

## TWT EXPERIENCE

Customer	<b>ECOFAN • Cerignola (SOUTH ITALY)</b>
Sector	<b>HOSPITAL WASTE/THERMAL TREATMENT PLANT - CSS PRODUCTION</b>
Plant	<b>MULTISTAGE WET TREATMENT</b>

### BACKGROUND

The company treats hospital waste by physical and thermal processes. Originally, two scrubbers were operating in parallel to treat a flow of 8,000 m<sup>3</sup>/cad. As part of an improvement in the production process, **the customer requested an efficiency upgrade of the facility to comply with the dust and odour emission limit.**

### PROBLEM STATEMENT

In the air sucked in, **there was a very high value of light solid particles consisting of fluff, non-woven fabric, glove shreds, volatile microplastics and paper and cardboard fibre.**

These products have an intrinsic lightness that, with the condensation of water vapour, led to a high degree of fouling of the two installed scrubbers, with **the need for very frequent internal cleaning (2-3 weeks).**

**The aim of the new equipment was to increase treatment efficiency and reduce maintenance activities.**

### APPROACH

Without prejudice to the need to comply with the emission limits, in agreement with the company's environmental consultant, **a study was carried out on the chemical analysis of the air in play, the fluid-dynamic analysis of the existing suction systems, and the evaluation of better-performing and/or alternative technological solutions,** with a view to guaranteeing much longer maintenance times in compliance with the sector's BATs.

### PLANT

**Multi-stage system capable of treating all the air that is the subject of the problem with a single device.**

### TECHNOLOGY

The two inlet lines were equipped with dampers to partition the air inflow and were then connected and placed in series towards a single garrison.

After a pre-treatment to remove and segregate solid particles, the effluent was sent to the actual wet treatment.

**Thanks to the 5-stage technology, the air is washed five times with an ever-cleaner aqueous solution to ensure complete removal of chemical pollutants and especially odours.**



## TWT EXPERIENCE

Customer	<b>ECOFAN • Cerignola (SOUTH ITALY)</b>
Sector	<b>HOSPITAL WASTE/THERMAL TREATMENT PLANT - CSS PRODUCTION</b>
Plant	<b>MULTISTAGE WET TREATMENT</b>

The existing activated carbon plant located downstream of the new presidium is left with only the safety function, especially during maintenance of the presidium itself.

This technological choice allows for important treatment flexibility as all stages can be managed autonomously according to the compounds present in the emission.

**Furthermore, the pre-treatment has been designed 'ad-hoc' according to the type of solid particles present precisely to allow for maximum efficiency of the subsequent stages.**

## INSTALLATION

The recovery and reuse of the existing space where the new plant is to be located allowed economies of scale and the maintenance of the existing production logic, with a reduced plant downtime that did not last longer than two weeks, thanks to the perfect synergy of interventions agreed with the client.

## MONITORING

Following the installation, chemical and olfactometric analyses were carried out which showed significant efficiencies, allowing compliance with emission limits.

## RESULT • YIELD

Maintenance activities remained in **TECNOIMPIANTI's** charge for two years to guarantee compliance with the promised performance both in terms of abatement and reduction of maintenance interventions.

**Chemical and olfactometric analyses performed after installation showed a yield with average values around 90%.**

