity (ccm)
- Emissions (CO2)
- Wheelbase (mm)
- Price (value added tax included)



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It follows:

- **Completion of the lots**
- **Preparation of tender documentation:**
 - Preparation of technical specifications
 - Preparation of conditions
 - Preparation of awarding criteria
 - Preparation of tender pro forma invoice
 - Other documents



Awarding criteria:

$$M = LCC * \left(1 - \left(\frac{Ar + Lf + Gs + Pm}{100}\right)\right)$$

M = number of points

Best bidder for each lot is the one with the lowest number of points (M)



Awarding criteria:

M	Number of points
Lcc	Operating cost in the lifetime of the vehicle from the offer (<u>mandatory</u>)
Ar	Application of renewable energy sources (optional)
Lf	Low frequency noise pollution (optional)
Gs	A gear shift indicator (optional)
Pm	A tire pressure monitoring system (optional)



Awarding criteria:

Formula for the operating cost in the lifetime (LCC) calculation:

$$\text{LCC} = N_c + (\text{LC}_{km} \times [(\text{poraba}_E \times \text{PE} \times \text{CE}_{min} / \text{PE}_{min}) + (\text{CO}_{2em} \times \text{CCO}_2) + (\text{NO}_{xem} \times \text{CNO}_x) + (\text{NMHC}_{em} \times \text{CNMHC}) + (\text{PM}_{em} \times \text{CPM})])$$



Individual marks in the formula means:

LCC	operating cost in the lifetime of the vehicle from the offer
Nc	the purchase price of vehicle
LC km	mileage in life expectancy of vehicle (200.000 km for passenger cars)
porabaE	consumption of energy source
PE	energy content in the energy source
PEmin	energy content in the cheapest energy source
Cemin	price of the cheapest energy source
CO2em	carbon dioxide emissions
CCO2	price of carbon dioxide emissions
NOxem	emissions of nitrogen oxides
CNOx	price of emissions of nitrogen oxides
NMHCem	emissions of non-methane hydrocarbons
CNMHC	price for emissions of non-methane hydrocarbons
PMem	particulate emissions
CPM	price for particulate emissions



The values from the tender documentation (description of the parameter):

mileage in life expectancy of vehicle	LCkm	200.000 km
energy content in diesel	PE	36 MJ/l
energy content in petrol	PE	32 MJ/l
energy content in energy content of natural gas or biogas	PE	38 MJ/Nm ³
energy content in Liquefied petroleum gas	PE	24 MJ/l
energy content in ethanol	PE	21 MJ/l
energy content in bio-diesel	PE	33 MJ/l
energy content in emulsion fuel	PE	32 MJ/l
energy content in hydrogen	PE	11 MJ/Nm ³
energy content in electricity	PE	3,6 MJ/kWh
price for carbon dioxide emissions	CCO ₂	0,04 EUR/kg
price for emissions of nitrogen oxides	CNO _x	0,0044 EUR/g
price of non-methane hydrocarbons emissions	CNMHC	0,001 EUR/g
price for particulate emissions	CPM	0,087 EUR/g
price of the cheapest energy source without VAT	CEmin	EUR/l or EUR/Nm ³ or EUR/kWh
energy content in the cheapest energy source	PEmin	MJ/l or MJ/Nm ³ or MJ/kWh



Values by the tenderer in the offer:

- the purchase price of the vehicle including value-added tax
- consumption of energy source, expressed l/km or kWh/km
- carbon dioxide emissions (expressed in kg/km)
- emissions of nitrogen oxides (expressed in g/km)
- emissions of non-methane hydrocarbons (expressed in g/km)
- particulate emissions (expressed in g/km)



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