



John Cockerill - The Nesa Solution®
Wastewater Treatment (WWT) sludge



PYROLYSIS TO REDUCE THE VOLUME OF SEWAGE SLUDGE & RENDER THEM INERT

Thermal treatment of sewage sludge from large Wastewater Treatment Plant (WWTP)

Client
GIDA S.P.A. – Prato site, Tuscany - Italy

Sector of activity
Wastewater treatment

Capacity
8000 kg/h

Year
2020



The challenge

GIDA is a wastewater treatment plant of 1M population equivalent. It generates sludge (30% primary + 70% biological) which is thickened and then centrifuged.

To manage the huge amount of biosolids resulting from the continuous wastewater treatment process, a large-scale, robust and reliable industrial technology was needed, to ensure the safe and efficient processing of the annually produced 15-20 kt of dehydrated sludge with a dry solids content of 25%.

Besides being energy efficient, the chosen solution was to greatly lower the road transportation cost of the sludge, as well as the biological pollution (bacteria, viruses and other germs) resulting from its spreading on agricultural land.

In 1977, GIDA chose John Cockerill's Multi-Hearth Furnace (MHF) solution, providing all of the above characteristics and features. The client reiterated their confidence when opting once again for our MHF technology in 2019.



Our solution

After 40 years of reliable operations, and despite ever more stringent environmental regulations, GIDA considered that the MHF solution remained the optimal option for managing its sludge, part of which is since coming from industrial effluents.

In 2019, John Cockerill was called in to replace the initial MHF in fast-track mode to minimize the down time of the plant. To meet this key challenge and drastically reduce the delivery time schedule, the design phase was optimized thanks to the MHF technology's modular design. It only took 8 months for the equipment to be supplied and erected on site despite the COVID pandemic. Not at last, by having recourse to remote-controlled commissioning, providing both erection assistance and diagnosis of the furnace directly from the Head office in Belgium.

Our **NESACore™ MHF** technology is an "in situ" and low OPEX solution converting the 15-20 kt/y of dry sewage sludge into 1.5-2 kt/y of ash (pyrolysis), while the FGT (Flue Gas Treatment) produces 15 - 20 t/y of dry powder sorbent. Thanks to its new design and the optimized and embedded control system (ECS), the new furnace provides both an increased efficiency and safety.



The Benefits

After 40 years of reliable operations, the MHF process has proven to still be the most relevant technology for the treatment of sewage sludge from large wastewater treatment plants. Additionally, we know today that our **NESACore™** MHF solutions offer other important benefits, such as the **reduction of CO2 emissions & the complete inerting of micropollutants, plastics or PFAS, thus rendering them non-harmful.**

100%

Client satisfaction

>90%

Availability (min.8000/year)



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