

Natural Gas for Vehicular Use



Distribuidor en México



www.gemsa.com

www.ta.com.ar

Contenido

Background.....	2
Current Situation	2
Worldwide Leader Countries in the use of Natural Gas for Vehicles.....	4
Benefits of using Natural Gas for Vehicles	4
Ecological Advantages	5
Economical Advantages	6
Technology	7
Utility Vehicle converted to Natural Gas	8

Background

- Grupo Empresarial México (GEMSA) has participated over 40 years, providing services to Pemex, and other organizations in the Energy Sector.
- In 1999 GEMSA established the company *Grupo Galileo de México S.A. de C.V.*, to promote the use of natural gas as a fuel for vehicular use.
- GEMSA established a strategic alliance with GALILEO TECHNOLOGIES, from Argentina to commercialize the technology of gas for vehicle use, having sold to GAZ DE FRANCE the equipment for their CNG station for public supply in Tultitlán, State of Mexico.
- In 2013, GEMSA established agreements with Tomasetto Achille “TA” Argentina, leading company in fuel-natural gas dual conversion technology.

Current Situation

Although the environmental benefits associated with the CNG were important for large companies and the government, the loss of economic benefits and forecast of higher prices of natural gas during the period 2003-2009, and insufficient infrastructure to transport natural gas in Mexico led GEMSA to defer the plan to promote the use of natural gas as vehicle fuel until price and infrastructure conditions would change.

The high price of natural gas led to extensive technology development to exploit the "Shale Gas" mainly in the United States with the resulting reduction of the prices at levels of around US\$3.0/MBTU's with long-term perspectives of large supplies.

Based on the above Pemex and CFE undertook an aggressive program of infrastructure by constructing new pipelines to transport natural gas in various regions of the country.

In April 2015 the Ministry of Environment and Natural Resources (SEMARNAT) promoted the use of natural vehicular gas. In the words of the SEMARNAT Minister, Juan José Guerra Abud “The goal we are setting is very conservative, it is that at the end of this administration we have at least one million natural gas vehicles in the country”



The extensive promotion of natural gas for vehicle fuel worldwide, led to an intensive research and development program, currently with 5th generation technologies in the equipment required for using natural gas in vehicles, then Gemsa's Grupo Galileo de México established a relationship with Tomasetto Achille leader in technology of conversion gasoline-nat gas

In Mexico's situation, this same impulse can be appreciated in a context of feasibility:

- Federal and local policy to reduce air pollutant emissions.
- Federal and Global policy to reduce CO₂ emissions and greenhouse gases.
- Public policies to promote and impulse the use of natural gas as fuel for vehicles (tariff reductions, no application of the circulation restriction program and support of development banks that provide soft credit lines).
- Advanced and proven technological development for the use of natural gas as vehicle fuel.

Worldwide Leader Countries in the use of Natural Gas for Vehicles

Country	Natural Gas Vehicles	Refuelling Stations
Iran	3,500,000	2,220
China	3,327,500	5,730
Pakistan	2,790,000	2,997
Argentina	2,466,164	1,939
Brasil	1,781,102	1,805
Italy	823,000	989
Colombia	492,649	716
Bolivia	262,538	178
Armenia	226,800	345
Peru	183,786	237
Germany	96,349	915
Venezuela	90,000	166
Others	2,631,185	4,251
Total Worldwide	20,069,538	25,521

Benefits of using Natural Gas for Vehicles

Ecological advantages, regionally, by reducing emissions of CO, HC, NOx compared to gasoline, leading to reduced levels of air pollution including the ozone (O₃)

