

Environmentally friendly LPG-engined busses in Vienna



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Background & Objectives

At the beginning of the sixties the local public transport company of Vienna, Wiener Linien, started to establish liquefied petroleum gas (LPG) as an alternative-fuel for their busses. Today every bus of the Wiener Linien is LPG-powered. In March 2001 the last fuel mixture articulated bus (30% LPG and 70% diesel) was replaced.

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Implementation

The emissions of the new engine falls more than 50% below the EU-5 standard, which is in force since 2008. It was possible to decrease the fuel consumption and therewith the CO₂ emissions by 14% compared to the engine used so far (G 2866 DUH05).

Since 2005 these new LPG engines were fitted in the new busses of the Wiener Linien in a consequent way. Since 2007 the development of a further stage of the LPG engine (G 2876 DUH02) was finished. Because of an other fuel injection, the noise of the engine is lower than before and the fuel consumption could get reduced again.

Technical specifications

Type MAN NL 273 LPG / Type MAN NG 273 LPG

Length: 11995 mm / 17950 mm
Width: 2500 mm / 2500 mm
Height: 3300 mm / 3300 mm
Weight (empty): 12210 kg / 16617 kg
Doors: 2 or 3 / 4
Seat: 34 or 42 / 46
Standings: 51 or 42 / 102
Maximum speed: 86 km/h / 85 km/h

Engine

Type: MAN G2876 DUH01, MAN G2876 DUH02 6 cylinder four-stroke
Cubic capacity: 12816 ccm
Engine speed: 2200 U/min

Engine output: 200 KW

20 articulated busses, 44 2-door solo-busses and 37 3-door solo-busses with the new engine are in operation so far. It is arranged that further 148 articulated busses, 16 2-door solo-busses and 58 3-door solo-busses will come in operation until 2012.

The emissions of a number of pollutants are lower compared with similar diesel-busses. Due to the simple chemical structure the combustion of LPG is clean and nearly without any carbon-particulate matter. Thanks to a three-way catalytic converter the emissions of NO_x are also lower. Furthermore the new engines go below the EEV -Norm (Environmental Enhanced Vehicle) on CO, NMHC and NO_x. Only on CO₂ the emissions of LPG-engines are above comparable diesel engines.

Conclusions

Because of the new developed engine the emissions of pollutants and particulate matter decrease. The use of these engines is a considerably measure against carbon dioxide (CO₂) nitrogen oxides (NO_x) emissions.

These engagements got appreciate with the award of the Umweltpreis (Environmental award) of Vienna in 2006.