



THE BRIGHT UPGRADE OF ALL BIOGAS PLANTS



HIGHLY EFFICIENT MEMBRANE BIOGAS UPGRADING & CO₂ LIQUEFACTION

MODULAR & PROVEN BIOGAS UPGRADERS

RELIABLE



EXPERIENCE



QUICK TO GRID



PROFITABILITY



CO₂ LIQUEFACTION



NO CHEMICALS
NO WASTE / WATER



GAS TREATMENT



Proven membrane technology achieving more than 97% operational availability. The PurePac biogas upgrader is easily integrated with any biogas plant, provides optimal gas cleaning, a robust design, an advanced patented control system and the assurance of 24/7 service support.

Having constructed the world's first commercial plant for upgrading biogas using a 3-stage membrane system, Bright successfully uses this proven design in its systems operating today.

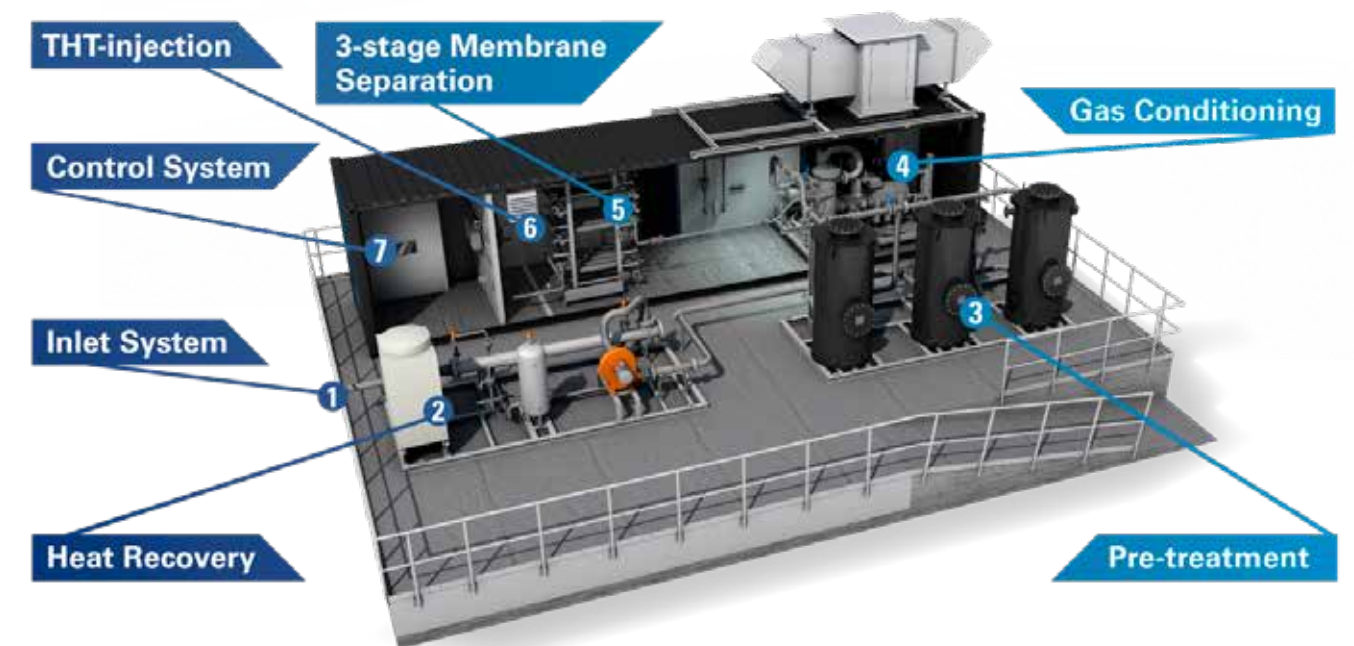
The advanced design and patented control system makes it possible to inject specification compliant biomethane to grid within a few minutes of start-up. Another option is to use the gas as transport fuel (bio-CNG). Other technologies take longer to start up, resulting in methane losses and operational inconvenience. Bright plant operators have the option to stop and start the facility at their convenience with minimal methane loss and no wasted energy consumption.

99.5% methane recovery, more than any other system. The lowest electricity consumption (0.22 kWh/Nm³ biogas). No heat required due to heat recovery (> 0.25 kWt/Nm³ biogas) covering the main energy consumption of the biogas facility. Very competitive price level and low operation costs.

