



Press Release

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## Natural gas and LPG: a concrete solution to “Dieselgate”

*47 million vehicles in the world make a significant contribution to reducing nitrogen oxides and fine particulate matter. And now there's a new solution: Diesel Dual Fuel*

Since September 19, the news in the world press has drawn the attention of hundreds of millions of people to the existence of NOx: nitrogen oxides. Abbreviations such as EPA (Environmental Protection Agency) and CARB (California Air Resources Board) have become a part of the general vocabulary and are no longer used only by specialists.

There were more than 100 million diesel vehicles in circulation in Europe alone at the end of 2014<sup>1</sup>, representing 41% of all vehicles, and 53% of all new vehicles registered in 2014 were diesel-fuelled<sup>2</sup>. These figures are much higher than in the rest of the world, particularly the United States.

According to the estimates published by *The Guardian*<sup>3</sup>, the polluting potential of a single diesel vehicle which fails to conform to the American regulations is between 0.021 and 0.086 tonnes of NOx per year, 10 to 40 times the pollution standard for new models in the US.

On the other side, people have to be aware that 47 million natural gas fuelled (22.4 million)<sup>4</sup> and LPG fuelled (25 million)<sup>5</sup> vehicles are currently in circulation all over the world. Most of them are bi-fuel vehicles with alternative fuel systems on Otto-cycle engines. And they represent an ecological improvement, significantly reducing emissions of nitrogen oxides and fine particulate matter over diesel vehicles, which represent the biggest cause of atmospheric pollution and its effects on human health.

The EPA points out that 95.1% of all NOx emissions in the U.S.A. are produced by transportation<sup>6</sup>, and that natural gas can reduce climate-altering emissions by 30% to 40%.<sup>7</sup>

Technological innovation now offers a new way of using natural gas to power vehicles: Diesel Dual Fuel, for cleaner diesel engines.

<sup>1</sup> ACEA, 2015-2016 pocket guide [http://www.acea.be/uploads/press\\_releases\\_files/POCKET\\_GUIDE\\_2015-2016.pdf](http://www.acea.be/uploads/press_releases_files/POCKET_GUIDE_2015-2016.pdf)

<sup>2</sup> ICCT – The International Council on Clean Transportation, FAQ in-use NOx emissions from diesel passenger cars <http://www.theicct.org/news/rss.xml>

<sup>3</sup> <http://www.theguardian.com/business/2015/sep/22/vw-scandal-caused-nearly-1m-tonnes-of-extra-pollution-analysis-shows>

<sup>4</sup> NGV Journal, NGV statistics <http://www.ngvjournals.com/ngv-statistics-2/>

<sup>5</sup> World LPG Association – “Autogas Incentives Policies”, page 6 - <http://www.wlpga.org/wp-content/uploads/2015/09/autogas-incentive-policies-2015-2.pdf>

<sup>6</sup> EPA – United States Environmental Protection Agency: “Greenhouse Gas Inventory Data Explorer” - <http://www3.epa.gov/climatechange/ghgemissions/inventoryexplorer/#transportation/allgas/source/current>

<sup>7</sup> EPA - United States Environmental Protection Agency: “Fuel Efficient Vehicles and Alternative Fuels Smart Choice Guide” - <http://www3.epa.gov/region09/climatechange/transportation/fuel.html>



The International Organisation of Motor Vehicle Manufacturers (OICA) notes that natural gas and LPG reduce NOx<sup>8</sup> emissions and fine particulate matter over the levels of conventional fuels, pointing out that this result can also be very effectively achieved with blends of diesel and natural gas.

Combining natural gas with diesel fuel, replacing up to 80% of diesel fuel with natural gas, drastically reduces the fine particulate matter and NOx emissions produced by diesel engines and cuts vehicle operating costs. The majority of diesel vehicles, whether automobiles, light commercial vehicles or heavy vehicles, now stand to benefit from an upgrade with this technology.

More and more governments all over the world are in fact deciding to support massive use of natural gas as a vehicle fuel in various ways, identifying it as the most widely available resource for rapid reduction of atmospheric pollution (in Europe, road transportation is responsible for 71.9% of all greenhouse gas emissions in the transportation sector<sup>9</sup>).

In Italy, for example, use of such alternative solutions has been popular for at least 60 years: the country's fleet of LPG and natural gas fuelled vehicles represents 7.8% of the total number of vehicles, and 14.5% of all new vehicles registered in 2014. Including conversion of vehicles already in circulation, more than 4.5 million natural gas and LPG fuelled vehicles have been put on the road since the year 2000.

In addition to ecological implications, this also has economic benefits to offer: natural gas costs much less than conventional fuels in most countries.<sup>10</sup>

In Italy, natural gas and LPG now permit consumers to save almost 60% over the cost of petrol and 50% over the cost of diesel<sup>11</sup>: the percentages are higher than ever, clearly revealing how these alternative fuels can help motorists cut their costs.

Any strategy for reducing atmospheric pollution from transportation with short-term quantitative targets must therefore make increasingly widespread use of gaseous fuels, now that the technology for using them is mature, safe, and capable of relying on a widespread distribution network, with more than 100,000 refuelling stations all over the world (more than 73,000 LPG and 26,000 natural gas)<sup>12</sup>, including 25,000 in the EU15 countries.

*Landi Renzo is a world leader in LPG and natural gas fuel systems and components for motor vehicles. The company, based in Cavriago (Reggio Emilia) with 60 years' experience in the field, stands out for its international scope, operating in more than 50 countries. Landi Renzo has been listed on the Star segment of the Italian Stock Exchange since June 2007.*

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<sup>8</sup> OICA, LPG and CNG - <http://www.oica.net/category/auto-and-fuels/alternative-fuels/lpg/> ;

<http://www.oica.net/category/auto-and-fuels/alternative-fuels/cng/>

<sup>9</sup> European Commission, Climate Action, Reducing emissions from transport

[http://ec.europa.eu/clima/policies/transport/index\\_en.htm](http://ec.europa.eu/clima/policies/transport/index_en.htm)

<sup>10</sup> NGV Journal, NGV statistics <http://www.ngvjournals.com/worldwide-fuel-prices/>

<sup>11</sup> Canale Energia, "Ecogas, con GPL e Metano risparmi sino al 57% sul carburante" – September 2015

<sup>12</sup> LPG: World LPG Association – "Autogas Incentives Policies", page 14 - <http://www.wlpga.org/wp-content/uploads/2015/09/autogas-incentive-policies-2015-2.pdf>; natural gas: NGV Journal, NGV statistics <http://www.ngvjournals.com/ngv-statistics-2/>