

## Low emission vehicles

### Euro 6 cargo minivan for Gabrovo, Bulgaria



<b>Purchasing body:</b>	Gabrovo Municipality
<b>Contract:</b>	Delivery of a new cargo minivan Awarded: November 2016
<b>Savings:</b>	<ul style="list-style-type: none"> <li>• 0.994 tons of CO<sub>2</sub> emissions saved per year</li> <li>• Primary Energy saving of 0.0022 GWh/yr</li> <li>• Financial saving of 350 EUR/yr</li> </ul>

#### SUMMARY

- New EURO 6 cargo minivan for Zora nursery
- Awarded to NOZHAROV AVTO
- During proposals evaluation, additional points granted to more environmental friendly vehicles meeting the EURO 6 standard
- Total price of the new vehicle - 11,335 EUR

## Procurement Approach

In total, 48 "green" tenders were published and only 22 contracts were signed in 2013 according to the Bulgarian Public Procurement Register. In 2014, only 34 "green" tenders were published and 26 contracts were signed. Within this context, a key objective in terms of promoting sustainable procurement in Bulgaria, is to publish a series of pilot tenders, which can be promoted widely within the Bulgarian community and act as replicable models.

Cleaner vehicles are considered to be a key sector for this approach.

During the preparation for the procedure the team of procurers discussed the possibility of combining the purchase of a new vehicle with the reduction of CO<sub>2</sub> emissions and other harmful emissions. However, the Bulgarian Public Procurement Act forbids the unjustified restriction of possible participants in the tender, and requires the use of well-known and recognised standards in the procedure.

Considering the limited alternatives available to assess environmental performance (e.g. measurement of harmful emissions, noise emissions, etc.) the selected approach was to give priority to a higher EURO emission standard. All cars that meet the requirements of Bulgarian and EU legislation met the minimum requirements and were thus eligible, but additional points were awarded for vehicles meeting the EURO 6 standard.

### PROCUREMENT INNOVATION

Adding environmental criteria for such tenders remains rare in Bulgaria. Usually minimum technical requirements are specified and the main criteria are lowest price and reliability.

## Tender specifications and Verification

### TECHNICAL SPECIFICATIONS

- Date of production - after 01.01.2015
- Category - truck
- Total length - max. 4500 mm
- Engine type - diesel / gasoline
- Engine power - max. 130 hp
- Displacement - max. 1600 cm<sup>3</sup>
- Environmental standard - minimum Euro 5 or equivalent
- Transmission - mechanical / manual
- Seats - min. 2
- Left steering wheel
- Load / payload / - min. 480 kg
- Two rear doors opening to 180 °
- Lateral sliding door - min. 1 / right /
- partition wall between the passenger and the cargo area, with a fixed window to the cargo area

- Unglazed doors and windows in the cargo area of the vehicle
- Extras - air conditioning / climate control
- Security - ABS and equivalent
- Warning triangle, first aid kit, fire extinguisher, reflective vest
- Tank capacity (l) - min. 40 liters

#### AWARD CRITERIA

- Price - max. 40 points;
- Warranty - max. 40 points;
- Environmental criteria (EURO 6 standard) - max. 10 points;
- Delivery time - max. 10 points.

#### VERIFICATION

Verification was based on the presented technical specification of the vehicle.

## A regional approach to SPP

Although the tender is relatively small and considers only one service vehicle for a nursery in Gabrovo municipality, the tender approach was presented and discussed with the network partners during their regular meetings, and it is designed to act as a template to be followed by others.

## Results

### Environmental impacts

The tender was awarded to a bidder offering a EURO 6 vehicle. This was the direct result of including the additional award criteria giving preference for EURO 6 vehicles.

In terms of CO<sub>2</sub> emissions, the difference between the purchased van and a standard vehicle on the market is marginal (although there is a significant improvement compared to the vehicle currently being used).

The main environmental benefit, however, relates to the reduction in harmful local emissions of NO<sub>x</sub> and particulates (PM), which the EURO standards are aimed at achieving (see Table 3)<sup>1</sup>.

**Table 1: Environmental savings – green tender compared to current solution**

Tender	Consumption (l/100km)	CO <sub>2</sub> emissions (tonnes/year)	Primary Energy consumption (GWh/year)
<b>Benchmark (Current petrol vehicle)</b>	9.4	3.142	0.010
<b>Green tender (purchased EURO 6 diesel vehicle)</b>	6.5	2.149	0.0078
<b>Savings</b>	<b>2.9 (31%)</b>	<b>0.994 (32%)</b>	<b>0.0022 (22%)</b>

**Table 2: Environmental savings – green tender compared to conventional solution**

Tender	Consumption (l/100km)	CO <sub>2</sub> emissions (tonnes/year)	Primary Energy consumption (GWh/year)
<b>Benchmark (conventional EURO 5 diesel)</b>	6.6	2.182	0.0079
<b>Green tender (purchased EURO 6 diesel vehicle)</b>	6.5	2.149	0.0078
<b>Savings</b>	<b>2,203.2</b>	<b>0.033 (1.52%)</b>	<b>0.00012 (1.52%)</b>

<sup>1</sup> It has been clearly demonstrated that the test procedures for new cars do not reflect the reality of on-road driving. Therefore actual emissions of the restricted harmful emissions are likely to be higher. The testing procedures are currently in the process of being improved.

