

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

Compagnie Industrielle de Tricot Tunisien (CITT) Textile sector

Context

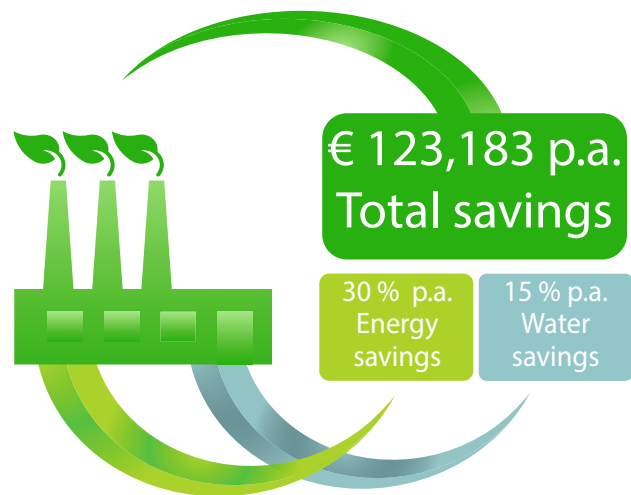
Number of employees:	20
Key products:	Fabrics for leisure clothing for various brands including own line of brands
Main markets:	Local and international
Management standards:	GOTS, OEKOTEX

An active player in the textile and clothing sector, Compagnie Industrielle de Tricot Tunisien (CITT) is a fabric dyeing and finishing business, mainly for 100% cotton and poly-cotton fabrics. The company is located in the Charguia Industrial Zone, in Tunis, Tunisia. Its products are mainly sold on the local market, although approximately 10% of its products are exported.

“In the face of an ongoing fierce price competition, we must monitor and control our costs, and the MED TEST II project is intended to reveal our hidden costs and direct us towards significant areas of savings.”

Moez Lidinelleh Bouzouita
The Manager

Benefits



Graphic: UNIDO

The application of an RECP approach as part of the MED TEST II project has led to the identification of total annual savings of EUR 123,182, particularly in energy and water, versus a total investment of EUR 147,191. The payback period of the identified RECP investments varies between two months and three years.

Energy and water costs have been reduced by 30% and 15% respectively.

All of the projects will help to improve the company's environmental performance, by reducing CO₂ emissions by 49%, and by reducing the pollutant load of liquid waste by 34% compared to the baseline year.

The majority of the identified tasks (81%) were accepted and approved by the Management, and the company set about implementing these immediately; the remainder (19%) of the tasks will be retained for further study. CITT's development strategy includes the tracking of its non-produced outputs (NPO) thanks to the MFCA tool, and is continuing the TEST team's progress with rigorous tracking of the various data relating to chemical and auxiliary products as well as consumption invoices for energy and water, covering the dyeing department only.

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
Optimisation of production and automation system for dyeing machinery	39,130	50,256	0.8	900 m ³ water	90	Total: 527 t CO ₂ 0.6 t BOD ₅ 1.5 t DCO
Installation of a humidity control system, KRANTZ hydro extractor	10,869	4,565	2.3	-	106	
Energy efficiency optimisation	30,613	42,595	0.7	2,653 m ³ water	1,946	
Process water consumption optimisation	66,579	25,766	2.6	1.2 t chemical products 1,960 m ³ water	-	
TOTAL	€ 147,191	€ 123,182	1.2	1.2 t raw materials 5,513 m³ water	2,142 MWh	

¹ Numbers based on production value from 2014

Optimisation of production and automation system for dyeing machinery

Optimisation of the production management system through the implementation of an information system for traceability and the tracking of material flows, from acceptance of raw materials through the various processing stages. Annual savings are estimated to make up 1% of the turnover.

Automation of the dyeing machinery consists of reorganising the operating programs for the dyeing machines based on the different materials and processes. This measure enables a reduction in processing times, i.e. an approximate reduction in energy consumption of 2% and in process water consumption of 3%, as well as an improvement in productivity and a reduction in the number of reject items.

The installation of additional trays on the dyeing machines is intended to prepare the baths for multiple dyeing stages, in order to save filling and heating time, which is estimated to make up 10% of the total duration of the process.

Installation of a humidity control system, KRANTZ hydro extractor

This involves returning the hydro extractor's humidity control system to operation, or acquiring a new unit to optimise the operating speed as a function of the drying rate. Gains are estimated at 20% of an extractor's thermal energy, or in other words, gas savings of 10,000 Nm³ per year.

Energy efficiency optimisation

Amongst the proposed tasks figure the installation of divisional counters and the introduction of an energy data acquisition and management system; the thermal insulation of the steam circuit, the replacement of the existing lighting system, and the repair of compressed air leaks, which will enable cumulative annual electrical energy savings of 156,838 KWh, and gas savings of 155,434 Nm³. The introduction of an energy and water tracking system makes it possible to reduce reworking rates, i.e., to achieve water savings of up to 5% of total consumption, estimated at 2,653 m³.

Process water consumption optimisation

This task consists of reusing the bleaching bath on a single machine, which also enables passage times to be shortened, and hence savings both in terms of water consumption as well as in terms of a reduction in chemical products (oxygenated water, caustic soda and stabiliser).

"We believe that the methodology applied has helped us to strengthen our group working culture in order to identify the causes of losses and environmental impact. The gains resulting from these measures are beginning to make themselves felt, and we intend to continue this improvement process by introducing the TEST approach to the rest of the group"

Moez Lidinelleh Bouzouita
The Manager

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