

LEADING A REVOLUTION IN BIOWASTE RECYCLING

FINAL CONFERENCE Breaking barriers to make the most of biowaste Innovative pre-treatment and monitoring of OFMSW

María Paula Marozzi 19th October, 2022





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Ground Maintenance



Sewerage system maintenance







Providing services to cities since 1911



Top 7 in the world



Serves over 66 million citizens



Most technologically advanced vehicle fleet in the world with over 16,000 units



Over 700 wastetreatment, recycling and disposal centres



ISO 50001 certificate Comprehensive Energy Management



Management of 23.6 million tons waste per year



Operating in more than 5,000 municipalities



About 2,394 sustainable vehicles (CNG, electric, hybrid and bipower)



Over 40,000 employees



Inclusion of underprivileged groups in the workplace

LAS DEHESAS BIOMETHANIZATION PLANT





TREATED RESIDUE OFMSW

CAPACITY Pre-Treatment: 218,000 Tn/ Year 5 Digesters

PRODUCTION (2021): Digestate: 67,151 Tn/ Year Biogas: 21,509,762 Nm3/ Year



FCCC Medio Ambiente

LAS DEHESAS BIOMETHANIZATION PLANT Mechanical Biological Treatment (MBT)



SCAL





1. BIOWASTE HOMOGENIZATION



Proper homogenization of biowaste is mandatory for conversion and valorization

2. BIOWASTE CHARACTERIZATION



Impurities (non-biodegradable materials) hinder the recycling of biowaste and affect the quality of the obtained end-product.



SOLUTION to BW homogenization: Mechanical improvements

Trommel improvements

Grinders







HOUSEHOLD BIOWASTE (2022)



Impurities (non-biodegradable materials) hinder the recycling of biowaste and affect the quality of the obtained end-product.



IRIS developed an automatic monitoring system **NIR – HIS (Near Infrared Hyperespectral Imaging)** able to characterize different kinds of waste, between organic and inorganic fractions.

The operation of this technology is based on hyper spectral imaging techniques.

Installed Las Dehesas's Biomethanisation Plant for validation.







MONITORIG SYSTEM COMPONENTS







INSTALLATION & COMISSIONING OF MONITORING SYSTEM

February 2021



Measurement period: May – September 2021

Inconsistencies in the initial measurements of the monitoring system

Permanent collaboration with IRIS to solve technical problems and improve the quality of measurements.











Potential – Advantages

Immediate results and continuous measurement of the quality of the BW

Replace Manual Characterization

Comparison between results obtained manually and automatically

Adapt pre-treatment to the quality of BW





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