Ecological advantages, globally, by reducing gases that lead to Climate Change

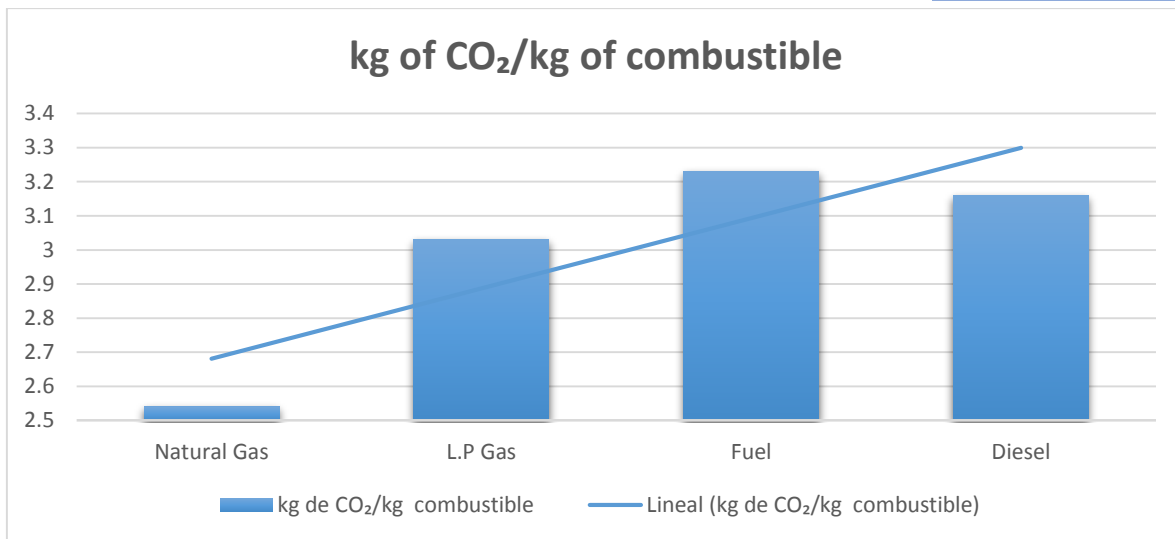
Economical advantages, due to the low price of natural gas compared to gasoline and diesel, around 40%.

Economical advantages, due to the low price of natural gas compared to gasoline and diesel, around 40%.

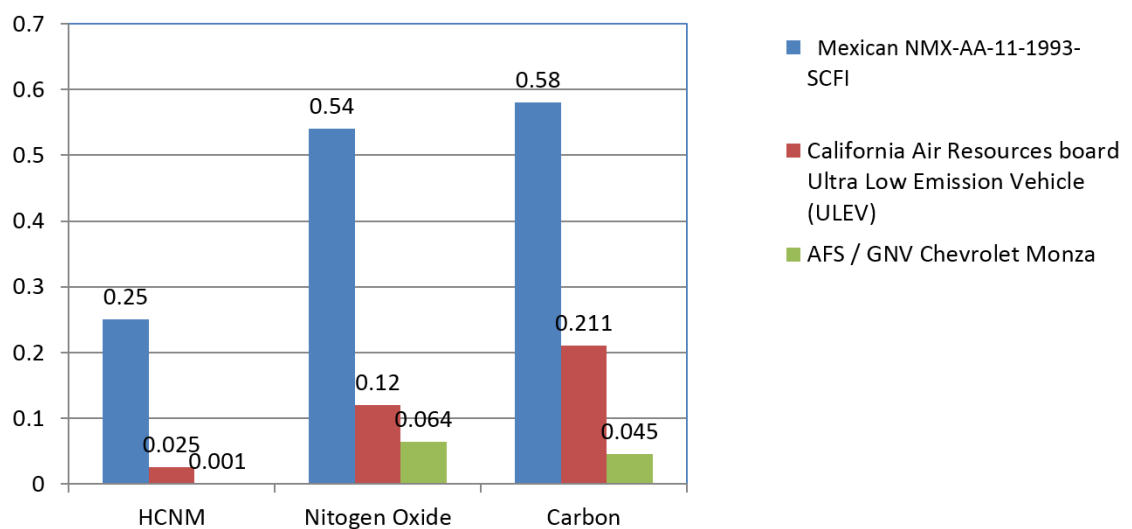
Ecological Advantages

1. Reduces considerably Carbon Dioxide emissions

Combustible	kg de CO ₂ /kg combustible
Natural Gas	2.54
L.P Gas	3.03
Fuel	3.23
Diesel	3.16

