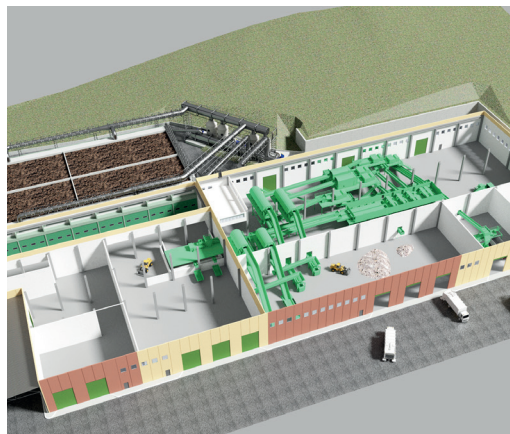


# INTEGRATED M.S.W. TREATMENT PLANT - GELA

The design is developed in accordance to a public tender for the construction of an integrated system for the M.S.W. mechanical and biological treatment in the Municipality of Gela (CIG 553112900C), which was issued by the Commissioner for the Waste Emergency in Sicily (O.P.C.M. 9/7/2010 n. 3887 - D.L. n. 43/2013). The plant lay-out provides two mechanical treatment lines for the screening of M.S.W. with a capacity of 31.4 t/h overall. The process-line layout is the following: a wide area for the storage of the incoming wastes, two screens with 300 mm holes for the separation of non-treatable waste, two shreddings and double-stage screenings (with holes from 130 to 80 mm). This is aimed to separate the following materials:

- i) oversize fraction >130 mm by which nonferrous metals (e.g. aluminium cans) and ferrous materials will be separated;
  - ii) oversize fraction 80÷130 mm, by which ferrous materials will be separated;
  - iii) underscreen fraction <80 mm, which must be processed with biological treatment.
- Oversize materials will be also processed with ballistic and optical separation in order to separate paper and recyclable plastic materials.

The designed layout is also arranged for future development of a fine-shredding section to produce RDF, a refining section for the bio-stabilized materials, and a recovery section for the organic waste from separated collecting of MSW (for producing high-quality compost). The biological treatment for under screen fractions is aerobic stabilization within closed air-forced tunnels, in order to obtain stable and dry materials which can be sent to disposal or recycled. The buildings will be kept in constant depression in order to ensure the health of workers; the air is recirculated within the aerobic tunnels to facilitate the process. Lastly, the exhaust air will be treated with two scrubbers and a biofilter, and be given off into the atmosphere, since pollutant concentrations are reduced to the levels set forth by law.



## DESIGN DATA

### Public client

Commissario Delegato per l'emergenza Rifiuti in Sicilia (ex O.P.C.M. 9/7/2010 n. 3887 - D.L. n. 43/2013)

**Tasks assigned and carried out**  
Final design

**Cost** € 21.690.737,80

**Location** C.da Timpazzo - Gela (CL)

**UTM Coord. (Zone 33S)** 439,794 E - 4,113,270 N

**Site area** 43.000 m<sup>2</sup>

**Shed surface** 11.300 m<sup>2</sup>

**Design level** Final design

**Designing period** 2014

## TECHNICAL DATA

**Operations according to Encl. B and C referring to Part IV of Law Decree No. 152/06 (D.Lgs. 152/06) and further amendments** D8, D9, D14, D15, R3, R4, R5, R13

**Potential capacity** 60.000 t/y;  
35.0 t/h

**Treatment lines** Mechanical  
**Pretreatment** two lines of screening at 300 mm - shredding - double screening (130 mm and 100 mm) - ferrous and nonferrous metals recovery - paper recovery - plastic recovery - recyclable materials pressing

**Biological treatment** aerobic stabilization of under screen materials (nine tunnels, dimensions 8 x 40 m each)

### ACCESSORY EQUIPMENT

**Air treatment** 320.000 Nm<sup>3</sup>/h

**Air treatment system** four wet scrubbers and one biofilter (partitioned into four sections)

**Total biofilters surface** 2.560 m<sup>2</sup>

### Future developments

**prediction** final shredding section for RDF; final shredding section for biostabilized materials; high-quality compost production from organic fraction by separate collection.