



CO2 liquefaction for a negative carbon footprint

Traditional biogas upgrading plants have been based on “catch and release” of the carbon dioxide. Biogas is a circular, zero carbon footprint fuel solution but the climate crisis calls for carbon negative solutions.

Gas Solutions’ Puregas BC product purifies and liquefies the carbon dioxide captured from biogas upgrading plants, resulting in a carbon negative process.

The captured carbon dioxide is purified to food and beverage grade, and/or storage grade creating an additional revenue stream for the plant owner.

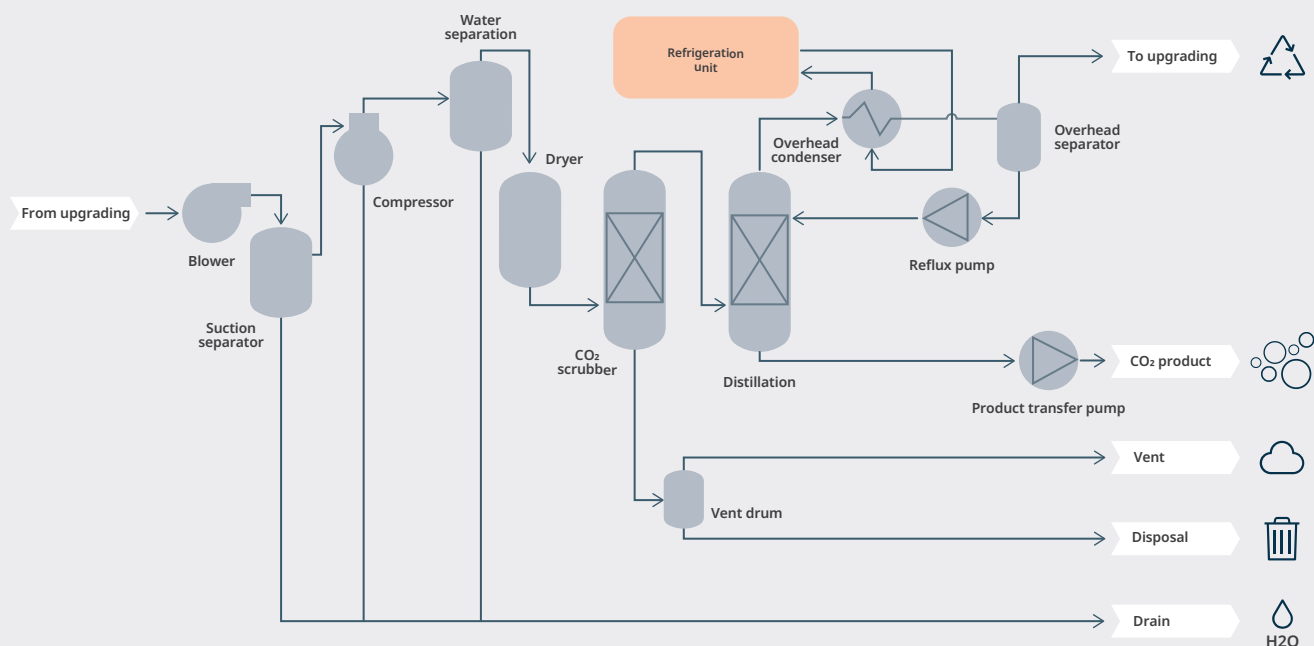
The Puregas BC process is based on combining the best available technologies for purifying and liquefying carbon dioxide resulting in a robust and energy efficient process.

The Puregas BC process uses CO₂, a natural and environmentally friendly refrigerant. The process is built using standard components. The minimal methane slip

from Puregas CA (< 0.1%) can be routed back to the biogas upgrading achieving zero methane slip.

The process modules are containerised resulting in a compact footprint and minimum disturbance at site. No additional buildings are required. Gas Solutions can provide additional options such as storage tanks, liquid CO₂ export stations and analysis stations to verify CO₂ quality.

Gas Solutions Puregas BC carbon dioxide liquefaction plants are designed for full integration with Puregas CA biogas upgrading plants, whilst also being suitable for retrofit and/or integration with other biogas upgrading processes.



Why Puregas BC for carbon dioxide purification and liquefaction

- High quality CO₂ product from all types of raw gas
- Additional revenue stream from already captured CO₂
- Containerized plant with no buildings needed
- Energy efficient with zero methane slip
- Unmanned operation

Puregas BC range and key characteristics

Size	Capacity (tons per day)	Typical tank configuration (m ³)
BC 50	27	2 x 45
BC 70	55	4 x 45
BC 80	110	3 x 60

Inlet gas: Saturated CO₂ from biogas upgrading (Puregas CA)

Gas purity liquid CO₂: > 99.9%, e.g. food grade EIGA doc 70/17

Liquid CO₂: -28°C at 15 barg

Ambient climate: -30°C to +35°C

Operational window: 50-100%

Plant layout: Containerized (20 and 40 ft)

About Wärtsilä

Wärtsilä Gas Solutions, is a market leader with innovative systems and lifecycle solutions for the gas value chain. One of our main focus areas are the biogas solutions, beside our already strong presence in handling of gas in the maritime industry (storage, fuel, transfer and BOG management), gas to power and liquefaction. Our biogas business has facilities and personnel in Denmark, Sweden, Norway, Finland, Germany, UK and USA. We help our customers on their journey towards a sustainable future through a focus on lifecycle performance, innovation and digitalisation.



Wärtsilä Biogas solutions