Getting ahead through innovation.

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Step 1: Why LNG is worth your while

We will help you to understand how LNG can improve your bottom line. Our value propositions have a thorough understanding of all market statistics and we work closely with major heavy truck dealers and involved smaller chains.

Step 2: Analyses and preparation

Our starting point is a joint analysis of your operation and fuelling pro-

cesses. Through this analysis, we will create a profile of your fleet

including driving patterns etc. in order to quantify requirements, potential benefits and expected savings. In addition, we will develop a plan for how you can introduce LNG in your company and

cover the entire technology chain from liquefied gas to fuelling solutions. We also offer solutions for fuelling from pipeline, i.e. on-road fuelling. Your cost case is compensated before being stored in the vehicle.

Step 3: Test

In most situations, trucks still run on diesel and are considered

fuel. We therefore give you the opportunity to carry out a small-scale trial with an aim to verify the performance of this fuel and its impact on the technical and financial feasibility. Moreover, this ensures that drivers can safely handle LNG on their normal routes. We have developed modular and scalable solutions in order to meet strict legislation and legal requirements as well as providing a continuous and high-quality performance of fuelling stations.

Step 4: Scale-up

The two-phase normally takes around 6 months. After the evaluation of the route, we will define specific guidelines for the continued introduction of LNG vehicles and refuelling infrastructure. Typically, the plan includes three main refuelling technologies required and ensures that the new infrastructure meets the demands of the new vehicles and routes.

Step 5: LNG for the future

Looking two years into the future, it is our strong belief that LNG will

steal many markets, replacing diesel as the standardised fuel for

high-quality vehicles. Additionally, LNG fuelling infrastructure will be broadly available along both long and short transport routes. As an early mover, you now have the chance to create significant value by converting your fleet to LNG, while lowering emissions at the same time.

Step 1
→ Presentation of LNG as a fuel
→ Support from local Linde LNG specialists
→ Connection to other involved stakeholders (OEMs, retailers etc.)

Step 2
→ Analysis of fleet operation
→ Definition of opportunities
→ Quantification of potential benefits
→ Plan for LNG introduction

Step 3
→ Test with limited amount of vehicles
→ Setup of challenge Hubbard test for feasibility
→ Training in handling and operation

Step 4
→ Test evaluation
→ Expansion of refuelling infrastructure according to expected fleet demand
→ Closely linked planning and execution during scale-up

Step 5
→ Lower fuel costs
→ Emissions reduction
→ Safe and convenient operation

Linde supports you from start to finish.

Step 1: Why LNG is worth your while

Step 2: Analyses and preparation

Step 3: Test

Step 4: Scale-up

Step 5: LNG for the future

Getting ahead through innovation.

With its innovative concepts, Linde is playing a pioneering role on the global market. As a technology leader, it is our task to constantly raise the bar. Traditionally driven by entrepreneurship, we are working steadily on new high-quality products and innovative processes.

Linde offers more. We create added value, clearly discernible competitive advantages and greater profitability. Each concept is tailored specifically to meet your requirements – offering standardised as well as customised solutions. This applies to refuelling stations and all components regardless of their size.

If you want to be ready for tomorrow’s competition, you need a partner by your side for whom top quality, process optimisation and enhanced productivity are part of daily business. However, we define partnership not merely as being there for you but being with you. After all, joint activities form the core of commercial success.

Linde – ideas become solutions.

Your road to LNG. Linde supports you from start to finish.

Liquefied natural gas as a fuel for trucks.

Fast tracking energy solutions.
Liquefied natural gas – the new power source for trucks. A perfect substitute for diesel and other fuels.

Linde is an international gases and engineering company with a long tradition and a deep expertise in various industries. Based on its extensive experience from designing and engineering various technical solutions for LNG, including production plants, re-liquefaction units, cryogenic storage tanks and fuelling station equipment, Linde has now developed a unique fuelling station concept, which is modular and scalable, and offers 0-venting of methane to air and a diesel-like fuelling performance. Moreover, the concept also includes LCNG technologies to serve CNG-powered vehicles – either as a free-standing or LNG-integrated solution. Together with the supply of LNG, this fuelling station concept is the core of our offer for customers wanting to tap into the benefits of using LNG to fuel their truck fleet.

What makes our LNG/LCNG fuelling stations unique?

→ 0-vent technology
→ Diesel-like fuelling performance
→ Modular, scalable and suitable for any on-board storage solution

Benefits of natural gas

In all developed markets, the transport industry operates under strict emissions regulations and, in the future, the trend is towards lower CO2 and other emissions and even for the first time in public interest in the fueling of natural gas. Natural gas is clearly a more environmentally friendly solution than diesel it produces less CO2, emissions, has low NOx emissions, low solid particle emissions and virtually no sulfur oxides emissions. Furthermore, natural gas is cheaper than oil and, in the long term, the price spread between the two is likely to continue to grow.

Another major benefit of natural gas is its safe application. It contains no toxic or corrosive components and does not pose the risk of spontaneous combustion. Linde makes the fuelling of natural gas much easier and safer. The patented fueling systems can be filled by LNG trailers and dispensed much more quickly than fueling of diesel vehicles. This makes the fuelling of natural gas just as simple and quick as the fuelling of CNG. Furthermore, the regional networks of natural gas fuelling stations are growing, and in many cities, the traffic congestion is better than that in conventional diesel motors.

Natural gas can also be used for fuelling CNG-powered vehicles where the "C" is converted to "L" right at the dispenser in an operation referred to as LCNG. This is mainly used in locations with access to a natural gas grid, e.g. in remote high ground outside of more densely populated city areas. Over the past years, Linde has equipped dozens of fuelling stations with both LNG technologies, in each case, the technologies have been selected according to the individual requirements on site in order to achieve the best and most economical solution.

Fully equipped by Linde. LNG and LCNG fuelling stations.

LNG or CNG?

Natural gas can be fuelled either in its gaseous (CNG) or liquid (LNG) form. Liquefied natural gas is getting more and more attractive for trucks that have long distances to travel. An important advantage of LNG is its higher density, containing in its 1% to 2% volume far more energy than fuel stored in a tank filled with the same volume of CNG. Consequently, longer distances can be covered without refueling. Another advantage of LNG is that it can be pumped at high flow rates, thus LNG can be dispensed much faster into a diesel-powered vehicle, allowing for a diesel-like fuelling performance.

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Further information or enquiries?

For further information or any other questions concerning the fueling of natural gas, please contact our Linde representatives.

Functional diagram of our LNG/LCNG fuelling stations.