



CONTINUING OVER A CENTURY OF INNOVATION IN HIGH PRESSURE CYLINDERS

It's not out of the blue that we are turning green

Chesterfield BioGas division launched

- agreement offers turnkey projects for efficient production and use of a truly green fuel

We read of many new processes that are tagged 'green' these days. But genuinely few can match the complete verdant greenness of the compressed biomethane generation process being launched with our venture partners under the Chesterfield BioGas brand name.

This system enables the upgrade, storage and dispensing of renewable energy in the form of naturally generated biomethane. The feedstock is entirely from waste organic products

- no wasteful use of land to plant special crops
- no vast amounts of energy required to produce it
- no harmful residues from producing it
- almost zero harmful emissions when it is burnt

In other words, the highly efficient and economic fuel, which will come from the Chesterfield BioGas process, has no downside effects on the environment.

The schematic (right) shows a variety of organic waste products which can be converted into biomethane which is identical in composition to CNG (Compressed Natural Gas).

The exciting potential for this venture- in the planning for many months - is the range of uses to which the upgraded gas can be put:

- fuelling waste collection service and heavy goods vehicles
- powering taxis, passenger cars and even trains
- as a contributor to the wider national gas grid

Equally exciting is the number and variety of potential buyers for the system. We may easily guess that local authorities have a good source in domestic waste; and that water utilities can process sewage. But there are other less obvious generators of sufficient waste to make the process viable and profitable.

What happens to all the waste sandwiches which the supermarkets or service stations can't sell you before they are past their sell-by date?

What do horticulturalists do with all their tomato and vegetable tops when the harvest is over?

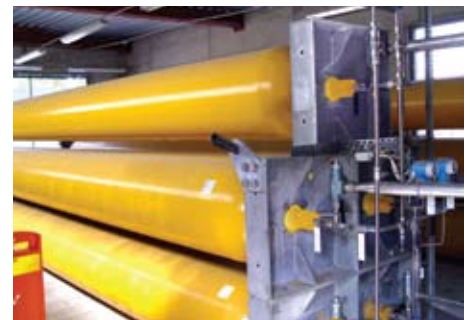
Returning slurry to their fields is now illegal, so what can farmers usefully do with it?

How can abattoirs usefully dispose of their by-products?

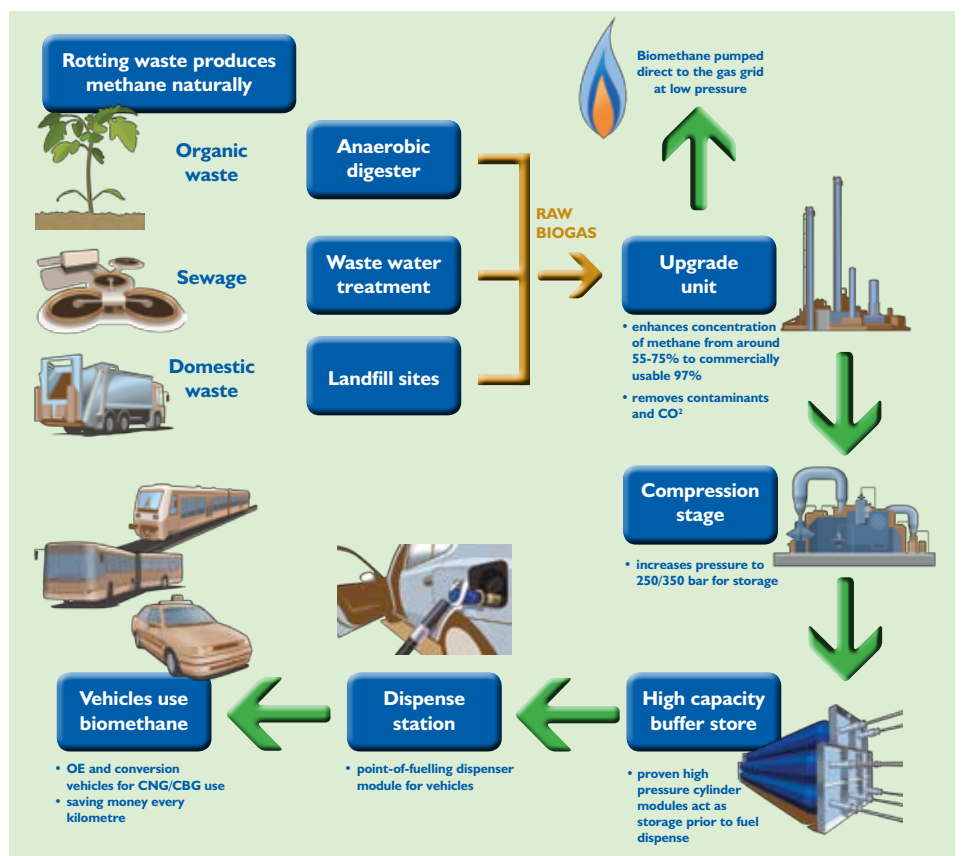
All of the above are viable materials for the production of raw biogas and its subsequent processing into biomethane. Seen in these terms, Chesterfield BioGas has a huge potential to contribute to one of the most environmentally friendly routes to the production of green energy.

