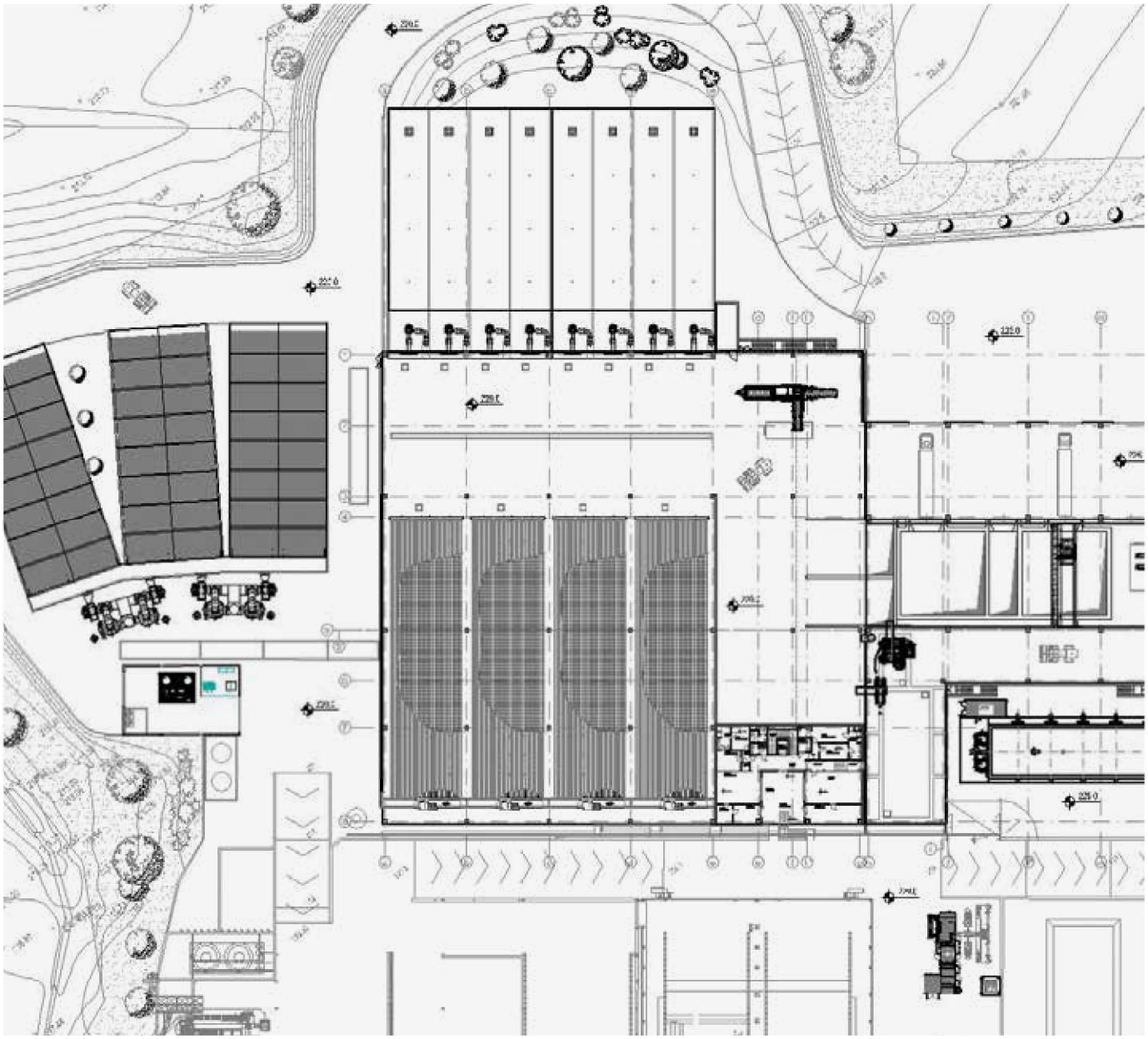
74 MONTEROTONDO MARITTIMO (GR) - ITALY

Year	2017
Client	ACEA AMBIENTE Srl
Operator	ACEA AMBIENTE Srl
System description	Pre-treatment, semi-dry anaerobic digestion, composting, CHP
Waste processed	Organic waste, biosolids, green waste
Plant capacity	70,000 t/year

Biogas is recovered from source separated organic waste with a semi-dry anaerobic digestion system, which is designed to process a high-solids feedstock and achieves a top biogas yield.



Source separated organic waste is processed by a pre-treatment line for sorting the organic components to be digested from rejects consisting of plastic bags and other non-biodegradable waste. The organic material produced in the pre-treatment line is then mixed with shredded green waste, which acts also as a bulking agent for the digestion process. The bulking agent derives from green waste shredding and compost screening operations.

