



MED TEST Case Study

TEXTILE sector — MOROCCO

Textile finishing — ECOLORENTEL

Company overview

Ecolorentel is a medium size, textile company, located in the industrial area of Moghora in Tangier. It specializes in dyeing, jeans washing and special effects in fabrics. The company is a joint-venture between Moroccan and Spanish shareholders. It employs 400 people and has an average turnover of \$US 8.5 million.

The company joined the MED TEST project in order to identify opportunities for effective use of resources (water, energy and chemicals), reducing production costs, and minimizing waste in particular liquid effluents.

In addition, the company has shown interest in setting up a wastewater treatment plant. The company has not implemented a management system (including environmental). This is one of its medium-term objectives.

Benefits

The actions identified in the MED TEST project will enable the company to achieve an annual gain of about \$US 242,041 through savings in energy (electrical and thermal), water and chemicals with an estimated investment of \$US 324,327, resulting in a payback period of 16 months. Over half of the actions (66%) were performed in 2011, with the remainder scheduled for 2012.

Energy savings correspond to approximately 7% of the current annual energy bill (electricity and fuel). The annual consumption of water will be reduced by about 4% through changing water intense processes with more rational ones, recycling of process water and recovery of steam condensate.



“Our experience participating in the MED TEST project is very positive. The technical assistance received helped us to sensitize our staff and to comply with environmental norms and environmental requirements of our international customers.”

Mohamed CHAKER, General Manager

To improve its environmental performance, the company has installed ozone technology for jeans washing, with no wastewater discharges, has modified the permanganates spraying unit and has replaced the sand blasting with a laser process.

These actions will generate substantial savings especially for chemicals, in addition to reducing the environmental impact generated by the use of these products.

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]
Boiler and steam system	43 263	16 000	0.4	Water: 4 093 m ³	982
Electrical system, compressors and lighting	8 935	23 952	2.7		63
Washing with ozone	26 551	125 000	4.7	Water: 3 750 m ³	
				Chemicals: 43 tons	
Chemicals management	31 666	18 750	0.6	Chemical product: 9.7 tons	
Process change: sand blasting and finishing	131 625	140 625	1.1	Sand: 180 tons	
TOTAL	242 041	324 327	1.3		1 045

Electrical system, compressors, lighting: The company has established a set of actions to reduce the energy consumption such as: increasing power factor, optimization of the site lighting, and the introduction of inverters on air compressors motors. For compressed air: the repair of air leaks, the establishment of an air tank and the installation of a distribution system with pressure gauges and valves. These actions will reduce the annual consumption by about 63 MWh.

Production system and distribution of steam: Several measures were identified including: the insulation of hot surfaces, the recovery of steam condensate, the optimal regulation of the boiler, and drying indirectly with steam. An option is being considered to recover the heat from hot baths discharge. The total savings is estimated at 982 MWh and \$US 43,263.

Washing with ozone: This is a new process that allows fading degradation of indigo by ozone instead of using the hypochlorite (extremely hazardous and aggressive acid). The advantage of this method is that it does not use water and chemicals, so therefore it does not generate liquid effluents, and its energy consumption is very efficient.

Process change: sanding and finishing. The company has changed some processes in the units for special treatments. Among these changes are:

Blasting unit: Ecolorentel has stopped using this technology due to environmental and health problems for the staff. New laser machines have replaced this old and not ecological technology.

Permanganate treatment unit (spray): The special treatment process with permanganate has been relocated outside the unit, emissions of permanganate are conveyed into a water film and recycled back to the process.

Chemicals management: Several actions have been implemented for better management of chemicals, including: The establishment of procedures for handling and weighing of chemicals, construction and development of a new laboratory for preparing and weighing the chemicals, optimization of the receipts at the laboratory before launching the production batches. Also the company has replaced some hazardous or toxic chemicals with biodegradable and less harmful products to the environment.



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