

Technical Information

Polishing

The polishing unit purifies biomethane to meet strict liquefaction standards—below 50 ppmv CO₂ and 1 ppmv H₂O. It uses three fixed-bed adsorption columns filled with selective synthetic zeolites (13X and 3A). Operated in a staggered cycle (adsorption, regeneration, standby), this setup ensures continuous polishing and prevents off-spec gas breakthrough.

Cryogenic chiller

The cryogenic chiller cools the inlet gas using a **reverse Brayton cycle with self-generated nitrogen** as the refrigerant in a closed loop. This process—compressing, cooling, and expanding the nitrogen—lowers its temperature below the inlet gas liquefaction point. This enables the **production of bio-LNG** at the required commercial quality for **transport, bunkering, and power generation**. The unit is designed to automatically compensate any nitrogen small leaks.

Features



- **Compact & modular design** – skid/container (40-45 ft) with a flexible design to adapt to the user's available space, easy to transport, install and relocate.
- **Reliable** – separating the cooling media (nitrogen) and inlet feed gas ensures the maximum reliability by avoiding any contamination, corrosion and wear.
- **Efficient** – moderate energy consumption for liquefaction, with operating costs mainly due to power consumption.
- **Flexible** – possible to turndown the production of LNG to 40% of the maximum capacity and at desired LNG commercial specs (pressure and temperature).
- **Safe** – operational with self-generated nitrogen cooling media to avoid explosion or jet fire dangers with a zero GWP (Global Warming Potential).
- **Complete** – containers come complete with insulation, lighting, air conditioning, doors and ventilation to facilitate operating activities.
- **Unmanned** – a remote control of process variables is provided, including web-based access and proper database storage, allowing remote parameters control and proper maintenance scheduling. Plant data, including alarms, are available via OPC from the operator interface system (HMI).