

Turbo-Brayton

for small scale methane liquefaction

The Air Liquide Turbo-Brayton cooling system is an optimal solution for biomethane liquefaction. Combining safety, performance, reliability and compactness, it can be used for liquefying biogas, natural gas or flare gas as well.

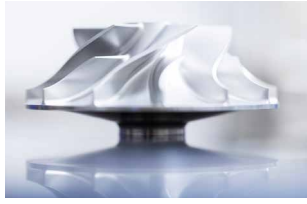


Key benefits of the Turbo-Brayton liquefaction system

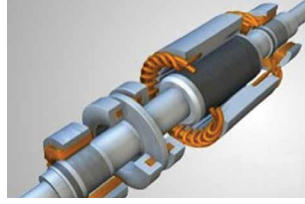
- Integrated solution with feed gas pretreatment
- No feed gas losses
- **Low installation cost and time:** plug and play, compact (low footprint and weight)
- **Maintenance-free** for 5 years
- **Unmanned operation**, fully automatic
- **Cold power available instantaneously** (less than 5 min) from stand-by mode
- **Multi-sources liquefaction:** biogas, natural gas, flare gas, ethylene, boil-off gases
- Flash and boil-off are avoided thanks to methane **subcooling**
- Utility-free: no compressor, no oil, no nitrogen
- Safe technology: inert process gas, no top-up of process gas required
- Low electrical consumption and high efficiency on all operating range from 0 to 100% turn down

Reverse Turbo-Brayton principle

Turbo-Brayton is an innovative and patented solution.



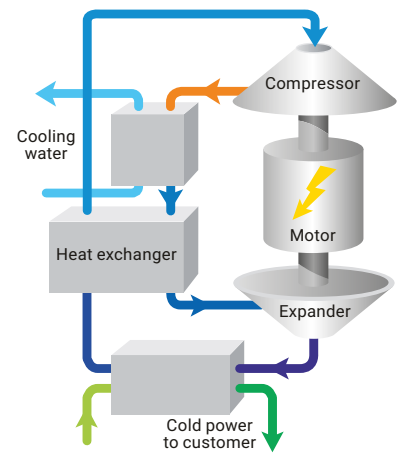
Compressor



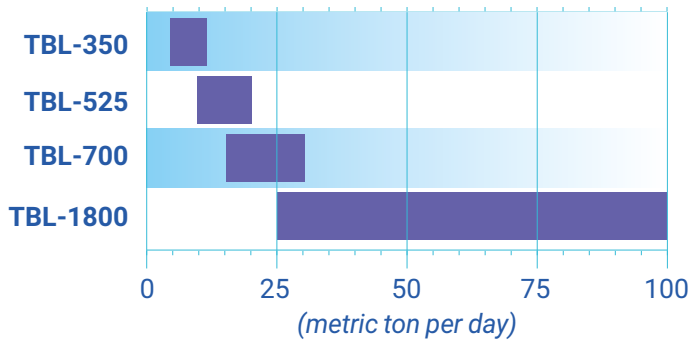
Motor on magnetic bearing
(oil-free, contact-free & high reliability)



Expander



Onshore Turbo-Brayton liquefaction range



Main applications

Air Liquide Turbo-Brayton is used on the following onshore and offshore applications:

- Bio-LNG liquefaction
- Natural gas liquefaction and virtual pipeline
- Ethylene subcooling
- LNG boil-off gas management
- High-temperature superconductivity



Turbo-Brayton TBL-350



Turbo-Brayton TBL-525

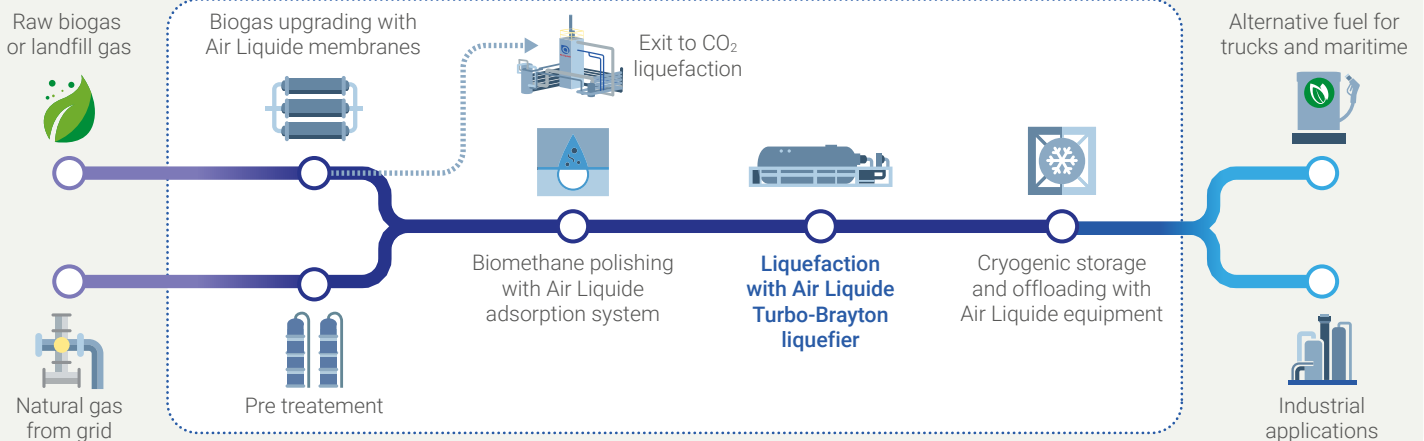


Turbo-Brayton TBL-700



Turbo-Brayton TBL-1800

An integrated solution



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