

BIOCHEM show case

Generate liquid fuel from landfill waste

Problem

A heavy reliance on road transport will soon lead to the UK being a net importer of gas and oil. The UK's 27% recycling rate is the lowest in Europe.

Technical solution

The Albury Landfill near Guildford receives 4 million tonnes of Surrey's waste. Gasrec, the UK's first commercial producer of liquid biomethane fuel (LBM), together with BOC and SITA UK, have begun producing LBM from the site. Organic degradation produces 2,200 m³/h with 50% methane, nitrogen and carbon dioxide making up the remainder. When processed this generates 5000 tonnes of fuel per annum (85% recovery).

LBM not only offers a renewable alternative to fossil fuels but also burns more cleanly and quietly than diesel. All vehicles that can operate on compressed or liquefied natural gas can run on LBM. The initial target for the use of LBM is commercial vehicles operating in the haulage and waste management sectors. Used widely, this fuel could make a valuable contribution towards UK's short term CO₂ reduction targets and lead to an overall improvement in air quality.

Hardstaff Group, runs LNG bulk transporters in the UK, and has a target of running commercial haulage vehicles to entirely on LBM. A further partnership with Lotus Engineering has resulted in a sports car that runs on LBM.

Benefits

When utilized as vehicle fuel the following benefits are available:

- **Reduction in Particulate (PM10)**

- **Reduction in Oxides of Nitrogen (NOx)**
- **Reduction in Oxides of Sulphur (Sox)**
- **Reduction in engine noise**
- **Reclassify waste as a valuable fuel source**
- **70% CO₂ reduction as a fuel substitute for fossil diesel or petrol**
- **Utilize the increasing volume of waste created by the First World**
- **Address the niche markets associated with the waste industry and transport infrastructure**
- **Process will produce viable fuel source at \$40 a barrel equated**
- **Security of supply**

Further information

Gasrec website

<http://gasrec.co.uk/>

Lotus cars website

<http://www.lotuscars.com/>

Linde website

<http://www.linde.com/en/index.html>

SITA website

<http://www.sita.co.uk/>

Hardstaff Group website

<http://www.hardstaffgroup.co.uk/>