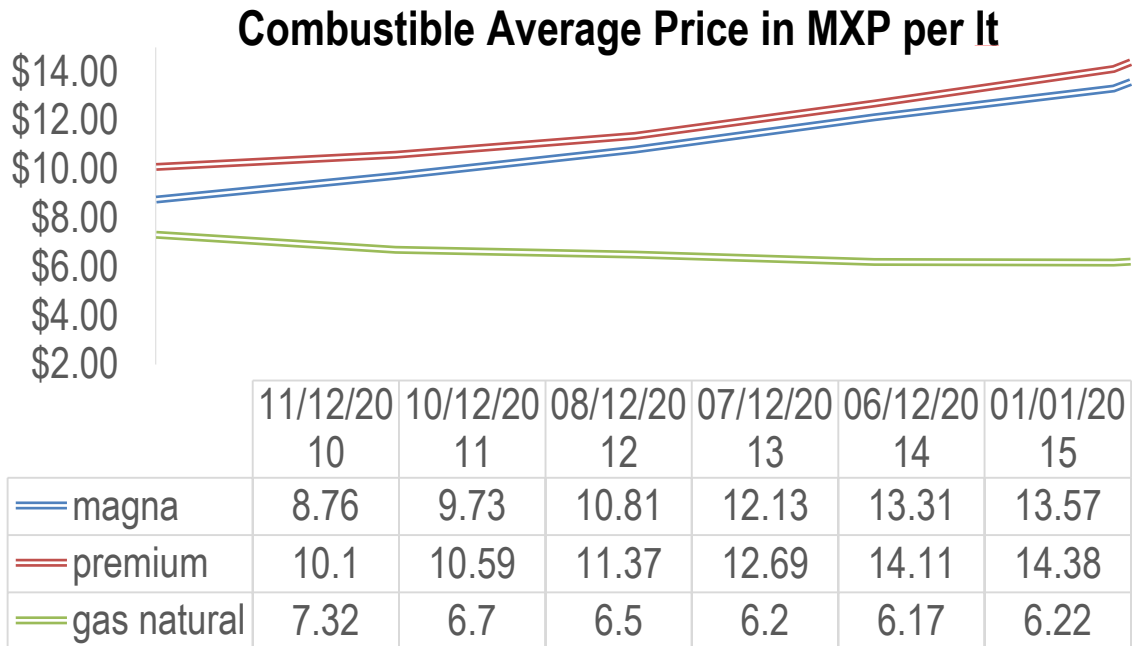


2. When compared to gasoline emissions are reduced

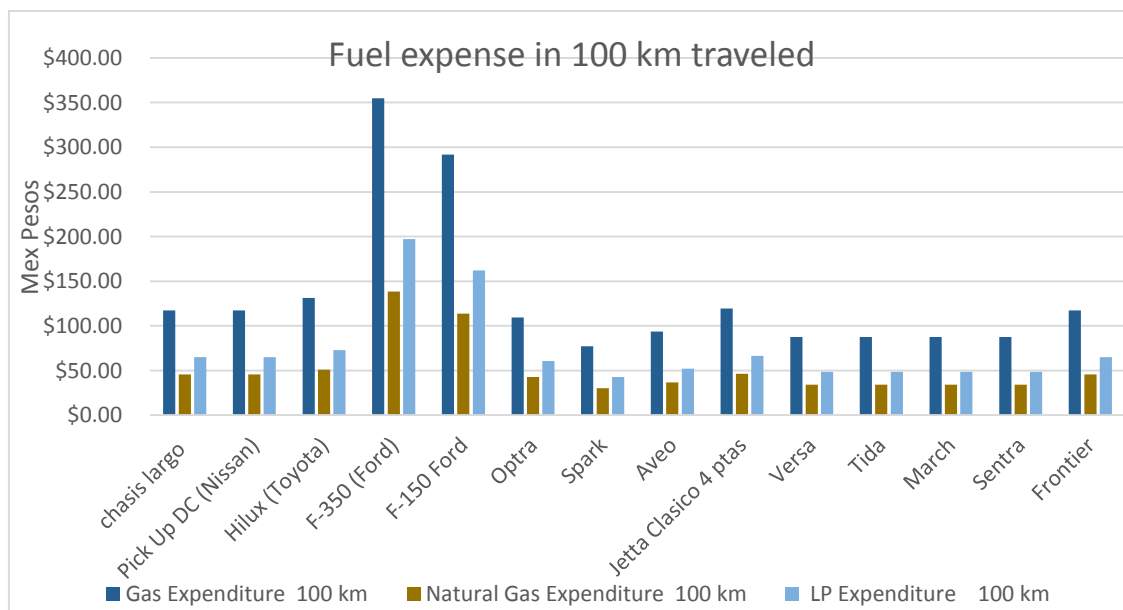


Economical Advantages

1. It has a considerably lower Price when compared to other fuels.



2. The savings compared to liquid fuels become up to 40%



Technology:

Technology T.A. 5th generation, is designed as not to be manipulated in calibration, ensuring smooth operation.

Certification of conversion equipment and tanks for compressed natural gas use, increases proven security, as related to the use of gasoline, diesel and LP Gas.



Conversion

Of unit



To GNV

Utility Vehicle converted to Natural Gas



**COMPANY OF
GRUPO EMPRESARIAL MÉXICO (GEMSA)**
Calzada Santa Catarina 148,
Col. San Ángel Inn,
C.P. 01060, México, D.F.
Phone: +52 (55) 5481-2330
Web: www.gemsa.com