



Plant: KSL Green Innovation PCL Thailand. Capacity 5,000 M3/h (2,941 scfm) biogas 15,000 ppm H<sub>2</sub>S

Our Moving Bed Reactor (MBR) technology is ideal for large biogas flows with high H<sub>2</sub>S loads (15,000-30,000 ppm) combined with low calorific values (50-55% CH<sub>4</sub>), as typically produced by wastewater from molasses or cane juice at ethanol distilleries.

Our patented technology benefits from the following features:

- **The Process Technique Unit (PTU):** Installed in a skid-mounted unit, it contains the equipment necessary for safe, automatic operations. It includes gas blowers, a gas pre-cooling system, an air blower system and a liquid supply system. The PLC-based control system as well as the frequency converters are installed in an air-conditioned control room.
- **Moving Bed Reactor (MBR) tanks:** Comprise one or more insulated tanks made of high-quality fiber glass. Depending on the H<sub>2</sub>S volume, we provide either prefabricated or field erected tanks.
- **MBR packing media:** After injecting air or oxygen, the raw biogas is bubbled through the liquid containing the high-surface MBR media. The packing media is floating in the scrubber liquid and no special cleaning is required.
- **Foam control:** The foam produced by bubbling the gas through the liquid is controlled by injecting small amounts of palm oil controlled by automatic process parameters monitored by the PLC.

## Choosing between MBR (Moving Bed Reactor) and BTR (Bio Trickling Reactor):

If the raw biogas flow is below 1,000 Nm<sup>3</sup>/h, BTR will be the most cost effective solution. For larger flow amounts, MBR technology will be a more suitable option.

	BTR (Bio Trickling Reactor)	MBR (Moving Bed Reactor)
Main process	H <sub>2</sub> S (gas) + 2 O <sub>2</sub> (gas) => H <sub>2</sub> SO <sub>4</sub> (liquid)	H <sub>2</sub> S (gas) + 1/2 O <sub>2</sub> (gas) => S (solid) + H <sub>2</sub> O (liquid)
Media type	Fixed bed	Moving bed
Tank volume	100%	25-30%
Service per tank	6-9 day/year	1-2 day/year
Initial start-up	48-72 hours	0.5-2 hours
O <sub>2</sub> consumption	100%	25%
O <sub>2</sub> after scrubber	1.5-2%	0.5% in Asia and 3% in Brazil
CH <sub>4</sub> dilution	12-21%	0.5% in Asia and 14-16% in Brazil *
pH of effluent	1-3 (Org. liquid pH7)	7 (org. liquid pH7)
Sulphur recovery	Not possible	By means by sedimentation, cyclones or centrifuges
Gas pressure of outlet	Typically 10-30 mbar	Up to 150 mbar (no further compression needed)



Plant: Power Solution Technologies (PSTC) Thailand.  
Capacity: 3,000 m<sup>3</sup>/h (1,765 scfm) biogas 15,000 ppm H<sub>2</sub>S

**We're Biogasclean - the specialists in biological desulphurisation and methanation of biogas and CO<sub>2</sub>.**

We're part of the Cycle0 Group, a leading developer that owns and operates biogas plants in Europe and beyond.

At Biogasclean, we develop, manufacture and supply fully automated gas treatment systems that combine low operating costs and high availability.

Our technology is trusted by 350+ plants in operation or under construction in 40+ countries.

\*If pure oxygen is used instead of air, the CH<sub>4</sub> dilution will only be between 1-2%

Get in touch today for expert advice on your desulphurisation solutions

DENMARK  
Biogasclean A/S  
Ørbækvej 268  
DK-5220 Odense SØ  
[www.biogasclean.com](http://www.biogasclean.com)

+45 6617 2177  
[sales-dk@biogasclean.com](mailto:sales-dk@biogasclean.com)

THAILAND  
Biogasclean (Thailand) Ltd.  
331 Moo 2, Unit S1/2  
Soi Thetsaban Bangpoo 54  
Sukhumvit Rd, T. Taiban, A.  
Muang Samutprakarn 10270

+66 (0)2 395-1157  
[office@biogasclean.com](mailto:office@biogasclean.com)

USA  
Biogasclean Americas Inc. 2800  
Post Oak Blvd. Suite 1910  
77056 Houston, Texas

[sales-us@biogasclean.com](mailto:sales-us@biogasclean.com)

BRAZIL  
Biogasclean Brasil Ltda.  
Av. Norte-Sul 575, Cambuí  
Campinas, Sao Paulo  
CEP 13025-320

+55 19 9 9112 0266  
[jorge.vsn@biogasclean.com](mailto:jorge.vsn@biogasclean.com)