

MODELING AND RATIONALIZATION OF WATER USE IN INDUSTRY

Innovations and Benefits - A specific methodology for the definition of optimal water treatment and reuse strategies in industrial processes has been developed. The methodology is divided into several steps:

- characterization of primary water sources available
- characterization of the effluents of the main production processes
- identification of treatment technologies
- assessment of effluent treatability by carrying out laboratory-scale tests
- conduction of pilot-scale treatment tests in order to assess the quality obtainable and the technical-economic feasibility of real-scale application
- execution of re-usability tests of the effluents treated in the production processes of the company
- assessment of biodegradability and toxicity of effluents not suitable for reuse
- definition of possible water reuse scenarios through flowcharts and mass balances
- selection of the best scenario through cost and benefit assessment.

Uses - Any company wanting to reduce its "primary" water consumption and / or minimize the amount of effluent produced can benefit from the application of the methodology, especially in the textile sector and other sectors with high water requirements such as paper, tanning and food, and especially companies located in areas with scarce water resource availability.

Past and Present Activities - Development of the methodology for minimizing impacts related to the use of water resources in the textile industry (TOWEF Project).

Study and application of the methodology in three European companies (AquaFit4Use Project).

Comparison with other industries (Accompanying Measure PATANTEX).

Application of the methodology, realization and start-up of the full scale reuse system in Italian textile company (BATTLE Project).

Innovative procedures and technologies for planned and integrated management of water resources, energy optimization and quality control in the Integrated Water Cycle (AQUASYSTEM project).

