clarke energy

Maximise your biogas revenue.

Biogas Upgrading

Engineer - Install - Maintain

Purification of biogas for pipeline injection, compression or transportation.

Clarke Energy supply a comprehensive range of products that cover each stage of the biogas upgrading process. The process uses primarily membrane technology, but other methods such as selective solvent-based washing systems can also be used to meet particular requirements of the application. Biogas upgrading technology can be applied to anaerobic digesters, wastewater treatment facilities and landfill sites.

PROVEN TECHNOLOGY
Latest membrane and selective solvent based biogas upgrading technology.

SUSTAINABLE WASTE MANAGEMENT
Generation of renewable energy from waste materials whilst reducing carbon emissions.

FLEXIBLE BIOGAS OPTIONS
Clarke Energy can supply both biogas upgrading and biogas gas engine technologies.

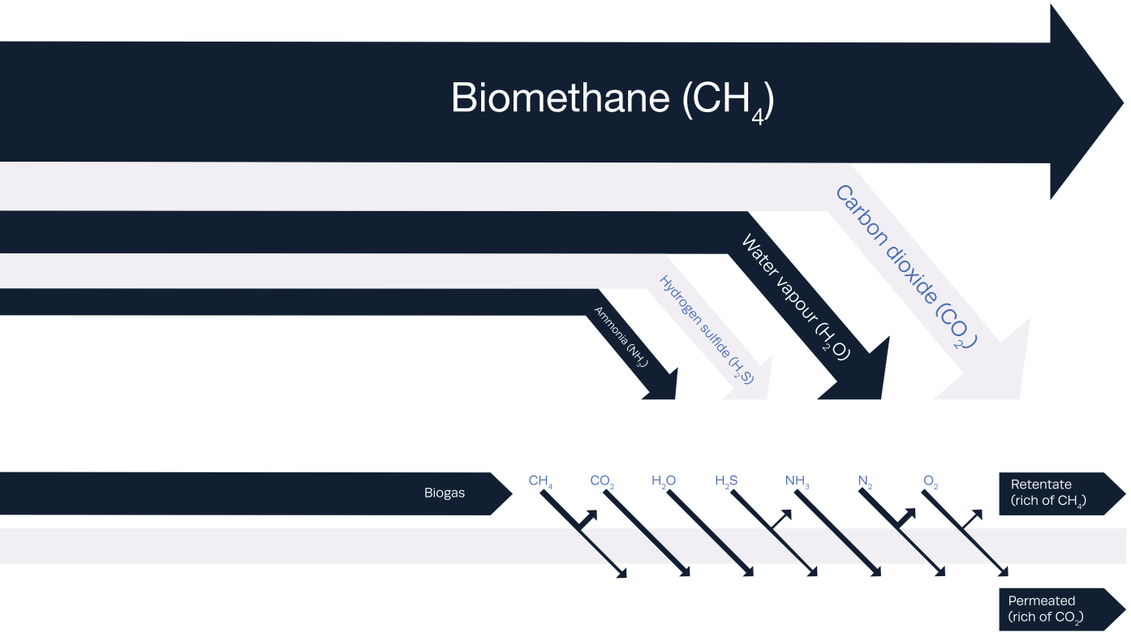
About *biogas upgrading*.

Biogas upgrading is a series of different technologies that are able to strip the carbon dioxide from biogas in order to concentrate the gas to close to 100% methane. At this stage the gas is called ‘biomethane’ or ‘renewable natural gas’ (RNG). The process of upgrading biogas can also be called ‘biomethanisation’.

Biomethane is produced from biogas derived from organic matter such as human waste / sewage, food waste or agricultural materials. As the carbon in this material has been recently taken from the atmosphere and is part of the short-term carbon cycle biogas and biomethane are deemed to be renewable fuels.

Biogas is dried and cleaned to remove impurities and upgraded to pure biomethane. Biomethane is very similar in chemical composition to natural gas and therefore has similar uses. The differentiator for biomethane is it is renewable gas, whereas natural gas is a fossil fuel.

Biogas upgrading technology can be a competitive substitute technology to gas engines on anaerobic digesters and on landfill sites. Biomethane can be used directly in a gas engine but is more commonly injected directly into the gas distribution network or can be compressed and transported by road via a ‘virtual gas pipeline’ to the site of use. In this instance the gas is called ‘compressed biomethane’.