The other factor, which distinguishes the Chesterfield BioGas process from the multitude of 'green' projects that we hear about, is that it is here, now - today's technology available today.

How will the new division operate?... see overleaf



Right: Chesterfield jumbo storage cylinders incorporated into a biogas system in Sweden



How the process works



How will the new division operate?

The new business association is with Greenlane Biogas Ltd - a New Zealand based company who are among the world leaders in biogas upgrading technology, and who have considerable experience in installing biomethane generation plants in Europe, and the Far East.

The co-operation agreement will give our holding company, Pressure Technologies, exclusive rights to market Greenlane™ equipment in the UK and Eire. At the heart of the systems offered for vehicle refuelling will be Chesterfield's high-pressure gas containment expertise, and in particular the bulk storage and cascade cylinders. The working relationship is well established. The two companies have worked together before, particularly on projects in Scandinavia, where Stockholm's buses run almost entirely on biomethane.

Production will not be affected overnight. Planning law puts a brake on the speed at which such processing plants can be built. Developments in vehicles which can run on biomethane need to be introduced by the manufacturers - although at least two multi-national companies will be offering right-hand drive vehicles for the UK market shortly.

Legislation is being amended to encourage wider use of such technology, particularly for the channelling of biomethane into the national gas grid. But it is expected that orders will be commenced in 2009 for completion in 2010.

Meanwhile, an intense marketing effort has already started to spread the word of the new venture. New literature and display materials have been produced, a new web site is being established, and Stephen McCulloch, a specialist Sales Engineer, has been recruited to concentrate solely on this aspect of our business - see his introduction below.

When Chesterfield BioGas exhibited for the first time at a specialist biofuels exhibition in October, our staff were flooded with enquiries from local authorities, utilities, farmers and energy consultants. Our marketing advisers are currently researching and sifting the best opportunities to promote the process from among the vast range of media and exhibitions which have jumped on the green bandwagon in recent years.

MD John Hayward says: "This is a low-risk, tried and tested biomethane fuel solution for the UK market. The joint skills and experience

of the two partners in this field mean that we are able to deliver an effective and successful system, when others can only offer prototypes. It is our intention for Chesterfield BioGas to be the number one choice for biogas processing in the UK and Eire."



Greenlane upgrade plant at Paloma in Spain

BIO:GASMAN

Reading through Stephen McCulloch's biographical notes, it is clear that he has much experience under his belt that will be put to good use as Sales Engineer, Chesterfield BioGas.

Stephen joined earlier in the year before the agreement was made with Greenlane and has been 'founding relationships with organizations, building a profile of customers' needs and developing the methods of customer relationship management.'

Those words are exactly how Stephen describes his time when he was with Ford Motor Company for 5 years, working on Ford's own marketing service to reach all within the motor sector.

Biofuels in general - and biogas and biomethane in particular - are what is known as a developing market, yet to have its established patterns of trade.

Consequently, besides sounding out potential customers for the Chesterfield BioGas process, Stephen has been meeting many government,

quasi-government, trade and environmental organisations in a two-way process - promoting the new business, but at the same time gathering intelligence and contacts to gain a well-defined picture of the market and the opportunities it may present in the short and medium-term.

Leaving Fords, Stephen was Sales Executive - Aerospace & Motorsport for Doncasters Precision Forgings in Sheffield. He helped foster relationships with organisations such as the MOD, BAE Systems and motor sport racing companies in Formula 1, touring car and NASCAR. Later he moved from sales to production management where he established systems across the different areas of

the work force, in order to focus on the quality of the forged products and, most of all, on-time delivery in full.

Since his arrival here, somewhat like our cylinders, Stephen is already at high pressure, with around ten potential Chesterfield BioGas projects now in motion.

Left: Stephen McCulloch



Naval cylinders once more in the international spotlight

Paris - not renowned as one of the world's great naval bases - was nevertheless the venue for one of the world's leading naval equipment exhibitions. Chesterfield Special Cylinders Limited exhibited on the British group stand at EURONAVAL 2008, promoting our range of ultra-large high-pressure cylinders for use in surface vessels and submarines.

Even more strangely, the exhibition was held at the former Paris airport at Le Bourget, where Sales & Marketing Director, Phil Redfern, can be seen in conversation with Rear Admiral Martin Alabaster, Flag Officer Northern England, Scotland and Northern Ireland, representing the UK's First Sea Lord at the exhibition.



If you would like to read past issues of the Chesterfield Newsletter, you can access them via our web site at www.chesterfieldcylinders.com/news

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A Pressure Technologies group company

