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PRESSURE & VACUUM
SOLUTIONS

HIBON CASE STUDIES FOR BIOGAS APPLICATIONS

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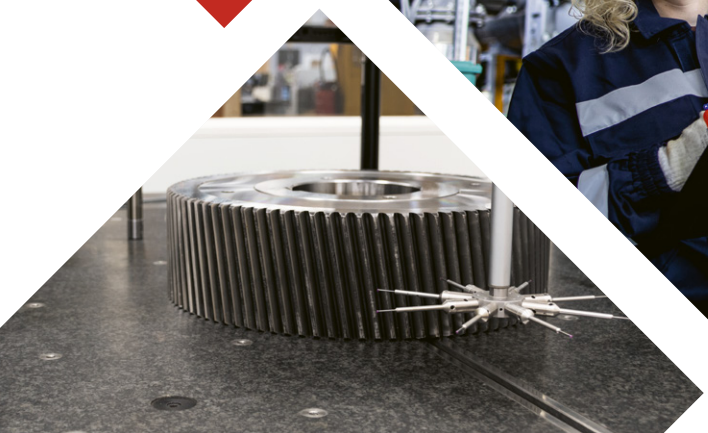
CASE STUDY

ABOUT US

Hibon, a business line of Ingersoll Rand, is a name synonymous with reliability and innovation in delivering **custom engineered solutions** to meet the complex needs of modern engineering projects. With a rich history spanning over five decades, we have honed our expertise and knowledge to navigate the ever-evolving landscape of technical, legal, and commercial requirements.

OUR COMMITMENT

At Hibon, we are fully committed to helping you handle the challenges of today's rapidly changing and increasingly demanding engineering landscape. Our mission is to offer customized solutions that redefine **innovation** and set the highest standards for **quality manufacturing**. We specialize in managing the most complex projects worldwide, employing state-of-the-art technology while keeping our unwavering focus on your success.



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GAS AND BIOGAS HANDLING

Hibon's application-oriented approach starts by thoroughly understanding the process and then offering the best solution based on customer demand and initial parameters. Our high-specification process gas units are custom-designed for critical applications, ensuring reliability, cost-effectiveness, and robustness. These skid-mounted packages offer advantages in applications where gas contamination is a concern.

Our solutions cover various gases and applications:

- **Biogas**: Transfer from digestion towers to energy co-generation systems or heat production.
- **Nitrogen**: Low-pressure systems for plastic bulk inert conveyors and inert drying systems.
- **Butane**: Recirculation of combustible liquefied gas vapors on storage and transport systems.
- **Flue Gases**: Recovery of gas from combustion processes.
- **Methane**: Recovery of methane.
- **Nitrogen with traces of methanol**: Methanol production systems.

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HIBON BIOGAS CAPACITIES

Hibon's solutions play a crucial role in various environmental applications, such as biogas recovery, degassing, and furnace cooling. Our blowers and vacuum pumps ensure the safe and **efficient transfer of gases**, including hazardous or harmful mixtures.

They are designed to withstand the most challenging environmental conditions, providing reliable performance without compromise.

With **flow rates of up to 7,800 CFM (13,000 m³/h and a maximum discharge pressure of 14.5 PSIG (1 bar))**, our products are robust, high-performance, and unaffected by gas contaminants or moisture. They can also be designed to include a wide range of special materials and seals to match your specific requirements. Additionally, our blowers are certified for **ATEX compliance**, making them suitable for hazardous or explosive environments.

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FOUR HIBON POSITIVE DISPLACEMENT BLOWERS IN PACKAGE BSF2-12 SC USED FOR THE RECOVERY AND FOR THE TRANSFER OF BIOGAS

End-User customer

Sugar mills consume significant amounts of natural gas and electricity during their operational seasons. They often operate their own boiler facilities and electricity generation plants.

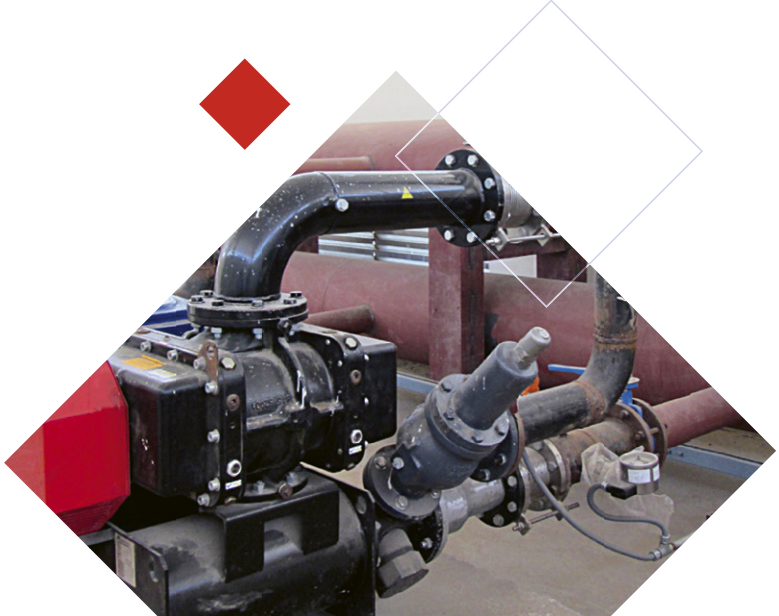
Application

Biogas refined with the special equipment is an analogue Refined biogas, processed with specialized equipment, serves as a substitute for natural gas and fulfills various technological requirements within the sugar mill. Biogas power plants within sugar mills produce electricity from biogas derived from waste through anaerobic digestion of spent wash. The biogas undergoes desulfurization and dewatering processes to eliminate sulfur content. Our Hibon package is utilized for the recovery and transfer of biogas.

