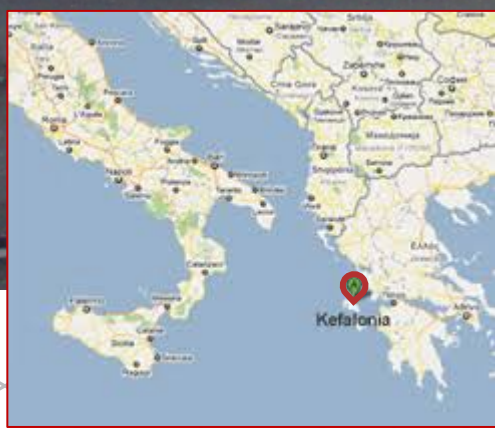


# ITHAKI S.A.

Island of Kefalonia | Greece

**MBT BIOSTABILIZATION PLANT**



THANKS TO TURTLE Q-RING™ BIOCELLS DESIGNED BY ENTSORGA, THE ISLAND OF KEFALONIA IS ABLE TO HYGIENIZE UNSORTED MUNICIPAL SOLID WASTE, STABILIZING IT BEFORE LANDFILL DISPOSAL. A CONVENIENT AND ENVIRONMENTALLY FRIENDLY SOLUTION THAT ALLOWED THE TOWN TO RESOLVE THE PROBLEM OF WASTE IN AN EFFICIENT AND SAFE MANNER, DRASTICALLY REDUCING RELATED GREENHOUSE GAS EMISSIONS.

#### DATI IMPIANTO

Company	ITHAKI S.A. (100% partecipata da MESOGEOS S.A.)
Yarly Capacity	25.000 tpa
Waste	Unsorted Municipal Solid Waste
Final Product	Compst like Stabilized waste
Start up	July 2007
Plant	MBT and Biostabilization
Population served	36.000 residents

## COMPANY

**ITHAKI S.A.** is 100% owned by the **MESOGEOS Group**, leader in Greece in the field of environmental solutions. The company's core business are water, wastewater and solid waste, as well as renewable energy production and energy efficiency. In addition to Greece, MESOGEOS also operates in Cyprus, Romania, Azerbaijan, Albania, Croatia, Montenegro.

## PROJECT

The Consortium of Kefalonia has awarded ITHAKI S.A., which has commissioned Entsorga with the **design, construction and six months of testing** of the MBT biostabilization plant for the management of solid waste on the island.

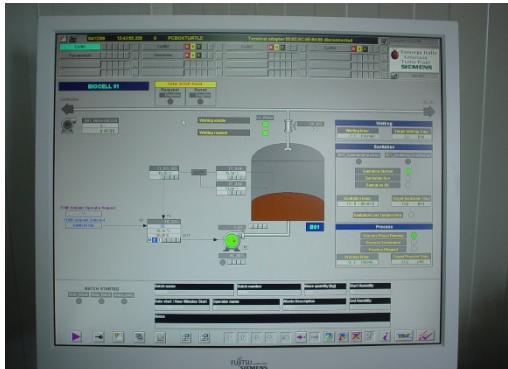
## ENTSORGA'S SOLUTION

Entsorga has supplied a **bio-stabilization plant** for the island's waste processing needs, reducing the total volume of waste and stabilizing it before disposal. The core of the solution is the **biological treatment of the organic fraction**, which allows an efficient recovery and re-use as a daily cover in landfills.

## PROCESS

Municipal Solid Waste, is first weighed and inspected, and then sent to a pre-treatment system, where it is shredded and then screened, to separate the dry fraction from the wet fraction, to be used for aerobic biological treatment. The bio-oxidation of the organic part takes place in a closed and modular system formed by 4 Turtle Q-Ring™ biocells (1) where, for about 15 days, thanks to a forced aeration system (2) the natural degradation of the material is accelerated. This allows decreasing substantially water content, reducing waste volumes by approximately 35%. The whole process is managed automatically by a control system (3), which monitors the data and optimizes the air flow to be supplied to the biomass.

(1) **BIOCELLS WITH Q-RING™ BREATHABLE FABRIC** FOR ACCELERATED BIOSTABILIZATION OF WASTE



(2) **FORCED AERATION SYSTEM**

(3) **24/7 AUTOMATIC CONTROL SYSTEM**

## FINAL PRODUCT

The result is a stable waste, the CLO (Compost Like Output), suitable for the daily coverage of the landfill, in compliance with the most recent European standards.

The biostabilization process, allows biodrying and "sanitizing" putrescible part of unsorted municipal waste (MSW), and makes it possible to reduce biogas and leachate emissions, benefiting the environment.

## STRENGTHS

- **reduced environmental impact:** odors and dust are kept inside the processing area. The biological treatment phase takes place in a closed environment and the semi-permeable membrane Q-Ring™ eliminates the odorous molecules emitted by the waste during treatment, without the need of a biofilter.
- **reduced opex and labor costs** thanks to the complete automation of the plant
- **maximum safety and minimum health impact for the operators**, who are not exposed to process air, dust and any polluting agents
- **low energy consumption** thanks to the optimization of the airflows performed automatically by the control system.

## TECHNOLOGIES USED

The plant uses Entsorga's proprietary technologies: Turtle Q-ring™ and the Control System.