

Landfill gas systems

LGS



Advantages and philosophy with Biogas Systems landfill gas systems

A landfill gas extraction system is working in a demanding and exposed environment. Since building a landfill gas system is based on environmental improvement and possible use of electricity and heat, high standards of performance and availability is of essence. This and the fact that a large part of the system is buried in the landfill and virtually impossible to inspect, makes the work and philosophy around the design and construction very important. Biogas Systems Nordic AB manufactures plants based on more than 30 years of experience and take total responsibility from design to utilization of gas throughout the plant life cycle. Below are some explanations to why our systems have a long life, high availability and therefore a low total cost of operation.

Gas wells

Our patented simple, robust and cost-effective gas well design means rapid establishment into the landfill using a standard excavator. This results in more gas wells and more efficient gas collection at lower cost compared to other types of gas well designs.

Suction pipes

Due to continuous movements in the landfill and the fact that landfill gas is 100% humid, the suction pipe system will sooner or later form low points with water traps and blockage of gas distribution as a result.

Biogas Systems' philosophy is to use higher gas velocity and higher vacuum. This enables the system to bring precipitated condensate to the condensate traps in order to keep up gas production. Our solution also includes the possibility to "back-flush" to clear the water blocked suction pipe, which is not possible in a system with larger pipe diameters. This means that the gas collection system can be maintained to keep the gas flow to a maximum.

Back-flush system (Option 13)

As precipitated condensate always is present in a gas collection system, it is important to be able to maintain it in order to avoid gas flow interruption. Using the Back-flush system the operator can keep the suction pipes free of the precipitated water which is continuously formed, and thus maintain the most important part of a landfill gas system and thus maintain the highest yield.

Water trap well (Option 14)

As higher gas velocity to bring water out of the system is part of our philosophy requires higher demands on water separation. This is done in the Water trap well which has been designed and is manufactured in house. Furthermore, our Water trap wells are individually adapted for each system to obtain optimal suction pressure.

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PLC-controlled

With our own electrical workshop and own electricians/programmers, Biogas Systems can customize control systems for the current application, for example, the optimum adjustment of the gas flow from each individual gas well, optimization of gas engine operation, gas turbine operation or gas boiler operation. Because we develop and program control system in our own workshop, we have good control over quality and function. We can monitor our facilities from any computer and we are thereby maintaining high availability with a minimum of human intervention. Through this we can quickly adapt the system to changing operating conditions.

Automatic gas analysis (Option 01a)

With this option, the system automatically performs analysis of methane (CH₄) and oxygen (O₂). The data is then used by the operator as a basis for adjusting each gas well to optimize gas flow. Manual gas analysis is very time consuming and this option has therefore become more or less standard in our plants today. Analysis of several gases can also be offered.

Automatic adjustment of gas wells (Option 05)

With the option "Automatic gas analysis", the system records the current values in each gas well and then automatically adjusts the flow of gas from each gas well making the landfill gas plant fully automatic in terms of optimization of the gas outlet. This is perhaps especially valuable when you have revenues from the gas i. e. electricity and/or heat production.

Gas drying (Option 10)

If the gas needs to be distributed through a pipeline, the gas system needs to dry the gas because the water might otherwise precipitate in the distribution line which might cause disruption in gas flow. This is eliminated by lowering the dew point and thus reduce maintenance/operating costs.

Utilization of the gas

Biogas Systems AB supplies gas engines, gas turbines and boilers for electricity/heat production using biogas as fuel. The turn-key system also includes control systems, cooling systems and other peripherals for efficient operation.

Service / maintenance

Biogas Systems AB offers its own service & maintenance organization for gas installations as well as gas engines, gas turbines and gas boilers. Service agreement with Biogas Systems AB facilities for optimal operation.

For further information regarding the philosophy around the design, construction and operation of landfill gas plants, please contact Biogas Systems AB Tel: +46 (0) 565 47750, www.biogassystems.se