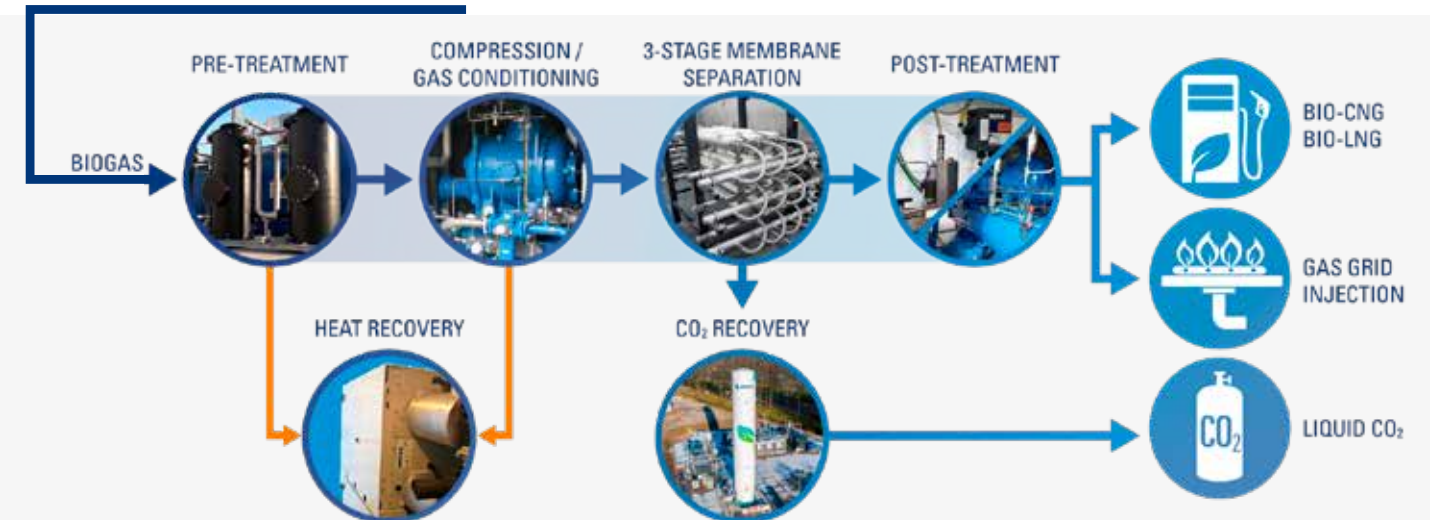
A CO₂ liquefaction system, with very low energy consumption, can be integrated with the 3- and 2-stage membrane upgraders to produce food-grade carbon dioxide (CO₂). A high-quality raw material of 99.9% purity that provides an extra source of revenue for the plant owner. The CO₂ liquefaction step reduces the methane slip to zero (99.99% recovery rate) as any remaining CH₄ returns to the upgrader.

No water or chemicals are needed in the Bright process which means that there are no disposal problems, such as acid water or chemicals that can be an unforeseen cost with other technologies.

Bright is experienced in managing biogas produced from any form of feedstock, including municipal sludges and wastes. Based on this experience, reliable biogas pre-treatment solutions can be offered to ensure the correct biogas specification is achieved before upgrading.



THE BRIGHT PROCESS



OUR TECHNOLOGY

Bright applies high-quality membrane technology that achieves more than 97% operational availability, highest separation efficiency and the lowest methane-slip. After the pre-treatment, compression and gas conditioning, the gas is separated in the 3-stage membrane unit by means of an imposed pressure difference over the membrane. Two gas streams are obtained: a product gas with a high methane value, and a CO₂-rich gas. As a result of highly selective membranes and the recuperation of methane, the highest possible methane yield is achieved. Depending on the application, the gas is upgraded to the preferred methane value.

FLEXIBLE APPLICATIONS

The methane-rich product gas can be used for different purposes. Any desired gas quality and calorific value is possible and can be fed into both the low- and high-pressure natural gas grid. Application as transportation fuel (bio-CNG/-bio-LNG) is another option. Virtual pipeline technology is extremely suitable for biomethane production at a remote site with no gas grid injection point. The produced gas is then transported to a nearby injection point. In all applications the patented 3-stage separation process ensures that the gas meets the requirements for the specific application. The residual heat and the CO₂ can also be utilised.

A BRIGHT IDEA FOR THE PERFECT BIOGAS UPGRADING SOLUTION.

BRIGHT SOLUTIONS

Bright is a global industry-leader of biogas upgrading systems. Our **premium and proven PurePac systems** offer a complete biogas upgrading solution starting at 100 Nm³/hr biogas flow capacity.

Easily integrated with all types of new and existing biogas plants in any industry, and suitable for landfill gas and biogas produced from any form of waste, including municipal sludges.

Bright's product and technology portfolio includes standardised containerised biogas upgraders, CO₂ liquefaction technology, virtual pipeline, service support and predictive maintenance, and bio-CNG and bio-LNG applications in addition to biomethane. Outside of its headquarters in the Netherlands, Bright has worldwide offices, local agents and partners, and realised projects in over 20 countries across four continents. For our systems supplied, Bright has 24/7 local maintenance teams in several countries.

PurePac Grand with CO₂ liquefaction system



1,200 Nm³/hr biomethane from food waste, sludge

WAALWIJK, NETHERLANDS

At this anaerobic digestion facility, our large-scale upgrader produces 10 million Nm³ of biomethane per year from 30 different waste streams. The CO₂ liquefaction system produces food-grade CO₂ for industry sales.

PurePac Medium with virtual pipeline



450 Nm³/hr biomethane from manure

WARSAW (NY), USA

The produced renewable natural gas at this remote farm, without gas grid injection point, is compressed and delivered to a nearby gas grid injection point (bio-CNG/bio-LNG filling station) using Bright's virtual pipeline technology.

PurePac Compact with grid injection



250 Nm³/hr biomethane from municipal sludge

SLEEUWIJK, NETHERLANDS

From feces and sewage sludge waste to biomethane-to-grid. This wastewater treatment plant with a compact build biogas upgrader produces enough biomethane for the gas needs of 1,500 households.

PurePac Mini with bio-CNG filling station



35 Nm³/hr biomethane from manure

HOUFFALIZE, BELGIUM

This small-scale biogas to bio-CNG upgrader with directly connected filling station, produces bio-CNG for the farm's own fleet, allowing the company to become fuel self-sufficient and independent of fluctuations in fuel prices.

CONTACT

Thermen 10
7521PS Enschede
The Netherlands

+31 (0)53-460 90 88
info@bright-renewables.com
www.bright-renewables.com

FOLLOW US



Visit our website for more information and follow us on social media to stay updated.