



Natural Gas Vehicle Development

CNG vehicles for cleaner cities

World Gas Conference

Strategic Panel 'Natural Gas Vehicles, The Road Ahead?'

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Amsterdam, June 2006

IVECO

ENVIRONMENT

SAFETY

PRODUCTIVITY



EU Oil dependency Programme

EU Commission 'Green Paper' (2001) indicates the following alternative fuel usage to replace mineral oil derived transport fuels:

Fuel / Year	2005	2010	2015	2020
Biofuel	2%	6%	7%	8%
Natural gas		2%	5%	10%
Hydrogen			2%	5%
Total	2%	8%	14%	23%

EU Impulse on “Clean Vehicles” (1)

Final Draft of COM (2005) 634 (dec-2005) Directive for the promotion of clean vehicles for road transport, that takes into account:

- The environmental features of the vehicle
- Pollution regulations already in existence

The directive proposes that 25% of annual purchases of vehicles with GVM >3.5t, that are acquired by public entities of the Member States, comply with the E.E.V. specifications

TODAY THE MOST EFFECTIVE EEV AVAILABLE VEHICLES ARE CNG ENGINED

EU Impulse on “Clean Vehicles” (2)

This Directive, still in the planning stages, indicates the trend that logically should influence the public sector’s buying decisions.

Road transport in the EU counts for 26% of the energy consumed and 24% of CO₂ emitted.

Public entities’ annual purchasing volume of vehicles in the EU is situated at 52,000 units

- 25% is an important volume (13,000 units)
- It would allow the emissions in urban centres to fall significantly year after year.

The purpose of the Directive agrees with the general objective of using fuels/alternative propulsion systems which reduce the dependence on oil (23% in 2020)

Significant Iveco CNG fleets in the world. Rome

Rome. Urban bus fleet with Iveco CNG Cursor 8 engines.
800 u.

Yearly Natural Gas consumption
18,900,000 Nm³

Yearly emission savings

Iveco CNG (EEV) vs.

Diesel Euro 3 limits

NOx 238,000 kg

CO + HC + PM 1,264,000 kg

CO₂ 3,720,000 kg



CNG vehicles for cleaner cities

Significant Iveco CNG fleets in the world. Madrid

**Madrid. Garbage collection fleet with Iveco CNG engines.
445 u.**

**Yearly emission savings
Iveco CNG (EEV) vs.
Diesel Euro 3 limits**

NOx	132.391 kg
CO + HC + PM	703.000 kg
CO₂	2.069.440 kg

**Yearly Natural Gas consumption
10,500,000 Nm³**



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Significant Iveco CNG fleets in the world. Athens

**Athens. Urban bus fleet with Iveco CNG Cursor 8 engines
400 u.**

**Yearly emission savings
Iveco CNG (EEV) vs.
Diesel Euro 3 limits**

NOx	119,000 kg
CO + HC + PM	632,000 kg
CO2	1,860,000 kg

**Yearly Natural Gas consumption
9,440,000 Nm3**



CNG vehicles for cleaner cities

Significant Iveco CNG fleets in the world. Beijing

**Beijing. Urban bus fleet with Iveco CNG Tector engines.
1,300 u. (by the end of 2007)**

Yearly emission savings

Iveco CNG (EEV) vs.
Diesel Euro 3 limits

NOx	386,760 kg
CO + HC + PM	2,054,000 kg
CO₂	6,045,000 kg

**Yearly Natural Gas consumption
30,670,000 Nm³**



CNG vehicles for cleaner cities

European CNG automotive potential market

The impulse of CNG trucks and buses in the European cities, as a way to reduce emissions, gives a clear view of the huge market that could be created for the natural gas:

Main cities in EU

Potential CNG heavy fleet (average):

800 units of buses & refuse collection trucks

Potential gas consumption/year: **19,000,000 Nm³** per city

Cities in Europe with this potential fleet size : **25**

Total potential in big cities: **500,000,000 Nm³/year**

Other CNG production vehicles: Iveco Daily



CNG vehicles for cleaner cities

Other CNG production vehicles: Iveco Eurocargo



CNG vehicles for cleaner cities

Conclusions

- CNG vehicles constitute an economic, up-to-date and dependable alternative to diesel vehicles, to improve acoustic and gaseous emissions simultaneously
- CNG vehicles are available. IVECO offers a complete range of CNG vehicles complying with the E.E.V. standard. Its performances, driveability and operational costs are fully aligned with diesel versions
- The lack of a widespread CNG distribution infrastructure in some countries is not a problem for the development of the CNG urban vehicle market. Main potential customers are precisely urban captive fleets just needing one or two own refilling station

Actions needing the IGU support

- To propose, in the directive planning stages, that “clean vehicles” will have to use **non oil derived fuels**
- To warn the UE that the proposed 2 % use of Natural Gas for 2010 in the EU Oil Dependency Programme **will not be reached unless additional measures are taken**
- **To make lobby near EU state members** in favour of Bio & Natural Gas as a clean alternative and well proven fuel for road transport

ENVIRONMENT:
WE LOOK AHEAD.



IVECO
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