ANKA

Innovative Solutions for Biogas & Landfill Gas

anka-gmbh.de

Thanks to the **REGENERATIVE VOC & SILOXANE REMOVAL SYSTEM DEVELOPED BY ANKA,** the untreated biogas which contains VOC & Siloxane passes through the filter system and is fed to the gas engines **UP TO 99% PURIFIED FROM VOC & SILOXANE**

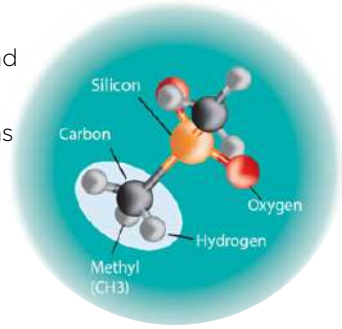
REMOVAL EFFICIENCY UP TO	SILOXANE CONCENTRATION AFTER REMOVAL
%99	**1 mg/m³**

REGENERATIVE VOC & SILOXANE REMOVAL SYSTEMS

What are VOC & Siloxane?

VOCs (Volatile Organic Compounds) are organic compounds present in biogas that easily evaporate and originate from waste decomposition and industrial processes.

Siloxane is a compound found in biogas originating from domestic solid waste (such as cosmetics and detergents), food waste and wastewater treatment sludge.



Our Solution

As ANKA, we are proud to have managed to manufacture an industrially viable biogas VOC & Siloxane removal system as a result of the R&D studies carried out.

Thanks to its modularity it can be easily scaled to any capacity with very low pressure loss which is very important for long-term energy savings.
The system consists of two filters containing the filter media used for VOC and siloxane removal.

These filters work in sequence. When a filter reaches its full adsorption capacity, the system automatically activates the other tank which is already regenerated and ready. Thus, the gas engines are continuously supplied with clean gas.

VOC & Siloxane Removal System

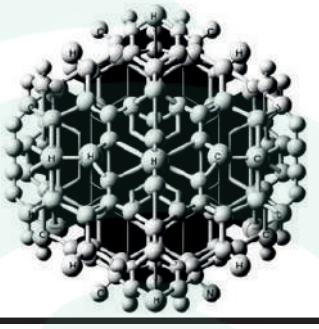
SPECIFICATIONS

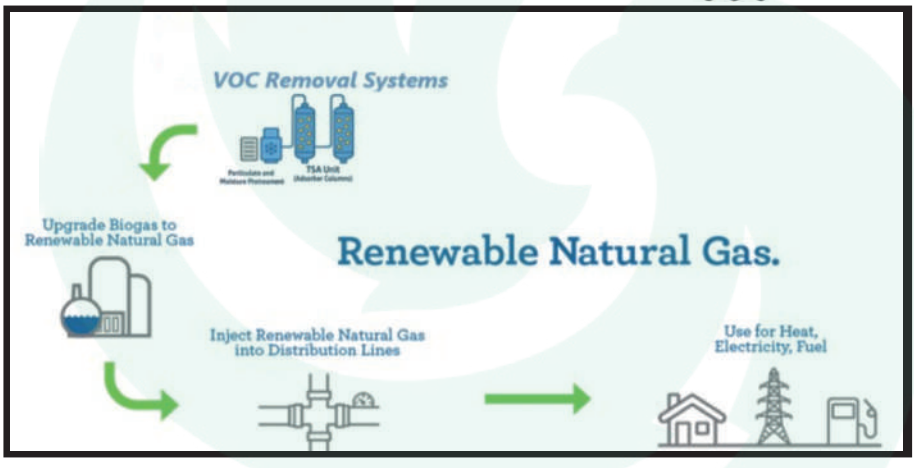
- Ability to work with PLC fully automatically without requiring operator intervention
- Low maintenance cost
- Compliance with ATEX and CE directives
- Fail-safe system
- Low cost filter material
- Regenerable filter media
- Small footprint, compact design
- Communication hardware that can be integrated into SCADA systems (Optional)
- Remote monitoring and SMS sending feature (Optional)

VOC REMOVAL : WHY IT MATTERS ?