Biomethane/RNG *applications*.

Combined heat and power (CHP)

Biomethane can be used directly into a combined heat and power plant or alternatively via a virtual gas pipeline into a CHP plant. Biomethane can also be used in peaking stations to balance intermittent renewable electricity to provide a fully renewable power supply.

Carbon dioxide recovery

Recovery and cleaning of engine exhausts from the upgrading process is ideal for systems with high CO_2 input gases. This can increase the overall efficiency of the system and produce high grade CO_2 to food and drink standards.

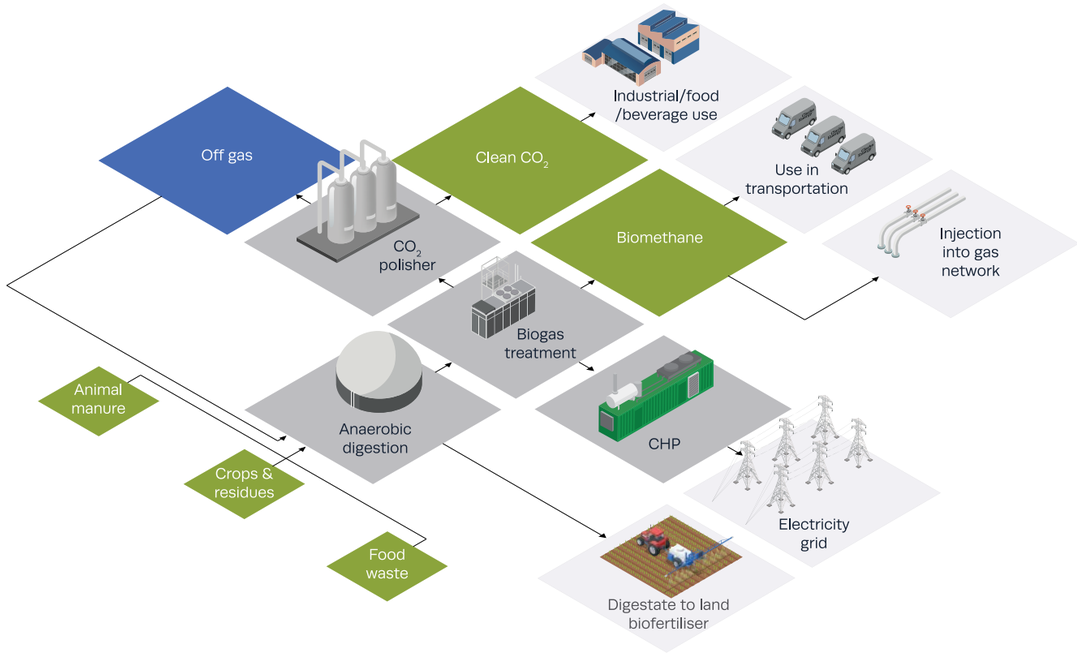
Vehicle fuel/transportation

Numerous vehicles are now able to operate on methane-based gases. Biomethane can be used as a vehicle fuel, either directly at a biogas plant, but more likely there will be some form of transportation of the gas to the site of refuelling. This might be via the gas distribution network, or transported via a virtual gas pipeline.

A virtual gas pipeline is where gaseous methane is moved from the point of origin to the point of use as compressed or liquified gas. The end use could be for vehicle fuel, or to fuel a gas engine based power plant.

Grid injection

There are a number of Government schemes that provide financial incentives for injection of biomethane into local gas distribution networks. As biogas is considered to be a renewable fuel, its injection into the network dilutes fossil derived methane and provides a renewable content to the gas. Whilst volumes of the grid injected biomethane will be low compared to natural gas it is potentially a stepping stone to greater deployment of renewable gas in the grid.



Turnkey biogas solutions.

Clarke Energy has unparalleled international biogas experience on varying applications and process technologies. We offer a combination of biogas upgrading and support.

With Clarke Energy's engineering, procurement, construction capabilities we are able to offer full turnkey biogas upgrading solutions and back this up with long-term maintenance support for our customers.

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For more information, scan the QR code or visit our website at:

clarke-energy.com