By Thomas Mourey / Updated: 05 Sep 2016

Reducing bus fuel consumption and emissions in Kiel (Germany)

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Clean and energy-efficient vehicles
In brief

In June 2012 Kieler Verkehrsgesellschaft mbH (KVG), the public transport company in Kiel (Germany) issued an open tender for the purchase of 17 new buses to replace a part of its fleet.

Context

KVG's intention was to reduce its environmental impact, mainly through lower emissions and improved fuel efficiency.

In action

In its public tender KVG stipulated the type of buses it required should be low-floor diesel-fuelled and meet Euro VI standards. Additional technical specifications, split into commercial and technical conditions, were also set out for potential bidders. Four different manufacturers showed an interest in the tender. Only two offers remained at the end of the process which met the technical specifications. KVG then compared both bids against a very detailed matrix composed of six different sets of award criteria. Costs were given a substantial weighting in the decision-making process, accounting for a total of 35 per cent of the marks available. Of this, the purchase price accounted for 27 per cent and vehicle parts for the remaining 8 per cent. Technical requirements were given the same weighting as costs (35 per cent).

These included, for instance, meeting Euro standards and achieving the German 'Blauer Engel' (Blue Angel) environmental label. Other sets of award criteria were down to the quality of the vehicles, after-sales services, as well as an evaluation of energy and consumption costs. Based on figures provided by the manufacturers, consumption costs were calculated according to the Clean Vehicles Directive (2009/33/EC). The selection process ensured impartial treatment of all the offers received. The winning manufacturer signed a contract to produce at least 30 new buses to be delivered between 2013 and 2015. Some 17 Euro VI vehicles entered into service in 2014. In 2015, nine additional Euro VI buses with the Blauer Engel environmental label completed the contract.

Results

Euro VI vehicles achieve better environmental performance compared to Euro V buses. KVG estimates that the 17 buses delivered in 2014 have reduced fuel consumption by 40 800 litres of diesel per year and saved 107 tonnes in CO2 emissions. Additionally, Euro VI buses are cost-efficient - KVG expects to save €40 800 annually thanks to lower fuel consumption.

Challenges, opportunities and transferability

The buses now in service have demonstrated that predictions about the fuel consumption rate are accurate and that better environmental performance will last the whole 13-year lifetime of the vehicles. The tender process has been positively regarded by KVG, so much so that it has since used the same framework conditions for another public tender which opened in July 2015 (2015/S 137-253498) for at least 21 new buses to be delivered in 2016 and 2017 as part of its continued fleet renewal programme.

In Depth

- KVG website
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Image: Horsa Schult

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