**Table 3: Comparison between EURO 5 and EURO 6 for diesel light commercial vehicles<sup>2</sup>**

Standard	Emissions (g/km)			
	CO	HC	NO <sub>x</sub>	PM
EURO 5	0.630	0.46	0.235	0.005
EURO 6	0.630	0.13	0.105	0.005

#### CALCULATION BASIS

- Current vehicle benchmark: petroleum engine vehicle consuming 9.4 l/100km
- Conventional vehicle benchmark: EURO 5 diesel engine vehicle consuming 6.6 l/100km
- Purchased vehicle: EURO 6 diesel engine vehicle consuming 6.5 l/100km
- Calculation made using the tool developed within the GPP 2020 project ([www.gpp2020.eu](http://www.gpp2020.eu)), and refined within the SPP Regions project. Available on the SPP Regions website. (More detailed calculation tables are included in the Annex below)

## Financial impacts

The higher environmental standard is achieved primarily through the improved efficiency of the combustion engines, which in turn reduces fuel consumption. The calculated fuel savings equate to financial savings of €350 per year. The simple payback of the additional investments is 6.3 years, considering the price difference of €2,199 between the EURO 6 vehicle and the cheapest one proposed. However, the expected increase of fuel prices will likely shorten this period.

## Social impacts

The impact of the current tender is negligible as only one vehicle was purchased. However, through engaging the network effectively, using such template tenders, it is hoped that others will follow suit

<sup>2</sup> Source: REGULATION (EC) No 715/2007

helping to achieve potentially significant improvements in air quality – a key issue in the biggest towns and cities in Bulgaria.

## Market response

- Four bidders submitted their proposals and only one of them offered a vehicle meeting the EURO 6 standard. The prices and the ranking of the proposals were as follows: 1<sup>st</sup> place: EURO 5 – price €9,136
- 2<sup>nd</sup> place EURO 6 – price €11,335
- 3<sup>rd</sup> place: EURO 5 – price €11,069
- 4<sup>rd</sup> place: EURO 5 – price €11,473

The highest score was in fact given to a participant that was proposing a much lower price but without the EURO 6 standard. However, the participant could not deliver the vehicle on time and the participant with the second score (the only one offering EURO 6 standard) was finally awarded the contract. If green criteria had not been included, another participant (3<sup>rd</sup> place in the list above) not offering a EURO 6 vehicle would have won. However, more points should have been awarded to the environmental criteria to ensure the desired outcome (see lessons learned).

## Lessons learned and future challenges

- The main lesson for Bulgarian procurers is: *don't be afraid of using green criteria*. The tender award process went smoothly, without any comment from the National Public Procurement Agency.
- Consultation with environmental experts is a must – particularly if no similar tender has been published before.
- The environmental criteria in such tenders should be awarded more points.

The following award criteria may be used in the future:

### NEXT TENDER AWARD CRITERIA

- Lower price - max. 30 points
- Warranty - max. 40 points
- Environmental criteria - max. 20 points
- Delivery time - max. 10 points

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## Annex 1 - Calculation of environmental savings

Calculations made using the tool developed within the GPP 2020 project ([www.gpp2020.eu](http://www.gpp2020.eu)), and refined within the SPP Regions project. Available on the SPP Regions website.

### Input data

Quantity of vehicles	Baseline		Conventional tender			Green tender					
	Average distance per vehicle per year (km/yr)	Kind of fuel	Amount of fuel per 100 km	Quantity of vehicles	Average distance per vehicle per year (km/yr)	Kind of fuel	Amount of fuel per 100 km	Quantity of vehicles	Average distance per vehicle per year (km/yr)	Kind of fuel	Amount of fuel per 100 km
1	12 000	Petroleum	9,4 l/100 km	1	12 000	Diesel	6,6 l/100 km	1	12 000	Diesel	6,5 l/100 km
		Diesel	l/100 km			Diesel	l/100 km			Petroleum	l/100 km
		Electricity	kWh/100km			Electricity	kWh/100km			Electricity	kWh/100km

### Results

Total savings (Baseline / Green tender)				Savings (Conventional tender / Green tender)			
Energy savings (GWh/yr)	CO <sub>2</sub> -savings (t/yr)	% of energy savings	% of CO <sub>2</sub> -savings	Energy savings (GWh/yr)	CO <sub>2</sub> -savings (t/yr)	% of energy savings	% of CO <sub>2</sub> -savings
0,0022	0,994	22%	32%	0,00012	0,033	1,52%	1,52%



## About SPP Regions

SPP Regions is promoting the creation and expansion of 7 European regional networks of municipalities working together on sustainable public procurement (SPP) and public procurement of innovation (PPI).

The regional networks are collaborating directly on tendering for eco-innovative solutions, whilst building capacities and transferring skills and knowledge through their SPP and PPI activities. The 42 tenders within the project will achieve 54.3 GWh/year primary energy savings and trigger 45 GWh/year renewable energy.

### SPP REGIONS PARTNERS



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