

# How Entsorga uses data storage to improve plant efficiency and sustainability

Industrial machine builders are constantly looking for solutions to improve performance and reduce costs. In a context that demands the manufacturing sector to be increasingly resilient and sustainable, the IXON Cloud application developed by Entsorga represents a true virtuous circle.



*Composting and anaerobic digestion plant in Santhià (VC), designed and built by Entsorga and owned by Territorio e Risorse S.r.l., a 100 percent subsidiary of the IREN Group.*

## Challenge

Italian company Entsorga is a leading designer and builder of plants for production of energy, materials and renewable fuels from waste. The company was looking for a solution that could combine [remote access](#) with [data storage](#). So that both remote maintenance operations and the improvement of its maintenance service offering could be realised.

There were several objectives:

- Equip Entsorga's technicians with the tools and information for proactive assistance
- Provide plant managers with an overview of operations
- Ensure optimal levels of biogas production, reducing the environmental impact of the plants

## Solution

The IXON Cloud solution was chosen for the installation of lines to recover biogas from organic waste. The operation of a line involves an overhead crane for waste handling, and a plug-flow semi-dry anaerobic digester where biological fermentation takes place in the absence of oxygen.



*"Cow" anaerobic digester with semi-dry system, developed by EntSORGA in collaboration with Zenvirotech*

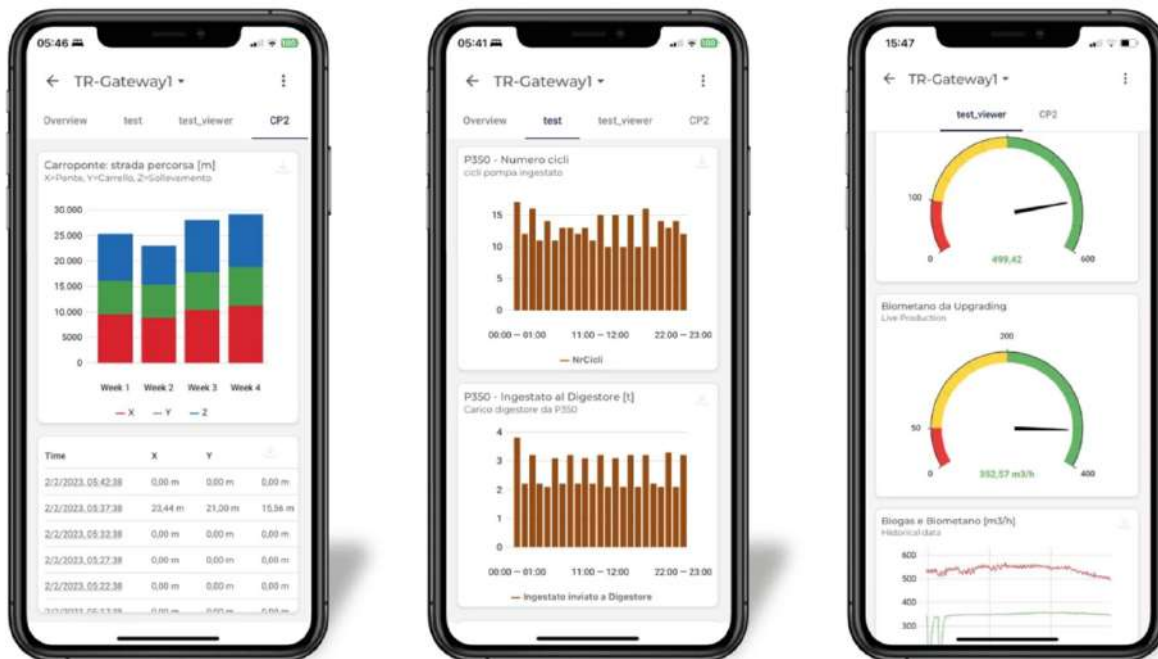
The waste in the digester is moved by an agitator, to facilitate the activity of microorganisms, and maintained at a constant temperature of 40°C by a steam heating system. The resulting biogas is then cleaned (upgraded) to obtain biomethane, which in turn is fed by a compressor into the Snam networks.

*"In the absence of a control system, downtime of one or more pieces of machinery can impair biological fermentation and cause a reduction in biogas production"*

Andrea Rivetti  
Electrical and Automation Engineer at EntSORGA

Installation of IXON Cloud enables remote monitoring of the entire line. The overhead crane, plug-flow digester, upgrading plant, and compressor are connected and active 24/7. Due to the presence of sensors installed along the line, data are collected using a plc-based system: plcs are installed on individual machines and connected to a central plc, which in turn is connected to an IXrouter from IXON.

The IXrouter collects and transfers all the data to the platform on the Cloud, which EntSORGA technicians can access remotely at any time, connecting directly to the plants deployed at the clients' sites, monitoring their operation and setting up the sending of real-time notifications when critical thresholds are reached (distance traveled by the overhead crane, amount of waste fed into the digester, measurement of biogas flow rate in Nm<sup>3</sup>/h). This allows immediate intervention in case of anomalies, ensuring an optimal level in biomethane production.



Real-time and historical data visualisation dashboard on IXON Cloud.

*“With a remote access solution [...] you get a plant running 24/7, even if not manned constantly by operators. This is why it is essential to connect via the smartphone app and view data in real time*

Andrea Rivetti  
Electrical and Automation Engineer at Entsorga

In addition, the availability of data has enabled Entsorga to include **regular reporting** in its service model. The process engineers responsible for monitoring prepare reports on a monthly basis on the operation of each plant. This allows for additional mid-term control and the production of proven documentation to be shared with external regulators for compliance with operating criteria.

## Conclusion

The application of IXON Cloud to Entsorga's technologies in the field of anaerobic digestion enables the control and optimisation of plants and production processes. The results? Reduced consumption of fossil fuels for processing, maximum energy efficiency, guaranteed optimum levels of biomethane supply, maximum treatment capacity per m<sup>2</sup> of soil, as well as a drastic reduction in on-site trips and incidents related to technical interventions.