

## Rolande LNG introduces the first truck in Europe running on dedicated Liquid Biogas (LBG)

Rolande LNG B.V., a specialist in supplying LNG and LBG for road transport applications, has recently introduced the first truck running on liquid Biogas. In Europe this is a novelty!

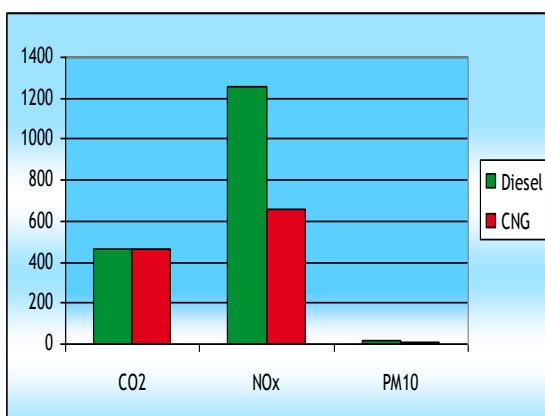
So far this was a subject of many studies and conference presentations but no truck was really running on the road using LBG!

Rolande LNG B.V. made this concept working by converting, in close cooperation with IVECO in the Netherlands, an IVECO Stralis CNG into a truck being capable to run on LNG/LBG. For this purpose Rolande LNG provided not only know how but also the special cryogenic tanks and heat exchanger being necessary to use LBG as fuel. The truck is bought by Chr. Vermeer Transport B.V. in Dongen, The Netherlands. This transport company wants to be the first in the Netherlands, to collect experience with a truck running on LBG in the daily transport service.

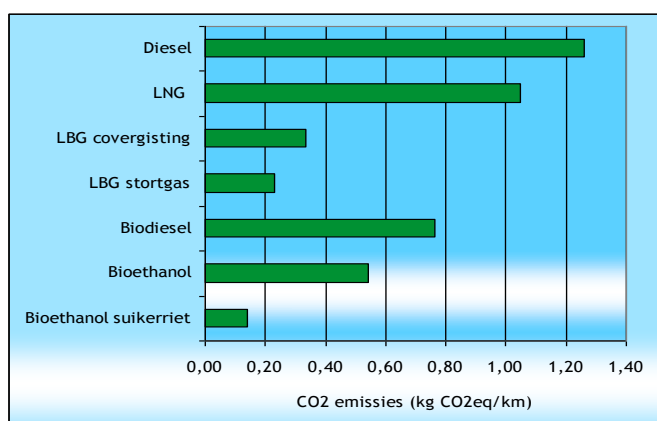
But it was also necessary to make the proper fuel(LBG) available in order to let the truck run. For that purpose Rolande LNG collected with one of his ADR certified special tank trailers the first load of Liquefied Biogas made from gas coming out of a landfill. It is gas made from organic waste material, so no additional agricultural land was necessary to produce this bio methane. As gas treatment and transport only absorbs a limited amount of energy this fuel is by far the most sustainable and CO<sub>2</sub> neutral(80%) practical usable alternative available today.

The graphics below show that the using LBG as transport fuel gives better or equal emission quality levels than EEV or Euro 5 diesel engines in trucks and busses. But these levels can be attained without expensive and maintenance requiring sooth filters and Ad Blue. A simple three way catalytic converter will do the job. But looking at CO<sub>2</sub> emissions from Well to Wheel than is using LBG made from landfill gas by far the most attractive alternative compared to any other bio fuel currently available( up to 80% CO<sub>2</sub> reduction compared to diesel). So Rolande LNG is convinced that using LBG is the first clean, sustainable and economical attractive fuel for road transport.

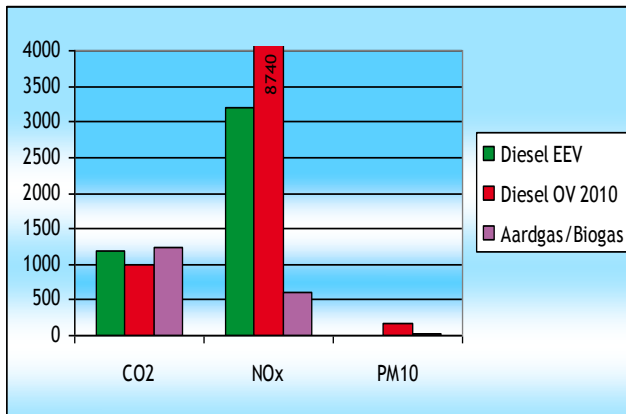
Emissionlevels light trucks Euro 5-TTW



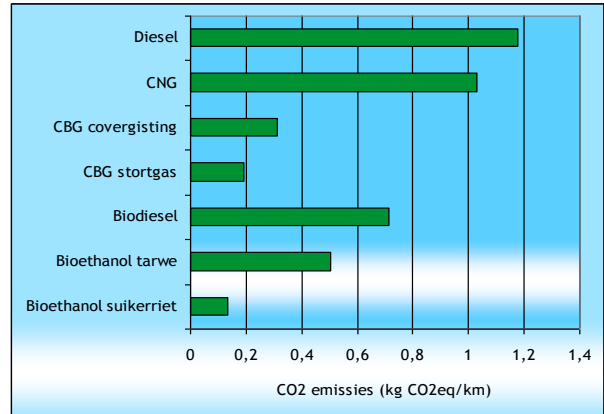
CO<sub>2</sub> emission well to wheel (source CE2008-A)



Emissionlevels busses -TTW



CO2 emission well to wheel



Currently the truck is being used to demonstrate and convince the transport industry the many advantages of using LBG as fuel. The advantages are many : A truck running on LBG is **clean**( better than future Euro 6 !),**quiet**(5X lower noise level than a diesel! PIEK certified in the Netherlands) and up to **80% CO2 neutral!**. So there is no cleaner, quieter and more sustainable alternative available today for goods distribution transport.

Apart from these advantages it is also economical. Using LBG can save between 2 and 5 Eurocents per km. The truck can run more than 1200 km before refueling. So we managed to overcome the typical problem when using CNG as transport fuel in trucks.

So we believe that the future of clean and sustainable transport has started NOW!

The truck can be seen during the so called “Carrosserie Vakdagen” in Hardenberg. This is a regional transport show in the northern part of the Netherlands .Opening dates are 20,21 and 22<sup>nd</sup> of April 2010. Opening hours 14.00 -22.00 hours. IVECO Stand in Hall 4A.

You are invited to visit us.

From Rolande LNG Mr. Peter Hendrickx will be available to answer all your questions.

**ROLANDE LNG MAKES SUSTAINABLE TRANSPORT POSSIBLE!**