

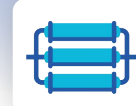
State-of-the art packaged membrane systems for biogas upgrading



System design and performance tested and improved at Air Liquide's own RNG plants



Flexible system offers customizable features, including, but not limited to, feed and product compression



Patented membrane-based solutions for biogas with H_2S and high N_2 removal



Rapid response field services team for system start-up, repair, and maintenance



Performance guarantees for both methane recovery and product purity



Air Liquide's long-term commitment to enabling decarbonization for its customers

Air Liquide membrane technology

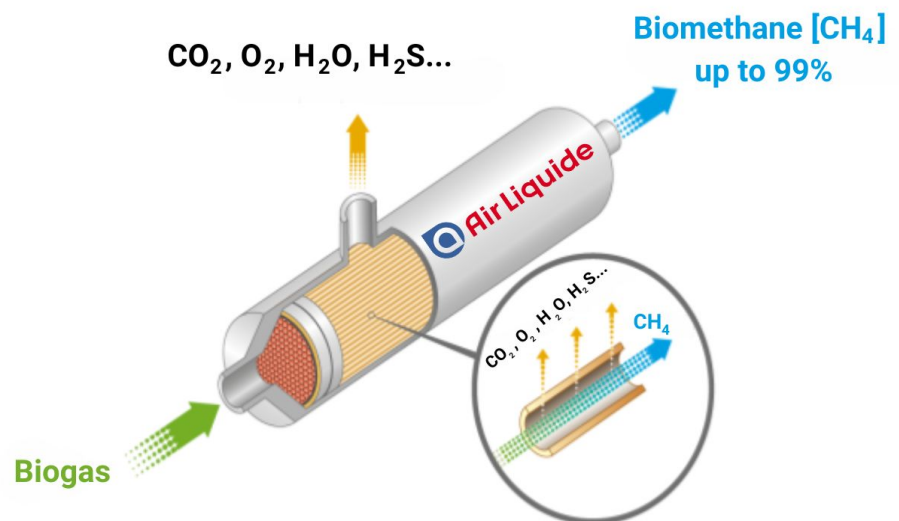


Air Liquide's biogas purification systems separate methane and carbon dioxide via an innovative process that uses polymeric hollow fiber **membranes made by Air Liquide in the U.S.A.** Our complete upgrading systems are **designed by Air Liquide** and **field tested at Air Liquide's own RNG plants.**

35+ years of experience in gas separation membranes

17+ years of experience in biogas upgrading

160+ biogas purification units designed and installed worldwide



Complete range of plug-and-play solutions tailored to your needs



Air Liquide biogas upgrading systems are efficient, flexible, and easy to operate, combining Air Liquide's American-made gas separation membranes with proprietary system design. **Our experienced team** of technical experts and project developers will be your **single point of contact** to find the **best fit for your biogas project**.

- Treats raw biogas flows ranging from 50 to 10,000+ standard cubic feet a minute (SCFM).
- Handles feed gas from a variety of biogas sources such as landfills, agricultural digesters, wastewater treatment plants, and food waste digesters.
- Generates RNG with methane content between 96.5% and 99%, depending on its purpose.
- Includes designs ranging from 95% to 99.5% methane recovery.

Standard Skid Design Offerings (SCFM)
200 - 800 (digester)
800 - 1,500 (digester)
1,500 - 3,500 (digester or landfill)
3,500 - 5,500 (landfill)
5,500 - 8,000 (landfill)
8,000 - 10,000 (landfill)

Patented technologies



Our solutions portfolio ranges from optional packages to complete systems, including:

H₂S RemovAL

H₂S RemovAL is a complete system designed to remove high concentrations of H₂S in biogas produced by digesters, along with our core MEDAL™ membrane technology for CO₂ removal. This cost-effective H₂S removal method relies on Air Liquide's highly selective PEEK-SEP™ membranes, which can handle up to 7,000 ppm in a raw feed with up to 98% methane recovery and 99% methane purity in product gas.

