

PROVINCIA DI NUORO

Osini (NU) | Italia

COMPOSTING PLANT



THIS COMPOSTING SYSTEM **REALIZED AND MANAGED FOR TEN YEARS BY ENTSORGA**, ALLOWED TO ESTABLISH A REAL LIFE CIRCULAR MODEL THAT RECYCLES RESIDENTIAL AND COMMERCIAL ORGANIC WASTE TO PRODUCE HIGH QUALITY COMPOST FOR THE LOCAL FARMERS. **THE MODULARITY OF THE SYSTEM** ALLOWS MANAGING HIGH FLUCTUATIONS OF VOLUMES PROCESSED DUE TO SEASONALITIES IN TURISM AND AGRICULTURAL PRACTICES.

PLANT GENERAL INFO	
Company	Provincia dell'Ogliastro
Capacity	7,000 TPA
Treated waste	Commercial and Residential organic waste
Final Output	High Quality Compost
Start up	October 2005
Plant type	Composting
Population Served	Up to 90,000
Employees	4

COMPANY

All the municipalities of the Ogliastra region, coordinated by the Province, have partnered to build a composting plant in Quirra.

PROJECT

Entsorga was awarded with an **EPC contract** to build a composting plant in Quirra-Osini. The area and the project were strategically selected to provide a close loop for the community, recycling organic waste, and producing a quality compost suitable for use in the surrounding agricultural areas.

SOLUTION

The plant biogenically processes **source separated residential and commercial food waste and green waste** from the municipalities in the Ogliastra region. Today its potential capacity is 7,000 t/y, of which 5,200 t/y of food waste, 1,200 t/y of green waste and 600 t/y of recycled bulking agent. The plant started operations in **2005** and for ten years it was directly managed by Entsorga Italia.

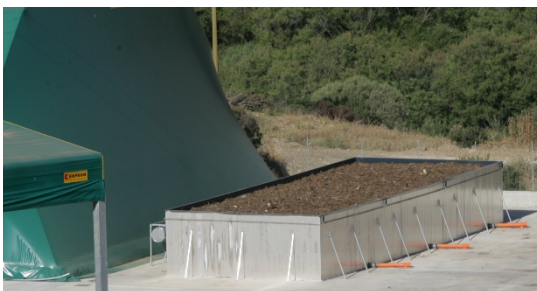
PROCESS

The process starts by mixing the organic waste with a lignocellulosic material in a mixer: the material is then ready to be **aerobically processed**. The process takes place in enclosed reactors (2 **Coccinelle™ modules** and 4 insufflate plates) (1), where the reaction is accelerated through a forced ventilation system, monitoring air, temperature and humidity with a **high level automation (2)**. The enclosed processing also allows a highly effective control of odors, thanks to the use of **patented biofilters (3)**. After about 40 days the stabilized mix is refined with a screening system to eliminate the non-compostable parts (aggregates, plastics, glass, ...) and is then sent to the 2 **Turtle Q-Ring™ biocells (4)** for maturation and storage. After 90 days, the compost is ready to be used.

(1) COCCINELLE™ FOR AEROBIC PROCESSING



(2) FORCED AERATION SYSTEM



(3) BIOFILTER



(4) TURTLE Q-RING™ FOR MATURATION AND STORAGE

USED TECHNOLOGIES

The plant uses the Entsorga proprietary technologies: **Turtle Q-Ring™**, **Coccinelle™**, **Biofilter**.

FINAL PRODUCT

The final result of the process is a **high-quality, biologically stable compost called "The land of Ogliastra"**, which is used by local farmers. The use of compost in agriculture is considered in itself of **high ecological value**, incentivized by the local DEQ because it enriches soil with organic matter and helps the progressive accumulation of carbon (*carbon sink*), contributing to contrast desertification. Composting also contributes to progressively reducing the landfill disposal, and to reduce methane emissions and other harmful GHGG.



STRENGTHS

- **reduction of landfill disposal** and **maximum recycling of organic fractions**
- **environmental compatibility**: no odors or dust are released in the surroundings. All operations are confined in an enclosed and slightly depressurized environment.
- **reduced labor costs**: complete plant automation reduces access to waste treatment areas, protecting health and ensuring operator safety.
- **low energy consumption** thanks to the use of **high efficiency equipment (overhead crane)**.