

# POL-AC: Biomethane Polishing for Fuel Cell Applications



Biogasclean is an integrated OEM and lifecycle partner for high-specification energy applications, including biomethane polishing systems for fuel cell-based power generation. Fuel cell technology enables clean, high-efficiency, 24/7 on-site electricity generation, making it increasingly attractive for net-zero data centres and other mission-critical applications. For these use cases, Biogasclean designs and manufactures advanced gas polishing systems, reducing impurities to parts-per-billion (ppb) levels, significantly below conventional parts-per-million (ppm) standards required for engine-based systems.

## Application Context

For operators transitioning from conventional Combined Heat & Power (CHP) systems based on internal combustion engines to next-generation fuel cell solutions, Biogasclean provides proven gas polishing technology with an established operational track record. Fuel cells convert biomethane into electricity with high efficiency and low emissions. In addition, the process generates usable heat, enabling combined heat and power (CHP) utilization with superior overall efficiency. In advanced energy markets, regulatory frameworks increasingly incentivize high-efficiency, low-emission power generation, accelerating the adoption of fuel cell technologies.

## How it works

Biogas is treated through activated carbon-based polishing systems, designed to remove trace contaminants such as H<sub>2</sub>S, siloxanes, VOCs, and other critical impurities.

This multi-stage polishing process ensures that gas quality meets fuel cell specifications, with impurity levels reduced to the ppb range, safeguarding performance and longevity of downstream equipment.

## Applications

- On-site electricity generation for data centres and mission-critical infrastructure
- Fuel supply for fuel cell-based CHP systems
- Integration into advanced low-emission energy systems

## Key Highlights

- Fuel cell-grade gas polishing with impurity levels in the ppb range
- Advanced activated carbon filtration systems
- Proven technology with operational reference base
- Flexible and scalable design across multiple applications
- Fully manufactured and tested in-house at our FNX manufacturing facility in Spain