Solution

HIBON supplied four positive displacement blowers in the BSF2.12 C package (NX12 200L 50HZ).

Gas	Biogas
Inlet Pressure	965 mbar Abs
Gas specific weight	1,11 kg/m^3
Discharge Pressure	1 413 mbar Abs
Working Differential pressure	400 mbar
Flow at Normal conditions (0 °C - 1 013 mbar)	1 300 Nm^3/h



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HIBON POSITIVE DISPLACEMENT BLOWER IN PACKAGE BSF1.6 SCC WITH ENCLOSURE IS USED FOR THE RECOVERY OF BIOGAS FOR BURNER FEEDING

End-User customer

French bioethanol production facility specializing in both sugar beets and cereal grains (wheat).

Application

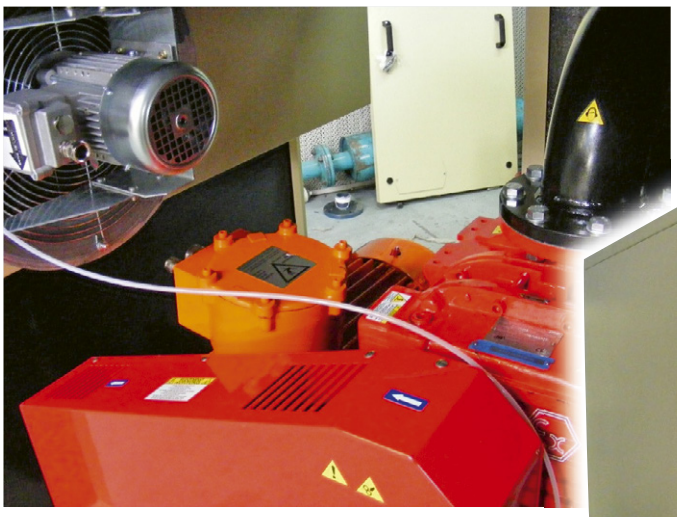
Anaerobic digestion, a natural process, generates biogas. Anaerobic digesters are closed systems that utilize this process to produce biogas and other valuable coproducts. During digestion, a positive displacement blower directs the biogas toward further processing.

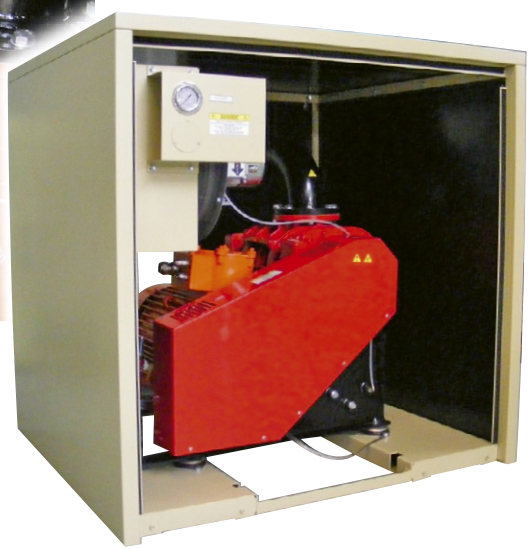
The recovered biogas can be used as an energy source for electricity generation, heating, transportation fuel, and other applications.

Solution

Hibon installed a positive displacement blower in the BSF1.6 SCC package (ATEX compliant) with an enclosure, featuring flow variation controlled by a frequency converter.

Gas	Biogas
Inlet Pressure (atmospheric)	1 013 mbar Abs
Discharge Pressure	1 513 mbar Abs
Working Differential pressure	500 mbar
Flow at Normal conditions (0 °C - 1 013 mbar)	563 Nm^3/h





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HIBON POSITIVE DISPLACEMENT BIOGAS BLOWERS USED ON THE SITE OF A FORMER LANDFILL FOR BIOGAS RECOVERY

Location

Saint-Michel Environmental Complex is based in Montreal, Quebec, Canada on the site of a former landfill which contains 41 million tons of garbage.
The Complexe environnemental de Saint-Michel (CESM) processes and converts waste, conducts research and offers education about environmental topics.

Story

In the early 90's, the **Gazmont Biogas Electric Power Station** was built on site.

Solution

Hibon blowers were selected to convey the gas. Seven Model **SNH140 – 350 HP Two-Lobe Positive Displacement Blowers** operated at 1 200 RPM, 5 operating / 2 standby and delivering a total of **26 000 CFM** at peak production were installed.

The station operated until 2014. In 2017, the smaller Biomont Biogas Electric Power Station started operation on the same site to supply power to about 2,000 households and hot water for surrounding buildings thus sparing the emission of 1,800 tons of CO_2 per year.

During the construction most of the old equipment was replaced, however **two of the original Hibon blowers were kept and are still running and feeding gas to the station to this day**. This project is one of the most ambitious environmental restoration projects ever undertaken in a North American urban area. It provides a solid reference for **Hibon on a biogas application**.

After more than **20 years of operation**, the performance of Hibon biogas blowers was considered sufficient to keep them in place to use for a new project, exposing **Hibon's blowers reliability and longevity**.

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