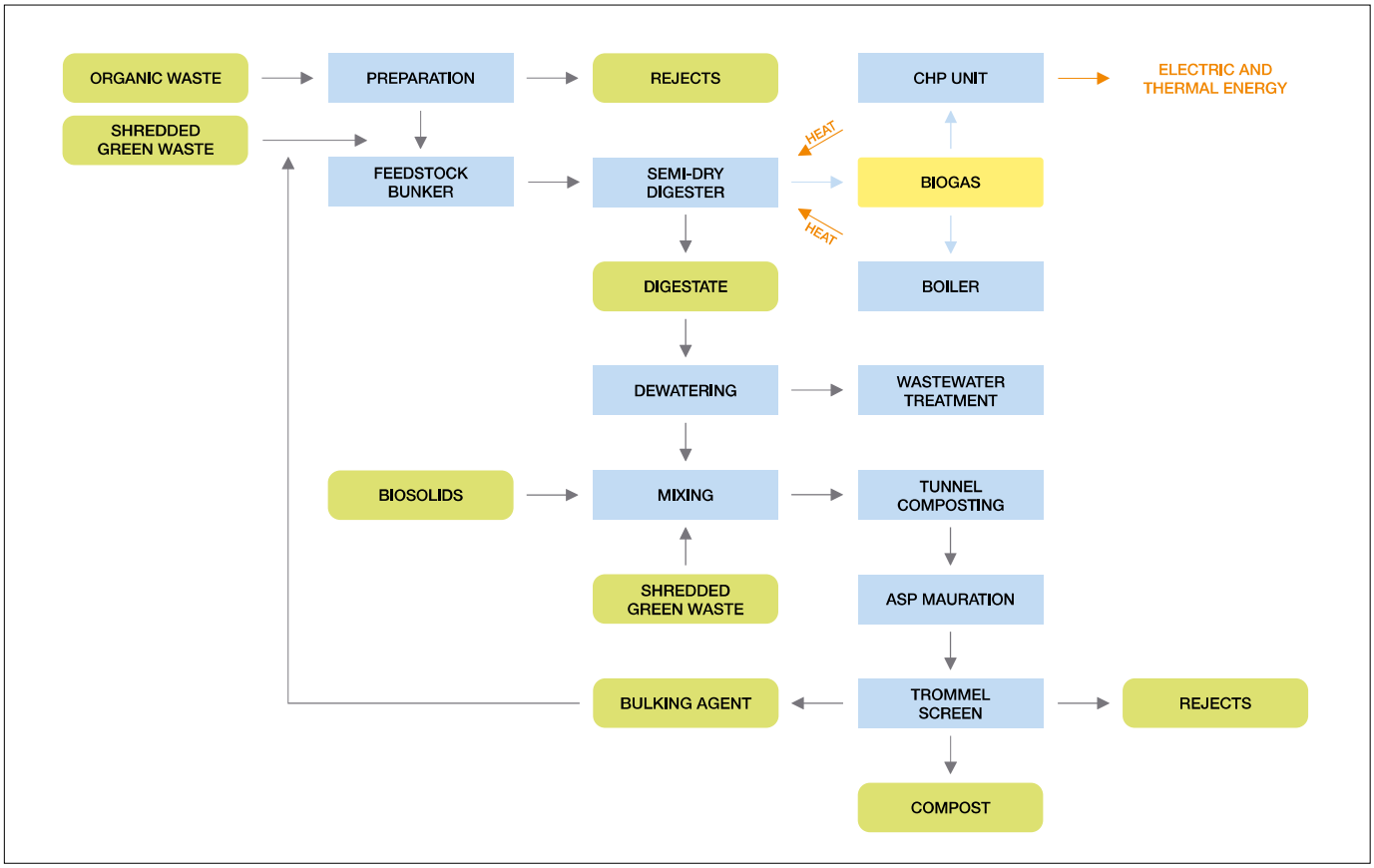
A feeding bunker is used to store the digester feedstock, which has a high solids content. This semi-dry digestion process achieves a high biogas yield from a single digestion vessel. The loading of the feedstock from the storage bunker into the digester is fully automated.

The digester vessel has the shape of an elongated parallelepiped and is made by steel-reinforced concrete.

Some slow-speed rotors, with a horizontal shaft driven by a planetary gear-motor, are provided inside the digester. The rotors agitate the material contained by the digester, which proceeds with a plug-flow pattern. The organic material is heated by heat exchangers located along the longitudinal walls of the digester. The produced biogas is used in a CHP unit, which generates heat and power. Part of the heat produced is used for heating the digester, which is also provided with a biogas-fueled boiler.

The digestate extracted from the digester is dewatered and mixed with shredded green waste and biosolids derived from wastewater treatment. The mixture is sent to a composting system including tunnels for intensive composting and an ASP (Aerated Static Pile) system for compost maturation.
After maturation, a trommel screen is used to sort a fine fraction (quality compost) from the oversized materials, which are either used as bulking agent in the digestion and composting processes or disposed at a landfill.

Air scrubbers and engineered biofilters are used to treat the air exhausted from the composting tunnels, which, prior to treatment, is mixed with the flow collected by the plant ventilation system.



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