

MEDIA RELEASE
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Decarbonising Road Transport and Heat

The Bio-SNG and Gas Grid Option

NEPIC (North East Process Industry Cluster) has published on its website the Feasibility Study that NEPIC, National Grid and Centrica commissioned to review the use of Bio-SNG (Synthetic Natural Gas) delivered via the gas grid as a way to decarbonise road transport and heat.

The conclusions of the Feasibility Study are that:

- Bio-SNG offers the possibility of substantial scale renewable methane production
- The major processes required to produce Bio-SNG can be identified and assembled using existing technologies
- The estimated costs of Bio-SNG for a large-scale plant are very competitive with other renewable energy technologies
- Lifecycle CO₂ savings of Bio-SNG compared with fossil fuel alternatives are typically 90% and are similar to those using direct biomass combustion, but with a far more flexible delivery mechanism (the existing gas grid)
- Bio-SNG is significantly more cost-effective per tonne of CO₂ abated than heat pumps or domestic and commercial biomass heating, and more cost-effective than electrical solutions for transport applications

Bio-SNG is formed during the conversion of thermally derived synthetic gas into methane. Unlike biomethane produced by anaerobic digestion, feedstocks can include more durable material such as woody biomass and wastes that are not broken down in traditional anaerobic digester plants. Although anaerobic digestion of organic material has been widely accepted as an important renewable energy technology, the production of Bio-SNG is required to move to higher levels of fossil fuel replacement.

Whilst the study was considering the use of Bio-SNG as a vehicle fuel, it showed that an attractive option may be to use Bio-SNG for domestic heating. Bio-SNG is a particularly attractive renewable vector as it can be readily utilised in existing applications - CNG (Compressed Natural Gas) vehicles or efficient condensing gas heating appliances. This compares favourably with the use of other renewable vectors, which can impose significant demand-side constraints, which hinder take-up.

For heating, the study shows that the cost per tonne of carbon abated appears to be lower than domestic and commercial biomass boilers and ground source heat pumps. Similarly, for transportation, with the Bio-SNG delivered by the gas grid to customers and then made into CNG for use as a road fuel, the cost per tonne of CO₂ abated appears to be significantly lower than the cost for electric vehicles and is a credible option for trucks where the electric option is not practical.

The key advantages of Bio-SNG are: the ability to convert both woody biomass and wastes into fungible Bio-SNG; the utilisation of the existing gas grid which allows highly efficient transfer of energy from the Bio-SNG plant to the consumer; and finally the use of efficient heating appliances such as condensing boilers.

Along with all unconventional energy infrastructure development there is a need for novel financing strategies, as well as the necessary support regime. In terms of taking forward a UK demonstration project, the Study indicates that Teesside is a highly attractive location because of its chemical industry, ability to utilise waste heat and co-products and extensive high pressure gas grid.

NEPIC, Centrica and National Grid are sharing the details of the study with DECC and the Committee on Climate Change so that the Bio-SNG option can be considered alongside other technologies and the option of a UK demonstration project considered. The results of the study are also highly relevant to the current Defra Review of Waste Policies, as the production of Bio-SNG could help to maximise the contribution that waste management makes to the government's energy goals.

About CNG Services Ltd

CNG Services Ltd ("CSL") supports the development of new anaerobic digester projects including a range of utilisation options for the biogas:

- Use to generate electricity in "good quality" CHP
- Clean-up of biogas to produce biomethane
- Injection of bio-methane into gas distribution networks
- Compression of bio-methane for use as fuel in road vehicles
- Support to introduction of biomethane fuelled vehicles

For further information, please contact:

Jen Clayton

Process Analyst and Support Officer

CNG Services Limited

Tel: +44 (0)121 707 3369

Email: jen.clayton@cngservices.co.uk

Mobile: +44 (0)7969 385548

Website: www.cngservices.co.uk

