

Lean Gas To Power

Description

Lean gas Inlet stream from:

- › Landfill
- › Coal mine
- › Process off-gas (i.e. upgrading)
- › Boil off
- › Off-spec gas
- › Any source with +1,5% methane

Across landfills, wastewater plants, and industrial sites, vast amounts of **low-methane gas** are usually flared or wasted, contributing little value while releasing greenhouse emissions. Ecospray's LG2P (Lean Gas to Power) system is engineered to **convert** these **ultra-lean gas streams** - down to 1.5% CH₄ - **into reliable electrical and thermal energy**. By turning an environmental liability into a valuable resource, LG2P delivers both sustainability and efficiency in a compact, **containerized solution**.

An oxidation chamber ensures minimal methane slip and zero harmful by-products, making it ideal for low methane concentration gas flows or methane slip reduction in upgrading systems.

Features

- › **Compact & modular design** - skid/container (40-45 ft) with a flexible design to adapt to the user's available space, easy to transport, install and relocate reducing footprint compared to biofilters, which are significantly larger than our containerized solution.
- › **Eliminates greenhouse gas emissions**, achieving CH₄ levels below 0.2 % after oxidation and prevents harmful combustion by-products (NO_x, SO_x) through low-temperature oxidation.
- › **Increases landfill value** by recovering the maximum possible gas from low-methane sites through efficient gas extraction supporting landfill sustainability, contributing to a true decarbonization process.
- › **Converts waste into a valuable resource**, eliminating disposal costs.
- › **Unmanned** - a remote control of process variables is provided, including web based access and proper database storage, allowing remote parameters control and proper maintenance scheduling. Plant data, including alarms, are available via OPC from the operator interface system (HMI).

Technical Information

Process

The LG2P system **utilize any low-calorific gas with a CH₄ content down to 1.5%** (i.e. only 50 Sm³/h of methane diluted in approximately 4,000 Sm³/h of gas flow) generating gross 130 kWe while recovering about 300 kWt of thermal energy from gas at +200 °C. The waste gas is processed to abate its GWP of at least one order of magnitude through an oxidation chamber with an MBTM above the industry average.

