Dover Fueling Solutions: Which future fuel is best?

FCEV vs CNG vs LNG vs EV. Which is the right future fuel for you?

Despite the move towards decarbonisation, internal combustion engine (ICE) vehicles are still prevalent in most markets.

Up to 2020, **nearly 80% of all passenger vehicles sold in the leading European markets were petrol or diesel**, with the average lifespan of road vehicles being 10 years.

Clearly, the road to carbon-neutrality is a rocky one with barriers to adoption including price, range and refueling/charging anxieties. However, **news that UK electric vehicles sales outpaced ICE sales for the first time in December 2022** offers cause for optimism in the race for adoption.

As motorists continue to embrace greener transport, many drivers will be considering which clean fuel is best for them. For fleet managers and sustainability directors, many will be wondering which is best for business?

At present, market leaders appear to be hydrogen, electric, Compressed Natural Gas (CNG) and Liquefied Natural Gas (LNG) – each with their own advantages. But which is right for you, your business sector or personal driving habits?

We drill down into the data and review what your fuel of the future might look like.

Hydrogen

Hydrogen would appear to be a strong choice for long-haul, heavy-duty vehicles and other commercial transport and we are starting to see the first fuel cell trucks **recently appearing on the European market**.

The Hydrogen truck lends itself naturally to the mass mileage demands of HGV haulage. Hyundai's current Xcient model, for instance, can travel 400 miles on a single tank, while Volvo is pouring millions into the development of its own hydrogen-powered alternative **with a range of 1000 km**.

Volvo's simple nozzle-to-pump dispensation will also appeal to motorists, with no need for time-consuming charging which may complicate electric, battery-powered alternatives.

To fully flourish, however, greater infrastructure is needed to support future fuel development. Hydrogen investment is growing but not as quickly as that of electric vehicles (EV). Market leaders, Germany provide a neat case study with **total German hydrogen refueling stations expected to reach 85 by 2025 and 300 by 2030**. Despite this, cumulative hydrogen investment **totals €40 billion, which lags behind EV at €51 billion**.

One other thing to note, when it comes to this future fuel is cost. In Germany, **the average price of**

fuel per 100km is 7.60 euros for Hydrogen, compared with 9.05 euros diesel and 11.74 euros for petrol.

Compressed Natural Gas

One lesser known option is CNG which is widely accepted to be the ***'cleanest fossil fuel'***. Its chemical properties mean it's compressed to less than 1% of its volume while it **reduces carbon monoxide emissions by 90 to 97 percent**.

Although it's a non-renewable source, having been formed millions of years ago from decomposing plants and animals, CNG is non-toxic and has fiscal benefits too. Every 1% increase in natural gas production **can create 35,000 jobs**.

Statistically, **CNG is 30% more efficient than petrol** with a vehicle able to travel the same distance on 6/7 litres of CNG as 10 litres of petrol. As with any fuel, pricing is subject to global market conditions, but it remains the cheapest non-renewable energy source. Its nozzle-to-pump refuelling method is also a clear user benefit.

Despite this, CNG adoption is currently in its infancy. There are currently only 4,159 refilling stations across Europe, which makes it more of an option for fleet owners as opposed to the everyday motorist.

This is not to say that CNG doesn't have mainstream potential, with the fueling option accepted in Europe for passenger vehicles. Almost **any petrol vehicle can be retrofitted with a CNG system for around €3000 - €5000**, which could make it a shrewd alternative to other clean fuels. This may appeal to businesses or commercial fleets that require its efficiency benefits.

In Germany – CNG market leaders – the fuel compares favourably in terms of price too. **The average cost of fuel is 6.48 euros per 100km** for CNG, compared to 9.05 euros for diesel and 11.74 euros, petrol.

Liquefied Natural Gas

LNG is another derivative of the abundant natural gas, formed when natural gas is compressed and cooled to -162 degrees Celsius. The International Energy Agency estimates that **if consumption remains at present levels, there are enough resources to last 230 years**.

Again, much like its counterpart CNG, LNG is a cleaner fossil fuel, producing 40% less carbon dioxide than coal and 30% less than oil. It's clean and quiet burning, while its familiar refilling method should appeal to drivers.

LNG infrastructure may be embryonic, but it is fast growing. There are around 635 LNG stations on the continent with the bulk concentrated in Western Europe - **Germany with 162, Italy with 130 and Spain with 90.** This represents a network that has doubled in size in less than two years.

Ultimately, consumers want energy to be affordable, secure and capable of driving down Carbon emissions. LNG ticks all these boxes.

Its cost-competitive benefits mean it has strong potential for commercial transport.

An alternative energy spark – electric vehicles

While the hydrogen propulsion method first gained traction in the early 2000s, this has been supplanted in recent years by the rise of EVs.

The European market is currently leading the charge on the global stage with 1,390,000 units sold across the continent per year. By 2030, every second car sold is expected to be powered by electricity.

This has serious potential for the general motorist. Massive investments are being made across EMEA as countries pour billions into charging infrastructure. The Netherlands is currently blazing the trail with **90,000 charging points as of 2022**, while Europe plans to have **1.3 million public chargers in place by 2025 and 2.9 million by 2030**.

Price points also offer mainstream charging potential. In the Netherlands, **the average cost of electricity per 100km is 5.31 euros** compared to 8.66 euros for diesel and 12.32 euros, petrol. Home and workplace charging stations, meanwhile, remain safe and easy to use where drivers can simply '*plug in*' their vehicle to the charge point.

Despite this, charging times, range anxieties and initial cost remain main barriers to adoption. David Mc Guinness, Director of Product Management, Electric Vehicle
Charging at **Dover Fueling Solutions** expands on reasons for this: "While price and range concerns are being addressed by automotive manufacturers, more needs to be done by authorities to improve access to '*the plug*'.

"Dependable, renewable energy infrastructure is required to feed the grid with a need to create a consumer-centric recharging model that serves the practical needs of EV drivers."

"As local governments begin to embrace this, companies can deliver high-quality fast chargers to market."

Conclusion

As the world, and the transport industry, move towards Net-Zero, it’s likely all four options will be an integral part of the decarbonisation mix, each with their own distinct benefits.

In fact, each offers something unique, so you should take time to explore your options and make a well-informed decision on which of these future fuel alternatives will suit your business goals and lifestyle the best.

For more information, visit https://www.doverfuelingsolutions.com/.

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