Nitrogen RemovAL

Along with high methane recovery rates, Air Liquide's optional N_s RemovAL system is designed for landfill biogas, offering robust performance and simple operation for a difficult separation.

Cartridges containing Air Liquide's PEEK-SEP™ hollow fiber membrane technology are skid-mounted in an arrangement that maximizes shop fabrication and results in a compact, cost-minimized solution.



Services related to our biogas solutions



The range of services Air Liquide offers can be tailored to the needs of each customer:



- Training in routine operations and maintenance, plus special sessions on safety in addition to basic training to raise staff awareness.
- Inspection and adjustment of settings of the purification unit in order to optimize the production of biomethane while reducing your operating costs.
- Preventive maintenance that includes the replacement of worn out parts and related labor.
- Back-up spare parts can be made available to you directly onsite.
- Technical assistance year-round 24/7 via a hotline and service within 4 hours where required.



Performance guarantees

- **Guaranteed quality for injection into the network**
- **Methane recovery rate > 98% (up to 99.5% with additional solution package)**
- **Simple and reliable system (run time >98%)**
- **Economical and highly efficient**



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Air Liquide's long-term commitment to RNG

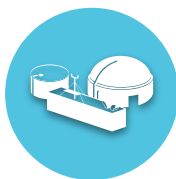


Taking action today while preparing for a sustainable future is at the heart of Air Liquide's strategy. Our commitment to facilitating the expansion of RNG around the world spans well over a decade. Using in-house resources and expertise across the engineering, biogas upgrading, and distribution value chain, Air Liquide's extensive experience enables us to handle every aspect of the production process.



Air Liquide RNG Plants in U.S.A.

6 plants in production
2 under construction



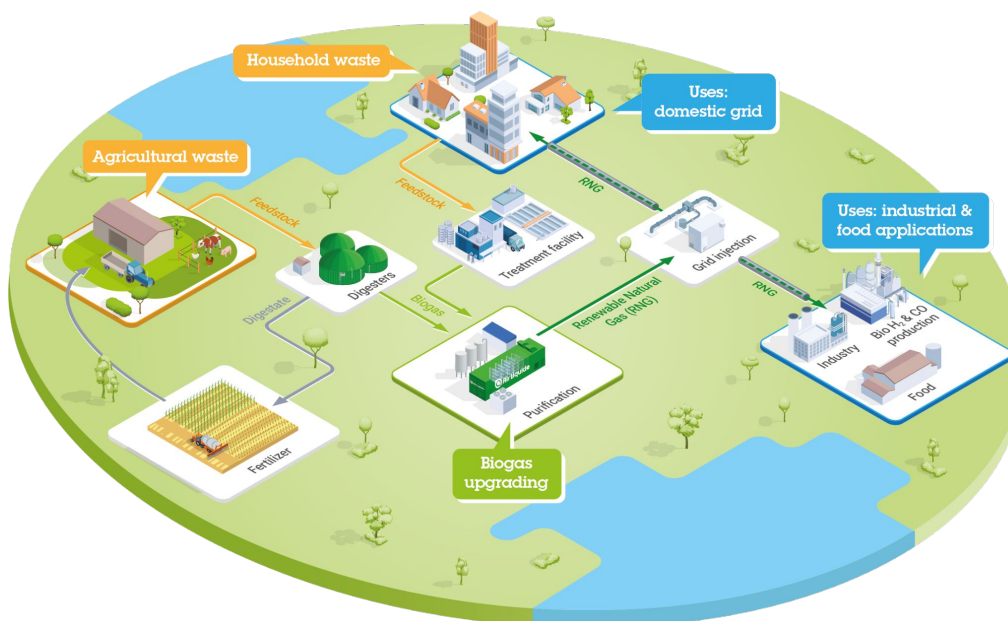
Air Liquide RNG Plants Worldwide

26 plants in production



Air Liquide RNG Production

1.8 terawatt-hour capacity per year



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