



THE PROPANE ENRICHMENT OF BIOMETHANE

– THE FUTURE OF ENERGY SUPPLY



PROPANE ENRICHMENT OF BIOMETHANE – WHY IS IT NECESSARY?

**Innovation
as standard**

**Complete
solutions**

**The power
to deliver**

**Market
leaders**

The upgrading of biogas into a commercially viable biomethane offers the opportunity to inject this green energy source back into the national grid.

For this to happen the biomethane needs to reach the gas quality standards as set out in the Gas Safety (Management) Regulations 1996. Typically natural gas in the UK grid contains 90% methane, with a calorific value of about 39.5 MJ/m³. Biomethane on its own characteristically has a methane content of up to 98% and a calorific value of 36 MJ/m³. In order to match the two energy sources, biomethane needs to be 'spiked' with a gas with a higher energy content, such as propane.

Flogas – market leading solution providers

Since Flogas entered the LPG market in 1984, we have looked to move our business forward with an innovative approach to everything we do. It is for this reason that Flogas took an early interest in the burgeoning biogas market and began to develop a solution for the propane enrichment of biomethane. We now stand not only at the forefront of the LPG Industry, but also as market leaders in the propane enrichment of biomethane sector.

Technical excellence

Flogas has invested heavily in its technical capabilities in recent years, acquiring some of the most inventive and capable technical minds in their fields. Extensive experience in the design and manufacture of control systems means that we are now uniquely placed to support your project. From the development of a propane injection system and complete installation works, to the reliable delivery of LPG to power it, you can rely on Flogas every step of the way.

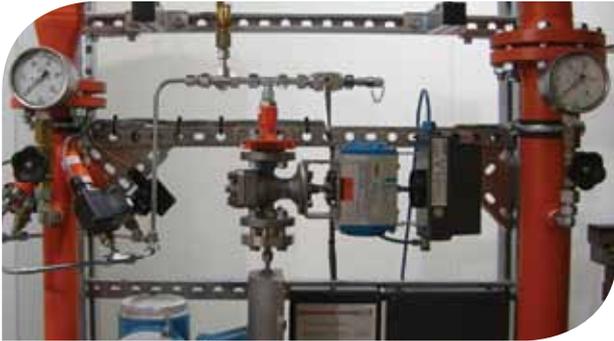


THE TECHNOLOGY

The Liquid Propane Injection System

The biomethane to grid concept might still be relatively new to the UK, but it is a tried and tested technology in many European markets.

The Liquid Propane Injection System represents not only a revolutionary step forward with regards to the propane enrichment of biomethane, but its efficiency has been proven to work time and again. Flogas now holds the exclusive right to the Liquid Propane Injection System in the UK and can use it in the design and installation of your new biomethane plant.



How does it work?

The Liquid Propane Injection System allows propane to be delivered into the biomethane in aerosol form, as opposed to a liquid. This allows for the propane to be vapourised by the warmth of the biomethane which, for some applications, can result in a cost free cooling solution when injecting biogas back into the grid.

Once the two gases are together they are then passed through a static mixer which ensures they are adequately mixed.

Eradicating the need for a vapouriser, the Liquid Propane Injection System brings countless benefits over a more traditional vapour system. As well as containing a mass flow meter, control valves and pressure switches, the system also comes with an easy to use touch screen PLC unit.

The Flogas Vapour systems

Although the revolutionary Liquid Propane Injection System is perfect for the vast majority of projects, there are certain clean processes where a vapour mixing system might be better suited.

Where such a development exists, Flogas has the perfect alternative – our Vapour Mix system. Our experience in this area means we are ideally placed to advise you on the most suitable system; if there is excess hot water available from the process a Shell & Tube vaporiser would be the best fit, or if an electric vaporiser is required, we can supply you with one of our own built in the UK. Our PLC is easily incorporated into the sites overall control system.



LPG STORAGE & SUPPLY

Although our technical capability in the biomethane market has made us a market leading company, Flogas are still best known as a national LPG supplier. It is our expertise in this area that allows us to offer the complete gas to grid solution.

Once we have designed and installed the perfect propane injection system, we will develop the perfect LPG supply option to fit. Whatever your requirements, whatever size of site, we have a storage solution to match:



Mounded



Above Ground



Under Ground



Telemetry

Telemetry

Whatever storage solution is chosen, Flogas fit, as standard, state of the art telemetry units to monitor your LPG gas usage. This system will allow us to ensure the most reliable LPG delivery schedule possible. Coupled with the telemetry system, our nationwide delivery network of depots and tankers will make certain that your new project never runs out of LPG.

THE POWER TO DELIVER

The power to deliver

Nationwide network

Support structure

Dedicated staff

Our business is headed up from our head office premises in Syston, Leicestershire, where we have a team of over 100 people working across all divisions, from sales and marketing, to installations, technical, scheduling and more. Our 24hr emergency team are also based here. One of our responsibilities is to source our LPG from all the major UK oil refineries. Once collected, our fleet of tankers, based nationwide, deliver to our customers.



CASE STUDY: POUNDBURY ESTATE

Prince Charles' Poundbury Estate is the first plant in the UK to inject green biomethane directly into the local distribution grid on a full-scale basis.

TECHNICAL EXCELLENCE

Innovative Design

When the UK's first commercial gas to grid plant was looking for a company to design and supply a propane injection system, they came to Flogas. With technical expertise unsurpassed in this area, we were the obvious choice to design and build the perfect solution for their plant.

SOLUTION DEVELOPMENT

The Complete Picture

At Flogas, we pride ourselves at looking at the bigger picture. Not only did we design and build the propane injection vapour system, but also developed the perfect control system and LPG Storage solution.

Liquid propane is passed from 6 x 2-tonne underground tanks through a vapouriser, which utilises waste hot water from a biogas compressor. The warm propane vapour is then piped to the innovative vapour mix system. This consists of a highly sensitive control valve, linked to a control panel which carefully controls the quantity of propane to be injected to a static mixer, this ensures that the gas is adequately mixed.

LPG SUPPLIED

The power to deliver

In addition to providing the perfect system for the propane enrichment of biomethane, our enviable delivery network also gave our client the peace of mind they required, making Flogas the perfect choice.



YOUR BUSINESS PARTNER IN ENERGY

To find out more:

Visit our website www.flogas.co.uk or call us now on **0800 0223 308**

We look forward to welcoming you as a Flogas customer.







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