

As part of the SwitchMed programme, UNIDO supports industries in the Southern Mediterranean through the transfer of environmental sound technologies (MED TEST II) to become more resource efficient and to generate savings for improved competitiveness and environmental performance.

Tunisia

SITEX

Textile sector

Context

Number of employees: 700

Key products: Denim sportswear

Main markets: International

Management standards: OEKOTEX

Active in the textiles and clothing sector, SITEX is a fabric spinning, weaving, dyeing and finishing business for denim sportswear.

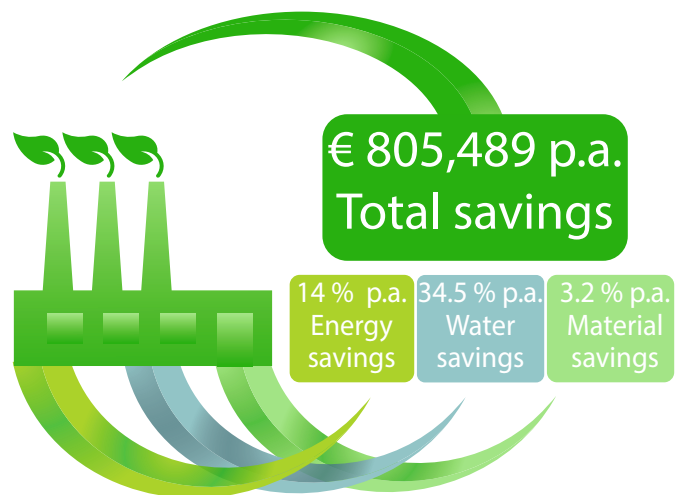
The company is located in Ksar Hellal, Tunisia, and its main products and brands comprise denim sportswear for various international brand names. SITEX is completely dedicated to the export market.

As part of the MED TEST II project, it has benefited from initial steps in the implementation of the ISO 14001 version 2015 standard.

“Aware of the importance both of our environmental and economic performance as well as our customers’ expectations, SITEX took this opportunity to participate in the MED TEST II project in order to identify new ecologically rational solutions and develop our capacity in terms of sustainable production ”

Mohamed Touzi
Chairman and CEO

Benefits



Graphic: UNIDO

As part of the MED TEST II project, the application of an RECP approach has led to the identification of total annual savings worth EUR 805,489, particularly in energy, raw materials and water, versus a total investment of EUR 1,102,479. The return on investment term varies between 1 and 4 years. Water, energy and raw material consumption were reduced by 34.5%, 14% and 3.2% respectively.

All of the projects will enable an improvement in the company’s environmental performance by reducing CO₂ emissions by 17 %.

25% of the measures identified were accepted and approved by the manager, and the company has begun implementation. 75% of the remaining projects have been retained for further study.

Saving opportunities¹

Action	Economic key figures			Resource savings & Environmental impacts per year		
	Investment euro	Savings euro / Yr.	PBP Yr.	Water & Materials	Energy MWh	Pollution reduction
Acquisition of new innovative technologies	565,218	440,000	1.3	10 t chemical products 24,092 m ³ water	1,513	Total: 3,775 t CO ₂ 19 t COD
Recycling of wastewater and substitution of chemical products	206,522	48,696	4.2	5 t acids 120,000 m ³ water	-	
Energy efficiency optimisation	330,739	316,793	1.1	-	9,270	
TOTAL	€ 1,102,479	€ 805,489	1.4	15 t raw materials 144,092 m³ water	10,784 MWh	

¹ Numbers based on production value from 2014

Acquisition of new innovative technologies

This involves the acquisition of a continuous jeans leaching machine (ozone treatment). This innovative process will enable a reduction of approximately 90% of the water used in jeans leaching, and 65% of the energy consumption associated with the same task. It will also enable a reduction in the use of chemical treatments, eliminate the use of permanganate as well as totally do away with chemical waste discharged into the wastewater. Chemicals will be reduced by approximately 10 t per year.

The acquisition of a complete installation for the capture and storage of the CO₂ generated by combustion in the boiler will permit a reduction of 394 t of CO₂ released into the atmosphere. The captured CO₂ will be injected into the wastewater bio-treatment plant, and hence save on the cost of purchasing CO₂ and other chemicals, i.e. EUR 113,930 per year.

Recycling of wastewater and substitution of chemical products

The quality of SITEX's STEP discharge wastewater is good enough to be recycled, and reused in the various stages of the production process, which justifies the potential for treating and recycling this water, through the acquisition of two parallel filtration and osmosis lines to prevent breaks, which will ensure the continuity of the recycled water treatment process. The quantity of recycled water will be approximately 120,000 m³ per year.

With regard to the substitution of chemicals, the remainder of the recovered CO₂ (previous project: acquisition of new innovative technologies) will be used to neutralise the PH in certain textile treatment processes, and will be injected into the neutralising baths of the continuous cable or fabric treatment machines, taking into account the fact that it is a weak and low-polluting acid, resulting in a reduction in acids of approximately 5 t per year.

Energy efficiency optimisation

This is a set of projects involving the installation of lines, the replacement of drains, the verification of combustion, the installation of electronic speed controls at the STEP stage, the replacement of fluorescent tubes, the introduction of an energy treatment system, the optimisation of the compressed air with the installation of a compressed air flow meter with electronic transmitters, all of which will enable us to save 9,270 MWh per year.

"We believe that the TEST methodology has helped us to strengthen our working culture and to identify the causes of losses and environmental impacts. The economic and environmental impacts are more palpable now and also have an impact on the company's brand image and consequently on our customers. SITEX will consolidate this approach"

Mohamed Touzi
Chairman and CEO

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