



MED TEST Case Study

TEXTILE sector — TUNISIA

GARTEX

Company overview

GARTEX is a jeans production and bleaching company fully focused on exports. The company has a working capacity of 2,800,000 items per year. It carries out washing and special treatment processes.

At the start of MED TEST, the company was already certified ISO 14001 but was aware of a lack of know-how in resource management and implementation of good environmental practices.

Thus, its participation in the project allowed the company to revise its environmental policy in order to integrate the concept of clean production and to enrich and implement its action plan.

Presently, the company is oriented towards the use of the most eco-friendly chemical products so as to adopt the Oeko-Tex STANDARD 100.

Benefits

The MED TEST project has recorded net annual savings amounting to \$US 67,200 from electricity, gas, water, and chemical product consumption with an estimated investment of \$US 76,200. The pay-back period is estimated between 5 and 18 months.

Energy costs have been reduced by 15% installing an economizer at the boiler, leading to the recovery of heat from the boiler emissions through a heat exchange with water, and by the use of machinery monitoring systems.

Water costs have decreased by 19% through implementing a rinse water recovery and reuse system, as well as monitoring systems.

Chemicals costs have been reduced by 11% introducing a machinery monitoring system and a chemicals



“Our ISO 14001 certification cannot fully respond to our expectations in terms of resource saving and environmental protection. For us, the MED TEST integrated approach is more complete and effective.”

Nabil BEN HAMMOUDA, Washing Department Manager

management system in terms of storage, maintenance and handling.

Other environmental advantages have been achieved by revising the environmental policy and integrating the clean production concept, by identifying new significant environmental aspects such as preventive maintenance, water and energy recycling, as well as orientation towards the use of eco-friendly chemical products. Thus, new work procedures were installed such as chemicals management and comparative monitoring of water, energy and chemicals consumption.

A measuring and monitoring system for water, electricity, gas and chemicals consumption is being implemented in the washing department, with a benchmarking tool, in order to control consumption and follow up performance indicators.

MED TEST is a UNIDO green industry initiative to promote sustainability and competitiveness in the private sector in Egypt, Morocco and Tunisia. TEST integrated approach includes tools like resource efficiency and cleaner production, environmental management system and accounting, cleaner technology transfer and CSR.

Learn more about TEST approach at www.unido.org

MED TEST is sponsored by the Global Environment Facility, the Italian Government and the MedPartnership.

Saving opportunities

Measure	Economic key figures			Resource savings per year	
	Savings [USD/yr]	Investment [USD]	PBP [yr]	Water, Chemicals	Energy [MWh]
Recovery of rinsing water of washing unit	12 800	15 700	1.3	Water: 11,250 m ³	-
Boiler, economizer	18 400	25 000	1.4		930
Management of dyes and chemical products	11 000	5 500	0.5	Chemicals: 5%	
Usage of washing machine monitoring system	25 000	30 000	1.2	Chemicals: 6% Water: 3,500 m ³	162
TOTAL	67 200	76 200			1 092

Recovery of rinsing and washing water: The AVANTEC washing machines are equipped with double water exits. This option facilitates the implementation of a system for reuse of rinse water, which requires the installation of gutters wired to the washing machines, pipes from the gutter to the recovery basin with a 60 m³ capacity, a return pipe (equipped with branching system) leading back to the machines as well as water pumps in the retrieval and supply blocks. The quantities of reused water amount to 11,250 m³/year.

Boiler, economizer: The temperature of air emanating from the boiler is very high and can be used to heat water over the installation of water/air heat exchangers or economizer at the exits. The annual gas consumption amounts to 545 TEP/year, and the installation of the economizer will allow for savings of 930 MWh/year.

Management of dyes, chemicals etc: The management and reorganization of the storage facilities for chemical products has been achieved thanks to the processing of technical forms and Safety Data Sheets, to a purchasing policy that takes into

account the ecological characteristics of products when choosing among similar products, and to the application of best practices regarding the compatibility of products when stored and of necessary precautions such as retentions to prevent leaks and compliance with height standards in storage.

A system for monitoring product consumption was implemented in the storage areas and procedures for handling and maintenance were developed and applied. These changes have resulted in 5% savings of chemical products.

Use of washing machine monitoring system (advanced programming options): The washing machines have programming systems that are set manually by the machine operator. The advanced programming consists in establishing general washing and drying programmes and adding subprogrammes for facilitating adjustments, thereby eliminating manual interference and reducing error risk. The achieved gains concern time of process, now reduced by 25%, water consumption (3,500m³/year), thermal energy (162 MWh/year) and chemical products (6%).



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