

# BIOGAS PLANT PROCESS CONTROL

## THE OPPORTUNITY

Biogas is produced from the biological decomposition of organic wastes. It is essentially a mixture of methane (CH<sub>4</sub>) and carbon dioxide (CO<sub>2</sub>). Controlling its production, its capture and the recovery of its energy content (CH<sub>4</sub>) is important: It is a non-fossil source of energy, and releasing CH<sub>4</sub> into the atmosphere as a more severe impact than CO<sub>2</sub> emissions.

Landfill gas is a natural biogas produced from the underground decomposition of the organic wastes being buried in dumps. In many countries, the landfill gas extraction and energy recovery is a regulatory obligation. Industrial biogas is produced in large digester units, in which the biological degradation of organic wastes is accelerated in a controlled way.

The energy content of the wastes is then recovered, either by fueling the biogas into combustion engines for power (and heat) generation, or adding a stage to upgrade the biogas quality for injection in the local grid.

Biogas streams composition need to be measured either to monitor the production or digestion process or to control proper fueling conditions to the downstream process: combustion engine or upgrading stage.



## OUR SOLUTION

The NDIR sensors of our Andros 6500 series are performant solutions for system integrator, working on digester or biogas-fed engine process control solutions.

They feature three infrared channels for CH<sub>4</sub>, CO<sub>2</sub> and CO, and can support optional electrochemical (EC) sensors for O<sub>2</sub>. Several models with different measurement ranges are well suited: to accurately control:

- Either to monitor the operating status of a digestion process (industrial biogas plants), via the measurement of the composition of the biogas stream,
- Or to control the fuel quality as the primary parameter of the combustion process (when the energy content is recovered through a combustion engine), hence to maximize the energy extraction of the biogas

Some types of internal combustion engines can run with methane concentrations as low as 25% meaning even smaller landfill sites can be useful as fuel sources provided there is a reliable and inexpensive way to monitor the quality of the methane being produced.



Advanced Energy's Andros 6500 Series

## YOUR BENEFITS

- Sensitivity and accuracy for measurement at trace levels
- Direct sampling for in-situ measurements
- Robust design for an easy deployment in field conditions
- Ease of use by non-experts



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