



## **In it for the long haul**

Liquefied Natural Gas - the sustainable energy option for transport and logistics.



**CALOR**

LNG

## Fresh thinking for fleets

For over 80 years Calor has been at the forefront of alternative fuels in the transport sector as a leading supplier of liquefied gases. Since the 1970s, Calor has led the development of propane (Autogas) for vehicles. Throughout this time, Calor has developed a number of market-leading solutions to support the development of liquefied fuels, most recently liquefied natural gas (LNG).





## LNG - our global story

As an SHV Energy company, Calor has drawn upon the experience, knowledge and resources of its pan-European LNG business including:

A network of cutting edge LNG installations across Europe.

Dedicated Calor LNG supply chain.

Over 100,000T of LNG delivered annually into the transport, industrial and marine sectors.

Industry-leading engineering design teams and dedicated LNG commercial sales teams.

24/7/365 support from Calor including enquiries, customer service, engineering and emergencies.

# Keep your bills and CO<sub>2</sub> emissions down but your tank topped up

With rising fuel costs and increasing focus on reducing emissions, the transport industry is under pressure to find alternative solutions to address these concerns.

For decades diesel has been the default option for vehicle fleets, and Heavy Goods Vehicles in particular. But with the advent of commercial vehicles powered by liquefied natural gas (LNG) all that is changing. Mainstream manufacturers including Iveco, Scania and Volvo now offer a choice of dedicated LNG-powered trucks that have comparable performance to diesel vehicles in terms of power, acceleration, and cruising speed.

A further development is the EC draft legislation that would require LNG fuelling stations to be installed every 400 km (about 250 miles) on the roads that make up the trans-European core network by 2020. When approved, this infrastructure will support the predicted demand for gas-powered vehicles.

With a planned infrastructure development in Ireland that includes refuelling locations in Belfast, Cork and Dublin adding to the already almost thirty LNG refuelling stations strategically located around the UK, six of which are Calor sites, transport planners and drivers need not worry about being stranded, regardless of whether they run a back-to-base or trunking operation. As the market grows Calor is looking to build upon this network by offering both public and private LNG refuelling stations across the country.

Looking further afield, in conjunction with our sister company PrimaLNG, we offer a pan-European network of LNG refuelling stations with sites currently in France, Belgium, Holland and Italy and more coming online.

LNG trucks are already in widespread use throughout the UK and mainland Europe. In fact, as the fastest-growing fossil fuel<sup>2</sup>, natural gas-powered vehicles are predicted to account for 20% of HGVs sold by the early 2020s<sup>3</sup>.

## Calor LNG public refuelling network



\*planned locations

<sup>1</sup> 2018

<sup>2</sup> EIA International Energy Outlook 2016

<sup>3</sup> Martin Flach - Iveco Product Director

## What is LNG?

Liquefied Natural Gas is, quite simply, natural gas in liquid form. Gas becomes liquid when cryogenically cooled to  $-162^{\circ}\text{C}$  and takes up to 600 times less volume than natural gas, making it easier – and more cost-effective – to transport and store. Importantly, in its liquid state, LNG will not ignite.

## LNG, what you need to know

Here are just some of the benefits you can expect from switching your fleet to LNG.

**Cleaner** – Natural gas is the cleanest of all fossil fuels and cuts  $\text{CO}_2$  emissions, whilst also drastically reducing  $\text{NO}_x$  and other dangerous particulates. LNG is currently the only viable alternative to diesel for long haul haulage.

**Quieter** – With LNG engines, noise levels could be reduced, enabling your fleet to operate in areas where noise restrictions apply such as residential neighbourhoods and town centres.

**Environmental** – LNG doesn't represent the same risk as diesel in terms of leaks or contamination.

**Safer** – LNG is both non-toxic and non-corrosive. Its high combustion temperature of  $650^{\circ}\text{C}$ , more than twice that of diesel, means it cannot spontaneously combust. LNG is also lighter than air, so in the unlikely event of a leakage, rather than accumulate on the floor, it would immediately rise, drifting away from any possible ignition sources.

**Plentiful supply** – LNG is widely available worldwide, ensuring energy security, reducing dependence on oil-producing nations and leading to more stable pricing than other fuels.



Reducing  
**CO<sub>2</sub>**  
 LNG helps to reduce  
 CO<sub>2</sub> emissions and other  
 harmful particulates.

## Ready and waiting

### Back-to-base refuelling

For larger operations that have space for bunkering fuel on site\*, it may be viable for Calor to install an on-site refuelling station for businesses that operate ten or more LNG trucks.

Calor can offer a full turnkey solution from design to build and ongoing maintenance of the system.

The system deployed on a back-to-base site is part of an integrated solution from Calor whereby you get access to the network to support your gas fleet movements.

As part of the Calor solution, LNG stocks are remotely monitored by Calor and deliveries scheduled by our logistics team.

### Quick and easy refuelling

While drivers must wear Personal Protective Equipment (PPE) while taking on fuel that has been chilled to -260°F (-162°C), filling an LNG tank is otherwise as quick and easy as filling a diesel tank. LNG stations are designed in line with the latest international safety standards and include other parameters set by Calor's leading LNG design engineers who work closely with all vehicle manufacturers of gas vehicles.

All stations operated by Calor come with a fuel monitoring system that enables optimum deliveries of LNG or for refuelling data to be provided at the touch of a screen to an operator.

Analysis suggests that, on average, drivers of LNG trucks spend around 7 minutes at the fuel stop from entry to exit with the refuelling process itself taking about 4 minutes<sup>5</sup>.

## Switch on to savings

**Cost-effective** – Throughout the last couple of years, LNG pricing was on average 30% cheaper than diesel, making the move to gas a cost-effective solution.

**CO<sub>2</sub> reductions** – Predictions show that HGVs powered by LNG can reduce carbon dioxide emissions by between 10 and 20% dependent upon duty cycle and vehicle type. LNG also has significantly fewer health and safety risks than its oil-based counterpart, due to its non-toxic and non-corrosive qualities.

**Opportunity to win new business contracts** – by helping your customers achieve their sustainability goals.

**Compliance with environmental legislation** – As the latest generation of natural gas-powered vehicles is compliant with Euro VI emissions standards they automatically comply with Low Emission Zones (LEZ)

Calor offers a complete turnkey solution that makes it easy for you to switch. This encompasses design and installation, all maintenance (including replacement parts and labour), training, commissioning and an emergency callout service.

It all starts with an initial visit by one of our energy consultants who will review your current fleet requirements and fuel needs and advise whether you'd benefit from switching to a Calor LNG solution after taking account of your annual mileage, average fleet mpg, types of long haul routes and journey patterns.

up to  
**30%**  
 more cost effective  
 with HGVs powered  
 by LNG compared  
 to diesel.

\* Subject to site survey  
<sup>5</sup> Vos Logistics whitepaper

**Contact us:**

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