# **DESOTEC** \$

# Innovative biogas solution: closing the loop on high sulphur loaded activated carbon

Circular solutions play a crucial role in addressing environmental challenges and ensuring long-term viability. The biogas industry can minimize waste, reduce environmental impact, and create a more sustainable energy ecosystem. Ready to learn more about how our circular solution can revolutionize your biogas production and how we help prepare you for the future?

## What solution do we bring to the biogas industry?

Years of innovation have led to the development of our specially designed production facility and ground-breaking purification solution. This facility is a game-changer, as it safely converts highly sulphur-loaded spent carbon into a closed-loop model.

By valorizing all pollutants, our solution is fully pollutant-free, with zero discharge. This shift not only meets present needs cost-efficiently but also reduces dependency on non-European sources, ensuring a more environmentally responsible future.

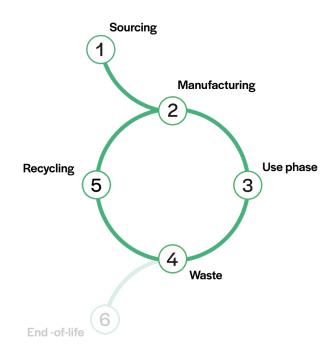
#### How we help you close the loop?

Our advanced production facility enables the reuse of highly sulphur saturated activated carbon from the biogas industry.

Thanks to our innovative approach, we achieve zero discharge by converting sulfur and organic compounds into valuable gypsum applications or energy sources.

The high sulphur loaded carbon undergoes a separation into sulphur and activated carbon, which are then processed in the second phase of our production for use in biogas application, effectively closing the loop.

This integrated approach not only ensures environmental responsibility but also offers a cost-effective and sustainable solution for the biogas industry, fostering circularity and innovation.





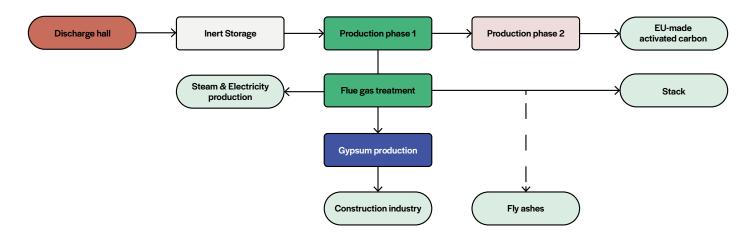




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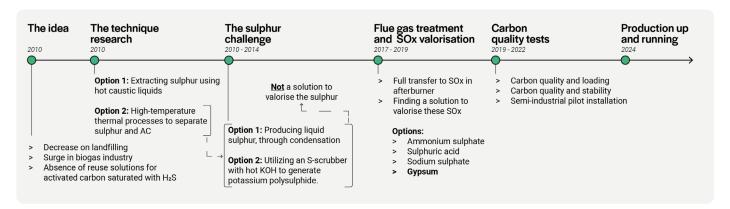
#### A glimpse into our production facility: process flow

- Discharge saturated activated carbon in a **closed hall** to eliminate potential odor concerns.
- Store saturated activated carbon inertly to prevent self-ignition.
- Separate activated carbon and all pollutants such as sulphur.
- In the second phase, refine the activated carbon for biogas applications.
- Convert all by-products into useful applications such as steam, electricity, or gypsum.



### The secret behind our solution: a story of research and development

Our revolutionary purification solution designed specifically for the biogas market is preceded by a decade of dedicated research and innovation. In 2010 we saw a surge on the demand for  $H_2S$  removal solutions, all without a solution for its end-of-life waste stream.



During our research into optimal techniques, the hightemperature thermal process was the most viable solution. This method effectively separates activated carbon and sulfur while eliminating all pollutants, including organic compounds, and ensures no crosscontamination between clients. Once we selected the thermal solution, addressing the SOx generated in the after-burner became crucial. Among several options, gypsum production emerged as the most economical and sustainable solution, given its potential applications in the construction industry, thereby rendering all by-products valuable.

#### **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.

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