BIOGAS UPGRADING SOLUTIONS

PENTAIR® CO_2BOLT-ON

CO_2 Recovery Technology

TURN WASTE INTO VALUE

Capture and recover waste stream by-product CO_2 from the biogas upgrading process with Pentair CO_2Bolt-On.
Biogas upgrading vents a highly concentrated flow of CO_2 as a waste stream. Capture this waste by-product and turn it into an economic value stream. Benefit from the flexibility of Pentair CO_2Bolt-On as it is compatible as an optional add-on to both Pentair and non-Pentair Biogas Upgrading Systems.[1]

Pentair CO_2Bolt-On is available as an additional CO_2 recovery system to Pentair BioCompact, Pentair BioBasic, and Pentair BioPlus biogas upgrading systems.

HOW IT WORKS

The exhaust CO_2 from the biogas upgrading unit is fed into the Pentair CO_2Bolt-On system, where the CO_2 compressor units increase the gas pressure to 18 barg (261 psig) in two stages removing condensate in the process.

Next, trace impurities and moisture are removed. The purified CO_2 gas is led into the cooling system, where the CO_2 is liquefied.
The off-gas containing all non-condensable gases (CH_4, O_2, N_2) is purged as an off-gas and can be brought back into the inlet of the upgrading unit.

The purified liquid CO_2 product is fed at 17.5 barg (218 psig) to the onsite storage tank.

BENEFITS

Capitalize on waste
- Create food-grade quality CO_2.
- Turn CO_2 waste stream into commercial opportunity.

Efficient technology
- Recover CO_2 with energy & cost-efficient cryogenic-based technology.
- Modular-based approach for ease of installation.
- Heat recovery capability with no external heat required.

Support
- Service support lifetime of the system.

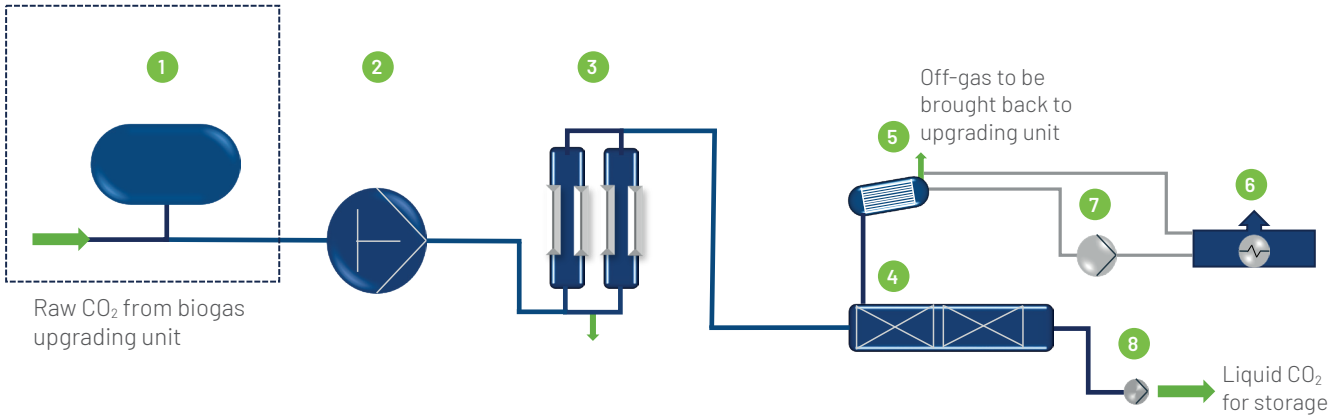
[1] It is possible to connect a Pentair CO_2Bolt-On to a non-Pentair Biogas Upgrading System when the composition of the system is compatible. To be reviewed on a case-by-case basis.

PENTAIR CO_2BOLT-ON

CO_2 RECOVERY SYSTEM

SCOPE OF SUPPLY

1. Gas balloon (optional)
2. CO_2 compressor
3. Activated carbon filter & drier
4. Stripper-reboiler
5. Refrigerant cooled CO_2 condenser
6. Refrigerant (dry) condenser
7. Refrigerant compressor
8. Liquid CO_2 pump
>. Main parts skid mounted and controlled by MCC



MEASUREMENT UNIT	INLET GAS CO_2 CAPACITY	TYPICAL INLET GAS CONSUMPTION	FOOTPRINT (LXWXH)	POWER CONSUMPTION	TYPICAL OFF-GAS OUTLET CONDITIONS	LIQUID CO_2 TO STORAGE TANK
Metric	250 – 1800 Nm^3/h	>99% CO_2, 0,9% CH_4, 0,1% N_2/ O_2	12,8 x 10 x 2,8 m	~ 110 Wh/ Nm^3 ~ 220 Wh/kg	30% CH_4, 3% N_2/O_2, 67% CO_2	CO_2 >99,997% EIGA 2018
Imperial	155 – 2237 SCFM 1102 – 7937 lbs	>95% CO_2, 3,6% CH_4, 0,4% N_2/O_2	42 x 32,8 x 9,2 ft		45% CH_4, 5% N_2/O_2, 50% CO_2	

ABOUT PENTAIR

Pentair designs, builds, installs, and services end-to-end membrane-based Biogas Upgrading Solutions that produce biomethane and cryogenic and amine-based CO_2 Capture and Recovery Systems.

Let's work together to explore your biogas upgrading potential.

Visit biogas.pentair.com to find out more.

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