Gasrec/B&Q dual fuel (biomethane - LNG blend) for warehouse-to-store deliveries

Implementation of low emission technologies; Innovative vehicles, vessels and equipment; Business to business (B2B) solutions, cooperation; Business models: new form of ownership, risk management; Transport management, fleet management; Service quality and sustainability

This is one example of a whole series of projects in the UK to validate the option of alternative fuels and energy inputs for heavy goods vehicles. UK government is sponsoring a range of projects and trials around this theme. This particular initiative is a commercially driven project. Details of the trial remain commercially confidential.

Benefits:
- to validate the option of moving from a total dependency on diesel fuel as the primary energy input,
- to secure a more stable price input
- to reduce emissions.

Success Factors:
- the commitment to the project in terms of asset acquisition (infrastructure, vehicles) and personnel is significant
- the use of a mixed diesel/gas engine technology mitigates the problem of running out of gas, whilst the gas supply infrastructure is developed

Supported Strategic Targets:
- Increased efficiency/productivity of logistics processes
- Minimisation of financial risks
- Increased competitiveness
- Image
- Reduced emissions

Solution
The main problem that led to the development and introduction of the practice were fuel price pressures and concerns over emissions. Prior to the practice, there was total reliance on the use of diesel fuel as the primary input for road transport to service B&Q’s logistics network. The practice also supported the long term company commitment to reduce emissions for haulage.

The project was designed to develop a form of best practice by bringing together commercial issues (fuel price escalation) and concerns over emissions and particulates limits. Gasrec supplies the fuel to the user/operator’s tanks from wholly owned production sites blending bio gas with LNG. The fuel offers a greater level of security of supply with direct control over the supply chain to the point of delivery (Swindon). The anerobic gas is produced from a range of sites (landfill and anaerobic digestors) and is blended with LNG. The two gases are chemically identical.

The project introduces stability into fuel purchasing and also involves the use of a claimed zero carbon fuel source. The fuel is claimed to be cheaper at the point of use. The emissions are much cleaner with minimal particulates and the use of this fuel is effectively carbon neutral at the point of use. However, the use of this technology could be limited on the grounds of competitive availability of the liquid bio-methane and LNG.
Use of bio-methane as a diesel fuel substitute. The fuel is a liquid rather than gaseous and is claimed to be carbon neutral as it is produced from anaerobic plant using a wide variety of input material. No separate assessment of the carbon inputs required to generate and transport the fuel to the point of delivery has been made. Bio-LNG is Gasrec’s proprietary fuel blend. The standard blend is 25% Liquefied Biogas (LBM; which in pure form reduces CO2 by up to 70% compared to diesel) and 75% Liquefied Natural Gas (LNG), which is widely available and cheaper than diesel.

The project had difficulty in terms of land use/planning conditions surrounding the siting and installation of protective bunds and landscaping which delayed implementation. New tankage facilities are being installed to provide greater capacity at Swindon.

More information:

Contact details:
Michelle Thomas B&Q +44(0) 2380 690 000
Martin Denham B&Q Swindon +44(0) 77252 66805
GasRec London +44(0) 203 004 6888

The B&Q practice is transferable but the codes for the production, taking into consideration that blending and transport of liquid bio-methane may vary between countries and within countries which could act as a limitation on the uptake of this option.

Tax issues and levies could dilute the cost effectiveness of this solution. The legal position on the production, transport and dispensing of the fuel would need to respect the local regulatory environment.

The technology for use of the fuel is already recognised by HGV manufacturers either as a factory fitted item when a truck is assembled or as a retro fit. The engine technology could be used on smaller vehicles although the biggest gains are likely to accrue through application to HGVs.

Pictures:

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