

IMPROVEMENT OF AN EXISTING COMPOSTING PLANT IN CATANIA

The design for improving the existing aerobic biostabilization plant (authorized by the Italian Decree that regulates integrated environmental authorizations - D.R.S. 1004/2009) was devised for two different needs:

- i) to balance the waste treated with the waste produced by and arriving from the mechanical treatment plant (which was authorized by D.R.S. No. 248 26/03/2009 to treat 1.000.000 t/y of undifferentiated urban waste);
- ii) to provide a new section of the facility to be used for the treatment of organic waste from the separated collection of MSW, in accordance with the new target (>65% separate waste sorting) of the “Regional Plan for the management of Municipal Solid Waste of May 2012”.

The design regards the construction of:

- a new section for the aerobic treatment of the underscreened materials resulting from mechanical selection, having a maximum capacity of 150.000 t/y, equal to about 410 t/d (static heaps will be stabilized within 23 closed tunnels, and subject to forced ventilation). This will increase the current capacity from 315.000 to 465.000 t/y. So the treatment capacity will be adequate to process the organic waste (about 450.000 t/y) arriving from the mechanical plant.
- a new section for the anaerobic digestion of the organic waste resulting from separate collection of MSW with production of compost, with a maximum capacity of 75.000 t/y, which are about 205 t/d (process phases: mechanical pretreatments, anaerobic digestion, within 13 closed tunnels, for the production of biogas which is recovered within a 1.5 MW cogeneration, stabilization and drying of the digested sludge, within 13 closed tunnels subject to forced ventilation).

DESIGN DATA

Private client
SICULA TRASPORTI s.r.l.

Tasks assigned and carried out
Preliminary and final design for the Integrated Environmental

Cost € 51.359.406,90

Location Catania

Site area 113.000 m²

Pre-existing plant surface
36.000 m²

Additional surface for new plant 66.700 m²

Pre-existing facility construction period October 2010 - August 2012

Designing of enlargement project from March to november 2014

TECHNICAL DATA

ACCESSORY EQUIPMENT

Average biogas production
5.844.000 m³/year

Cogeneration system one internal combustion engine, 1.560 kWe and off-gas thermal recovery (1.640 kWt)

New treatment capacity
465.000 t/year (underscreen material);
75.000 t/year (organic waste from separate collection of M.S.W.)

Number of anaerobic tunnels
13 tunnels (550 m³ each),

Number of aerobic tunnels
36 tunnels, (550 m³ each)

Average process period 90 days for high-quality compost; 21 days for off-specification compost

