



MED TEST Case Study

## TEXTILE sector — MOROCCO

### Textile finishing — LAVESMA

#### Company overview

LAVESMA is a medium-size textile unit located in the Gueznaya industrial area in the south of Tangier and specialized in dyeing, jeans bleaching and special effects treatments. Founded in 2003, it employs 300 persons and has an average turnover of over \$US 5 million.

The company has joined the MED TEST project in order to identify opportunities to implement an efficient use of resources (water, energy and chemicals), reduce production costs and minimize waste, in particular liquid effluents.

Moreover, LAVESMA has shown an interest in setting up a wastewater treatment plant. Implementing a management system (including an environmental one) represents one of its medium-term objectives.

#### Benefits

Several identified actions will enable the company to achieve annual savings of \$US 474,615 in electrical and thermal energy, as well as in water and chemicals, with an estimated investment of \$US 250,911, corresponding to a 6-month payback period. Over half of these measures were implemented in 2011 and the rest are scheduled for Q1 2012.

Savings on steam distribution systems and electricity are estimated at \$US 265,876, which corresponds to a reduction of annual energy consumption by 27%. The actions taken to achieve this are detailed on the following page.

The annual consumption of water will be reduced through a hunt for leaks, water and condensate drains



**“Our participation in the MED TEST project has enabled us to implement resource efficiency, improve process productivity, achieving our strategic goals.”**

Mr Mohcine EL-JAMAL, General Director

recycling and the servo control of water softening unit feeding the boilers.

To improve its environmental performance, the company has also introduced several measures, including:

- Recovery and recycling of permanganate solution;
- Improved dosing of chemicals;
- Elimination of the sand blasting process;
- Improved management and handling of chemical products.

These actions will reduce the chemicals consumption by about 5%, and the associated 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](http://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]
Steam production and distribution system	252 200	56 650	0.2		1 920
Electrical system, compressors, lighting	13 676	13 812	1		145
Chemicals management	19 477	500	0.3	Chemicals: 22.65 tons	
Water and effluent reduction	3 962	1 875	0.5	Water: 3,400 m <sup>3</sup>	
Biomass boiler	185 300	178 074	1	Propane: 221 m <sup>3</sup>	
<b>TOTAL</b>	<b>474 615</b>	<b>250 911</b>	<b>0.5</b>		<b>2 065</b>

**Steam production and distribution system:** Several measures have been implemented by the company, including: insulation of hot surfaces, recovery of steam condensate, combustion control of the boiler burners, use of indirect steam for drying, heating of dyeing and bleaching baths. The company is currently studying the possibility of installing a heat exchanger to recover calories from machine outlet water for pre-heating the machine inlet water. All these measures will reduce the annual energy consumption by about 1,920 MWh.

**Electrical system, compressors, lighting:** The company has implemented a set of actions to reduce electricity consumption, including the optimization of lighting and of the contract power (after the power factor improvement); the company is also planning an energy management system. As for compressed air, measures include: repair of air leakage, installation of an air tank, and implementation of an air distribution network with insulation valves.

**Biomass boiler:** LAVESMA has installed a biomass boiler using olivepomace as fuel instead of propane. The boiler feed is automatic operating with a variable speed drive. This action has reduced the thermal energy annual bill by about \$US 178,074.

**Optimal chemicals management:** Several actions have been implemented for a better management of chemicals, including handling and weighing procedures, retrofitting of the chemicals weighing room, and optimization of the receipts at the laboratory before launching production batches. Moreover, the company has replaced some polluting chemicals by biodegradable and environmental products. Permanganate is now completely recycled, and the sandblasting treatment has been abandoned for reasons of personnel safety and environmental protection.

**Water saving and emissions reduction:** The following measures have enabled the company to reduce its annual water consumption by 3,400 m<sup>3</sup>: Elimination of water leaks, installation of water meters to better monitor consumption, recycling of water and steam condensate that are sent back to the boiler feeding tank, and servo control of water softeners to minimize water and resin losses.



**UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**  
 Environmental Management Branch  
 Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria  
 Telephone: (+43-1) 26026-0, Fax: (+43-1) 26926-69  
 E-mail: unido@unido.org, Internet: www.unido.org



**CENTRE MAROCAIN DE PRODUCTION PROPRE (CMPP)**  
 23 Boulevard Mohamed Abdou, Quartier Palmiers, Casablanca, Morocco  
 Telephone: (+212) 5 22 99 70 53, Fax: (+212) 5 2 29 815 31  
 Email: cmpp@cmpp.ma, Web: www.cmpp.ma

