



Méthavalor – Forbach, France



Presentation of the project:

The public company Sydème processes the household waste of 291 towns and villages with a total population of 390 000 inhabitants, in the region of Forbach, in eastern France. Sydème commissioned a biogas plant that runs on biodegradable municipal waste. Called Méthavalor, the plant has a capacity of 45,000 tonnes a year and produces 5,500,000m³ of biogas. Sydème's comprehensive facility is the first in France to combine, on a single site, every innovative technology used to convert biowaste into biomethane for grid injection and vehicle fuel. Biowaste obtained from source-separated collections is processed by anaerobic digestion to produce biogas (this is the first experiment involving anaerobic digestion of biowaste collected simultaneously with other types of waste). The biogas is purified by AIR LIQUIDE into biomethane (the first membrane biogas unit in France). The biomethane is then injected by GRDF (the first injection plant installed in France by GRDF) into a biomethane fuelling station operated by GNVERT (the first public biomethane vehicle fuel station in France) to power a fleet of 34 gas-fuelled vehicles (first fleet of commercial vehicles that run on biomethane).

Parties involved:

- Purification procedure: Air Liquide
- Contractor: Sydème

Objectives:

- Produce dehumidified/purified biogas
- Guarantee efficiency and profitability
- Reduce operating costs

The CIAT solution:

Thanks to this dehumidification system, DRYPACK condenses water vapour contained in biogas by cooling the gas to the appropriate temperature and finely separates the droplets to prevent them from being re-entrained into the biogas. The advantage of this process is that, by separating and draining away these droplets, it removes a portion of the impurities contained in the biogas. The system installed at the Méthavalor plant is a DRYPACK Plus consisting of a cooler/condenser, a high efficiency separator and a water chiller, delivered in the form of components to facilitate integration into the AIR LIQUIDE purification module. In addition, DRYPACK One and DRYPACK Flex skid-mounted solutions have been developed, guaranteeing the same quality of biogas while simplifying implementation.

Technical data and equipment:

DRYPACK Plus composed of:

- 1 water chiller
- 2 shell-and-tube heat exchanger
- 1 high efficiency droplet separator

