

Alternative fuels

Enabling fuel diversification
through advanced
lubricant solutions



Formulating
tomorrow
together

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As commercial vehicles diversify beyond diesel, Infineum additive technology helps lubricants meet new fuel-specific demands

A complex landscape of ICE future fuels

Fossil fuels
Gasoline | Diesel

Bio-fuels
Ethanol | Fatty acid methyl ester | Hydrogenated vegetable oil

Fossil-based alternative fuels
Liquid natural gas | Liquid petroleum gas

Carbon-neutral fuels
Methanol | Ammonia | Hydrogen | Synthetic / e-fuels

How we're designing for the future

Infineum additive technology

Challenges identified

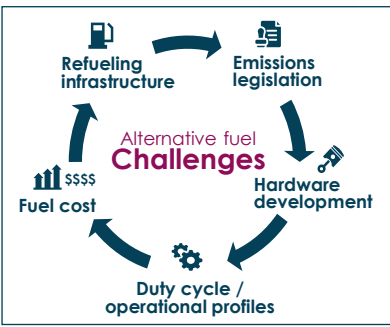
O_x NO_x H^+ H_2O

Fuel and combustion by-products

Rebalance for specific needs

High performing bespoke or multi-fuel products

Regional variation in uptake and availability



Alternative fuels place new demands on heavy-duty lubricants, driven by:

- Different contaminants and combustion by-products
- Shifts in engine temperature, acidity, water and fuel dilution
- Application-specific duty cycles and operating conditions

Infineum additive solutions help rebalance lubricant performance for both multi-fuel flexibility and fuel-specific optimisation.

Alternative fuels comparison matrix:

☐ Unfavourable ☒ Favourable

	Emissions & sustainability			Fleet flexibility	Costs	Infrastructure	Tech maturity
	ZEV	% change in GHG vs. Diesel *	Local air quality (NOx / PM)	Range, load, refuelling downtime	Vehicle purchase, operation and servicing	Fuel and refuelling availability	
Diesel	☐	n/a	☐	☒	☒	☒	☒
PHEV ** + Diesel	☒	-12	☒	☒	☒	☒	☒
Biofuel (HVO)	☐	-62	☐	☒	☒	☒	☒
Natural gas (LNG, LPG)	☐	-15	☒	☒	☒	☒	☒
RNG	☐	->100 ***	☒	☒	☒	☐	☒
H2ICE #	☒	+22, -41, -71	☒	☒	☒	☒	☒
BEV ##	☒	-21	☒	☒	☒	☒	☒
FCEV #	☒	+2, -52, -76	☒	☒	☐	☒	☐

ZEV = Zero Emission Vehicle * = vs. Diesel (g CO2 eq/t.km) ** = 130 kWh battery capacity *** = carbon positive, based on life-cycle carbon accounting
= grey, blue and green hydrogen ## = using world average carbon footprint of grid electricity (local examples: EU =-45, US = -29, CN = -10)

Managing new fuel risks. Enabling multi-fuel performance.

Scan to visit our website for more information, or to get in touch.

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