REVAMPING OF MUNICIPAL SOLID **WASTE TREATMENT PLANT** - GIUGLIANO

Making the most of the EU Recovery and Resilience Facility (RRF) instrument, the project provides an upgrade to the plant layout in order for it to meet the increasingly stringent environmental regulations and maximize recovery and recycling rates. The initiative broadly contributes to enhancing the integrated cycle of urban waste.

The plant produces biomethane for the transport sector and compost for agricultural use in compliance with European and national regulations (EU regulation EN:13432 and the new European fertilizer regulation 2019/1009).

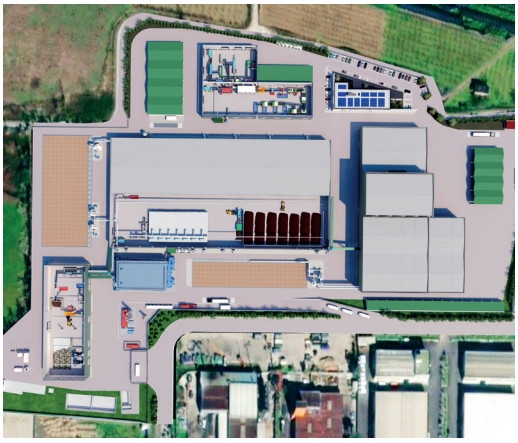
The revamp will include three process lines:
- An aerobic-anaerobic treatment section for the Organic Fraction of the Municipal Solid Waste (OFMSW) that will recover high-quality compost and biomethane;
- A section for the recovery of paper and cardboard coming from municipal solid waste segregated at source.
- A section for the recovery of glass coming from municipal waste segregated at source (colour-sorted glass, cullet production).

The aerobic-anaerobic process line provides a waste treatment capacity equal to 57.000 t/y of OFMSW, and 18.700 t/y of green waste. The section consists of:

a) A reception bunker followed by mechanical pre-treatment of incoming waste;
b) An anaerobic digestion section, where biomass undergoes a biochemical conversion producing biogas and a residual liquid (digestate);
c) A digestate mechanical dewatering section, with subsequent flocculation and flotation treatment followed by a leachate treatment plant;
d) A composting section for the aerobic stabilization of the solid digestate, thus obtaining a quality compost;
e) An up-grading unit of the biogas produced by anaerobic digestion to bio-methane production.

Cutting-edge technologies that will be implemented in paper / cardboard and glass sorting lines will allow a recovery capacity of 37.200 and 77.000 t/year respectively.

Last but not least, an exhausted air treatment system (scrubber, biofilter, and bag filters); will ensure gaseous-effluent compliance with EU and local regulations.



DESIGN DATA

Public client A.T.O. NA 2
Type of service Technical and economic feasibility design
Project cost € 36.825.466,06
Location Giugliano (NA)
Total site surface 60,000 m²
Design period December 2021

TECHNICAL DATA

AEROBIC-ANAEROBIC OFMSW SECTION

Treatment capacity 75,700 t/year
Process duration 90 days
Anaerobic reactors 2 of 2,100 m³ each
In-vessel reactor for aerobic stabilization 7 of 330 m³ each
Maturation phase 9 turning piles of 492 m³ each
Produced Compost 10,500 t/year
Produced Biomethane 600 Sm³/h

PAPER AND CARDBOARD RECOVERY LINE

Treatment capacity 37,200 t/year
Mechanical treatment Double screening stage, optical separation, highly automated (robotic) sorting, pressing and filming
Plastic material bales 2.400 t/anno
Paper and Cardboard bales 29.000 t/year

GLASS RECOVERY LINE

Treatment capacity 77,000 t/year
Mechanical treatments aeraulic separation, manual sorting, crusher, magnetic separator, foucault current separator, binary and ternary optical separation
Green glass cullet 26,250 t/year
Flint glass cullet 26,250 t/year
Amber glass cullet 13,130 t/year
High melting point glass 6,663 t/year
Metals (ferrous and non-ferrous) 875 t/year