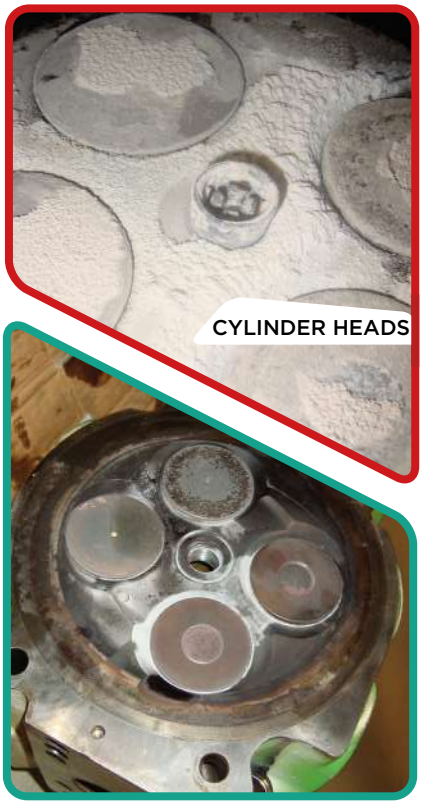
VOC removal helps prevent the following damages:

- **Membranes Clogging and Reduced Service Life**
- **Decreased Separation Efficiency in PSA Systems**
- **Increased Energy Consumption in PSA Systems**
- **Sensor and Equipment Failures**
- **Rapid Saturation of Activated Carbon Beds**
- **Grid Injection Risks in RNG Projects**
- **Catalyst Poisoning**
- **Frequent Media Replacement**





1.500 Hours of Non Filtered Engine Parts



16.000 Hours of Filtered Engine Parts

COST SAVINGS WITH SILOXANE REMOVAL

MAINTENANCE

Overall maintenance costs

UP TO **70%**

PRODUCTION LOSS

Production loss during the head reconditioning and unexpected failures causing stoppage

UP TO **90%**

POWER LOSS

Power loss of the engine due to siloxane deposition resulting in knocking and wearing in gas engines

UP TO **95%**

SPARE PART

Spare parts replacement costs

UP TO **85%**

SAVINGS TO BE MADE AS A RESULT OF SILOXANE REMOVAL

	BENEFITS
SPARK PLUG LIFE	EXTENDED 4X
LUBRICANT OIL LIFE	EXTENDED 35%
OIL FILTER LIFE	EXTENDED 2X
CYLINDER HEAD, PISTON, PISTON RING AND BEARING LIFE	EXTENDED 3X
ENERGY PRODUCTION	INCREASES 4%
ANNUAL LABOR COST SAVINGS*	7,350 MAN X HOURS

*For a facility with a gas flow rate of 20.000 Nm^3/h

Istanbul/Seymen Landfill Gas to Electricity Power Plant

VOC & Siloxane Removal System

Istanbul / Silivri / Seymen Landfill Gas to Electricity Power Plant, is located in Seymen Sanitary Landfill area in Silivri district of Istanbul, where household waste belonging to the European Side of Istanbul is stored.

The capacity of the plant increased to 25 MW in October 2021, As of December 2021 it has increased to 37 MW, providing the equivalent of the electricity needs of approximately 190,000 households (760,000 people) annually, the emission of methane gas equivalent to the greenhouse effect of 1.45 million tons of carbon dioxide (CO2) equivalent to the carbon reduction of 37,000 trees, and the elimination of carbon emissions generated by 940,000 vehicles. When the plant reaches full capacity, it will be the largest single-point Landfill Gas to Electricity generation facility in the world with an installed capacity of 90 MW.

Capacity: 20.000 Nm^3/h
1.Phase: 2020 / October
2.Phase: 2022 / February
Engine Brand: JENBACHER INNIO
End User: İstanbul Enerji A.Ş.

