REVAMPING OF THE MUNICIPAL SOLID **WASTE TREATMENT PLANT** - TUFINO

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 two 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 MSW segregated at source.

The aerobic-anaerobic process line provides a waste treatment capacity equal to 75.500 t/year, 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 for the biogas produced by the anaerobic digestion to bio-methane.

Cutting-edge technologies that will be implemented in the paper and cardboard sorting line will allow a recovery capacity of 37.200 t/year.

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 3
Type of service Technical and economic feasibility project
Project cost € 28.139.804,00
Location Tufino (NA)
Total site surface 88,000 m^2
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 m^3 each
In-vessel reactor for aerobic stabilization 7 of 322 m^3 each
Maturation phase 9 turning piles of 576 m^3 each
Produced Compost 10,500 t/year
Produced Biomethane 600 Sm^3/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/year
Paper and Cardboard bales 29.000 t/year