



## Biogas to renewable energy

### Industry introduction

As Europe's demand for renewable energy sources increases, many businesses are turning to the conversion of biogas into clean power. However, whether fed to a combined heat and power (CHP) engine or upgraded into biomethane via membranes or scrubbers, raw biogas must be first purified. This not only ensures its upcycling into a grid-grade green fuel (99% CH<sub>4</sub>), but also prevents any damage to plants' equipment.

Typical biogas impurities include:

- Hydrogen sulfide (H<sub>2</sub>S), causing corrosion and the acidification of the CHP engine oil.
- VOCs including:
  - Siloxanes (biogas from landfill), which is abrasive for the CHP engine.
  - Terpenes (biogas from anaerobic digestion of green waste), which generate odour nuisance,
  - Other VOCs blocking the membranes of biogas upgrading to biomethane.

Both H<sub>2</sub>S and volatile organic compounds (VOCs) such as terpenes also implies odour emissions, thus potentially triggering complaints from plants' neighbours.

With activated carbon (AC) being a Best Available Technology (BAT) for biogas purification, DESOTEC cost-effective and sustainable mobile filtration solutions can let companies reach their green goals while maximising their profits.

In addition to this, DESOTEC expert engineers can help businesses optimise the performance of their biogas purification process.

## Our solution for you

### Mobile filter solutions

DESOTEC developed a fleet of mobile filters which can process biogas flows from 50 m<sup>3</sup>/h to 4,000 m<sup>3</sup>/h each. Increased throughputs can be realised through parallel setups.

DESOTEC expert engineers will advise on the best filter configuration to use in order to meet your needs.

The use of mobile filters offers several advantages to the user:

- An easy (plug-and-play) and compact solution.
- A modular design allowing to treat a broad range of flow rates, pollutants, and concentrations.
- Availability of daily rental contracts.
- On-site piloting.
- Minimum production downtime (filter exchange takes about 30 minutes).
- Fast installation (prompt response to odour complaints).
- No maintenance cost.
- No handling of dust or hazardous waste.
- Continuous new developments and improvements.

Once saturated, DESOTEC collects filters at biogas treatment plants and carries them in closed units to its premises. Here, we reactivate the spent carbon using our own furnaces so that it can be recycled.



### Activated Carbon

DESOTEC offers different types of activated carbon for biogas treatment:

- Non-impregnated activated carbon of different qualities for the removal of siloxanes and other VOCs (e.g., terpenes).
- Impregnated activated carbon for the removal of H<sub>2</sub>S or NH<sub>3</sub>.

Our products are designed for a high volumetric (kg Sulphur/m<sup>3</sup> AC) activity, thus implying a low change-out frequency and a low cost per weight of H<sub>2</sub>S removed.

## About DESOTEC

We are the leading provider of mobile filtration solutions in Europe and are establishing this position in the USA. Our unique, flexible, circular service concept, together with our extensive expertise built up over many decades, make us a trustworthy partner. Our mission is to unburden industrial businesses in Europe and USA and help them operate more sustainably, to build a cleaner, greener world for all.