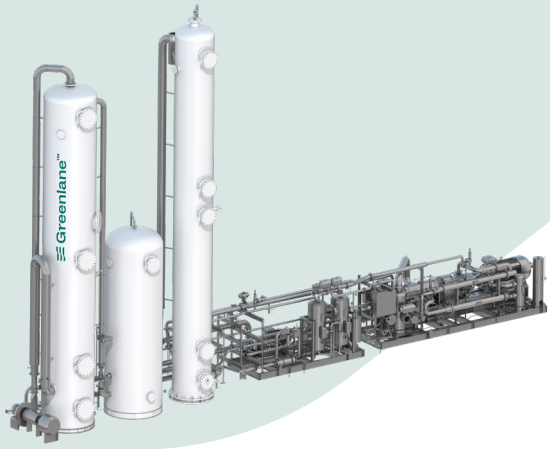
Greenlane™

Cascade H_2O

Water Wash



Upgrading of biogas from all types of feedstocks, with high tolerance to impurities.

Every feedstock type creates its own unique type of biogas. Biogas produced from municipal waste water is different from that produced at sugar mills, which is different again from that produced on farms or from food waste. Cascade H_2O is ideal for upgrading biogas from feedstocks requiring high tolerance to impurities.

Cascade H_2O installation

Cascade H_2O important benefits

- **Removes CO_2 and impurities in a single step:** Cascade H_2O removes CO_2, H_2S, and water soluble VOCs and siloxanes in a single step without the need for pretreatment. For projects with high H_2S levels, pairing with our Cascade H_2S product results in low capital and operating costs.
- **The most robust upgrading technology:** In the event pre-treatment is used for higher levels of impurities and breakthrough occurs, Cascade H_2O will not be permanently damaged by high levels of impurities, such as hydrogen sulfide, volatile organic compounds, siloxanes, and oil.

Types of Feedstock:

Food Waste, Green Waste, Wastewater, Ethanol-By-Products, Agricultural Waste, Landfills, Sugar Mills

Cascade H_2O model range

Model	Max Flow (Nm^3/h)*	Max Flow (scfm)*
Totara+	2500	1550
Kauri	5000	3100

**Minimum flow is 40% of max flow*

ⓘ Other sizes available on request.

Typical gas processing capability for RNG

Parameter	Raw Gas Quality	Product Gas Quality	Cascade H_2O
Methane (CH_4)	45-60 %	Meets Pipeline Quality Require-ments	Up to 99% methane recovery
Carbon Dioxide (CO_2)	35-45 %		
Nitrogen (N_2)	0~1 %		
Oxygen (O_2)	0~0.1 %		
Hydrogen Sulfide (H_2S)	up to 2,500 ppmv*		

**Contact us for higher H_2S level*

Why water wash technology for biogas upgrading?

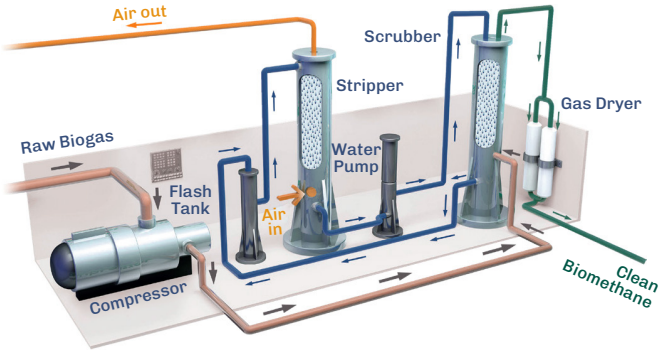
Water wash technology is among the most deployed biogas upgrading technology in the world. Water wash systems use counter-flow water to scrub away biogas impurities, without the need for chemicals or heat.

Greenlane Cascade H_2O biogas upgrading products:

- remove hydrogen sulfide, volatile organic compounds, and siloxanes to meet pipeline specifications, without the need for pretreatment
- operate in a closed loop to limit energy consumption
- provide high methane recovery with high uptime
- have no expensive overhaul of the upgrading media – it's only water
- are robust – will not be damaged by impurities
- are highly efficient at carbon dioxide removal, especially when impurities also need to be removed

How Cascade H_2O Works

1. Biogas is compressed before flowing up through a water scrubbing tower
2. Carbon dioxide, hydrogen sulfide, siloxanes, and volatile organic compound molecules are absorbed by the water while the methane passes through
3. Product gas is dried before end use
4. Water is recycled in a closed loop which absorbs the carbon dioxide and contaminants from the biogas then desorbs in the air exhaust stream



The Greenlane Advantage

Solving the industry's most challenging problems for over 35 years with more than 500 systems sold into 32 countries.

- 24/7/365 expert technical support
- Remote monitoring and management
- Priority spare parts incl. warehousing/logistics
- Proprietary software and equipment upgrades
- Commissioning, training & performance optimization
- Service contract options

Contact us:

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