MED TEST II Case Study

switchmed

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

MISFAT

Mechanical sector

Context

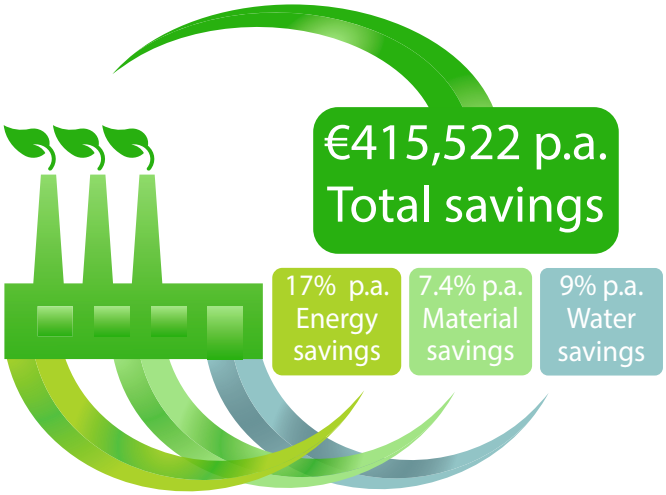
Number of employees:	1,000
Key products:	Air and fuel filters
Main markets:	European and local markets
Management standards:	ISO 9001, ISO/TS 16949, ISO 14001, OHSAS 18001

The Compagnie Tunisienne des Filtres – MISFAT – is a business which specialises in the manufacture of air and fuel filters for motor vehicles, and is located in the JEDEIDA Industrial Zone, in the Governorate of Manouba. The company has an annual production capacity of approximately 16 million filters. 20% of the company's production is intended for the local market and 80% for export, with its products reaching 95% of the European market for filtration and a customer base in almost 60 countries. The company's main customers are the various automobile brands.

"Our company, MISFAT, has for many years now included environmental considerations in our investments and products, and the MED TEST II project complements and strengthens our commitment to continuous improvement in terms of the preservation of the environment and sustainable development "

Mohamed Guermazi
CEO

Benefits



Graphic: UNIDO

The MED TEST II project identified ten RECP measures, of which the company has decided to implement 90 %. The project is expected to generate total annual savings of approximately EUR 415,522 in energy, water and raw materials and operating costs, against a total investment of EUR 698,614 (EUR 1 = 2.8 dinars). The average return on investment term is 1.7 years.

Energy consumption has been reduced by 17%. The benefits derived from raw material resource and operating savings are estimated at approximately 7.4%. Water savings comprise 9% of annual consumption. Further environmental advantages have been achieved, with a reduction in water pollutant levelsof 100 kg/year of BOD_5, and913 kg/year of COD. Moreover, CO_2 emissions were reduced by 683.7 t, or 16% of total CO_2 emissions.

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INDUSTRIAL DEVELOPMENT ORGANIZATION

SwitchMed is funded by the European Union

Saving opportunities[1]

Action	Economic key figures			Resource savings & Environmental impacts per year		
	Investment euro	Savings euro / Yr.	PBP Yr.	Water & Materials	Energy MWh	Pollution reduction
Improvements to powder-coating and surface treatment processes	55,400	92,300	0.6	11.7 t powder and oil	20	Total: 684 t CO_2 30 kg Solid waste 100 kg BOD_5 913 kg COD
New pre-treatment technology using nano-ceramic conversion instead of the phosphating process	0	10,000	Immedi-ate	112 m^3 water	137	
Acquisition of a new paint line	600,000	250,000	2.4	1,000 m^3 water 9 t powder and additives	216	
Energy efficiency optimisation	43,214	63,222	0.7	-	756	
TOTAL	**€ 698,614**	**€ 415,522**	**1.7**	**21 t raw materials 1,112 m^3 water**	**1,129 MWh**	

1 Numbers based on production value from 2015

Improvements to powder-coating and surface treatment processes

Improvements to the white powder coating and Black and blue ink cabin facility consisted of replacing the three cabins with only two plastic cabins (with "sandwich" walls): one for white powder coating, and one for darker inks. The cabins will be equipped with a powder tank for each ink with constant level detection, and automated continuous powder transfer to a sieving unit (granule removal, no manual refill and no dust). On the other hand, the improvements to the surface treatment tunnel consist of implementing a water/oil separation centrifuge, installing a larger pre-degreasing vat (4000 - 6000 l) and ensuring cable guidance for the components. Given that the phosphating furnace loses heat at both its entry and exit, a pressure loss is planned in order to limit the pressure exerted by the hot air. This will be achieved by limiting heat loss by means of a SAS using a blanking cover whose height can be adjusted based on the type of component.

New pre-treatment technology using nano-ceramic conversion instead of phosphating process

This initiative consists of replacing phosphating with nano-ceramic conversion, a replacement which mainly affects used materials, through the substitution of phosphate with nano-ceramic layers; the advantage being that the latter consume less energy and water resources without any change in equipment.

Acquisition of a new paint line

Given the constant increase in annual production, and in order to achieve better economic and environmental performance, it has been agreed to acquire a new paint line equipped with the best technologies available. Production will proceed with the joint use of the two paint lines.

Energy efficiency optimisation

The main identified energy efficiency measures were: The acquisition of an energy monitoring system and the installation of an ISO 50001-compliant energy management system, the optimisation of compressed air consumption (repair of leaks on the compressed air circuit and on the different production machines, personnel and mode of use check training in the various workshops), and the optimisation of the lighting system.

"The MEDTEST II project has allowed us to implement a large number of measures which are beneficial to the environment with considerable economic gains. This simply sustains and consolidates the company's strategy in terms of sustainable development"

Imed Ellouze
QSE Director

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