Gas Solutions
A Wärtsilä Business

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

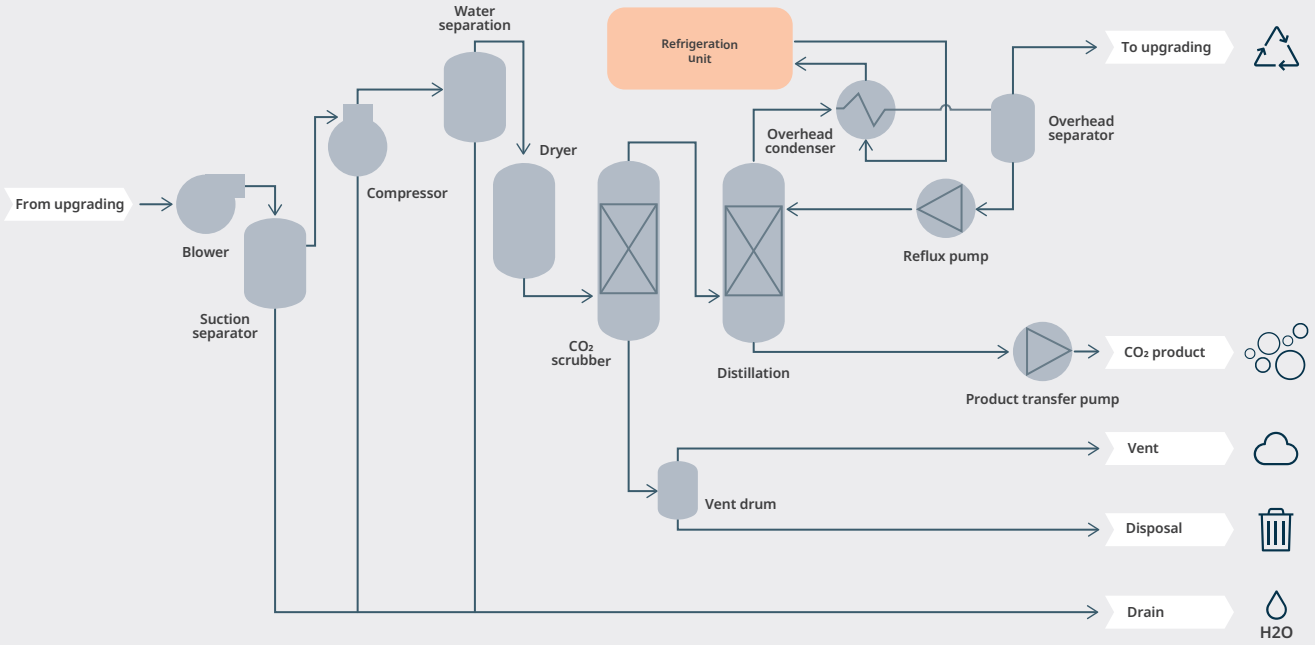
The captured carbon dioxide is purified to food and beverage grade, and/or storage grade creating an additional revenue stream for the plant owner.

The 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 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 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 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

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