8 x SGS-2500 MODULES

31 x 1415 kW GAS ENGINES

“THE LARGEST Regenerative VOC & Siloxane Removal System IN THE WORLD”

Brazil Minas Gerais RNG Plant

VOC Removal System

The Belo Horizonte Landfill Gas-to-RNG Facility, located in Minas Gerais, Brazil, operates with an RNG production capacity of 4.000 Nm3/h and represents ANKA's first project in South America. The facility is equipped with ANKA's Regenerative VOC Removal System, consisting of three parallel units (3 × 2,500 Nm³/h), providing a total LFG treatment capacity of 7,500 Nm³/h.

By integrating ANKA's advanced purification technology, the plant achieves high gas quality, maximum operational stability, and superior protection for downstream components such as polishers and PSA upgrading units.

Treatment Capacity of LFG: 7,500 Nm³/h
RNG Production Capacity: 4.000 Nm³/h
Year: 2025
End User: Asja Brasil

3 x SGS-2500 MODULES

4000 Nm³/h RNG

Veolia LFG to Electricity Plant

Siloxane Removal System

Çanakkale LFG to Electricity Plant converts the LFG from the wastes into electrical energy. The Integrated Solid Waste Plant holds a production license of 3.6 MW. The plant consists of four main components: gas collection, gas preparation, energy production and electricity distribution and meets the electricity needs of 3000 households per year.

Capacity : 1.400 Nm³/h
Year: 2022 / April
Engine Brand: MWM
End User: Veolia Çanakkale RR Atık Hizmetleri A.Ş

1 x SGS-1400 MODULES

2 x 1200 kW GAS ENGINES

Latvia Riga LFG to Electricity Plant

VOC & Siloxane Removal System

The Riga Landfill Gas-to-Energy Facility in Latvia is equipped with ANKA's Regenerative VOC & Siloxane Removal System, designed to treat 1,500 Nm³/h of landfill gas. This project marks another milestone in ANKA's international expansion and showcases how Regenerative VOC & Siloxane Removal Technology delivers high-efficiency purification for renewable energy applications.

The system provides long-term engine protection, increased efficiency in power generation, and offers a sustainable solution for landfill gas utilization, contributing to cleaner energy and a greener planet.

Capacity: 1,500 Nm³/h
Year: 2025
Engine Brand: INNIO Jenbacher
End User: UAB EKOTIKSLAI

1 x SGS-1500 MODULES

3 x 1000 kW GAS ENGINES

Her LFG to Electricity Plant

Siloxane Removal System

A Regenerative Siloxane Removal System with a capacity of 2.500 Nm^3/h has been installed for the power generation facility from landfill gas with an installed capacity of 7 MW in the sanitary landfill located in Boğazköprü, Kayseri. In the project scope; engineering, manufacturing, assembly, automation, and commissioning works have been carried out.

Capacity: 2.500 Nm^3/h
Year: 2023 / January
Engine Brand: MWM
End User: Her Enerji Elektrik Üretim A.Ş.

1 x SGS-2500 MODULES

5 x 1516 kW GAS ENGINES

Aktor - Greece WWTP

VOC + Siloxane Removal System

A Regenerative Siloxane Removal System with a capacity of 600 m^3/h has been installed for the wastewater treatment plant of Ellaktor Group established on Psyttalia Island, located within the borders of Athens. In project scope; engineering, manufacturing, assembly, automation and commissioning works have been carried out.

Capacity: 600 Nm^3/h
Year: 2023 / March
End User: Ellaktor Group

1 x SGS-600 MODULES

3 x RTO RTO

ANKA GmbH

ANKA was established to deliver high-efficiency gas purification solutions, including engineering, project planning, maintenance, system revisions, technical consulting, R&D project development, and on-site supervision services for biomethane, landfill gas, and biogas facilities. Through its Regenerative VOC & Siloxane Removal System, ANKA ensures reliable performance with minimal maintenance while protecting downstream equipment and maintaining consistent gas quality.

ANKA provides turnkey solutions for biogas-to-power plants, landfill gas (LFG) facilities, RNG and gas upgrading projects, and wastewater treatment plants.

ANKA

Hammfelddamm 4a 41460 Neuss Deutschland

anka-gmbh.de

anka@anka-gmbh.de