

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

EL FELLAH

Food sector

Context

Number of employees:	50 full-time / 90 seasonal
Key products:	Tinned fruit and vegetables (Tomato concentrates, harissa, jams, etc)
Main markets:	Local
Management standards:	ISO 22000, ISO 9001

El FELLAH was established in 1986, and operates in the food sector from its base in Tekelssa, Governorate of Nabeul. It is active in the production and the marketing of canned fruit and vegetables. The company produces 6,500 tonnes of finished products annually and distributes its products on the national market. At the start of the MED TEST II project, the company was already ISO 9001:2008 certified. In 2017, it received ISO 22000 certification: 2005.

“As a result of an increase in the cost of utilities, raw and ancillary materials, we wanted to more effectively control our production costs, particularly for energy and products, in order to be more competitive on the market; the approach of this project helped us a lot.”

Slah Charf
Manager

Benefits



Graphic: UNIDO

The MED TEST II project has identified total annual savings of EUR 192,497 resulting from energy and raw material savings with a total investment of EUR 252,856. The return on investment term varies between one and four years. The company's management have decided to implement 82% of the measures identified (17).

Resource savings will be approximately 21.7% for energy and 0.4% for raw material purchases, through the implementation of RECP measures. The environmental benefits include a 21% reduction in CO₂ emissions, a 4% reduction in the generated solid waste, and a 36% reduction in the used water volume .

Encouraged by the results of the TEST project, the company intends to implement an environmental management system in accordance with ISO 140001 and to integrate the MFCA tool in the corporate accounting system.

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 manufacturing processes	720	60,000	Immediate	186 t raw materials	-	Total: 1,095 t CO ² 69.100 m ³ waste water 65 t solid waste
Thermal energy consumption optimisation	206,800	63,640	3.2	2,594 m ³ water	1,336	
Electrical consumption improvement	13,336	16,857	0.8	-	35	
Water savings	8,000	0	-	68,700 m ³ water	159	
Energy management	24,000	52,000	0.5	-	2,042	
TOTAL	€ 252,856	€ 192,497	1.3	186 t raw materials 71,294 m³ Water	3,413 MWh	

¹ Numbers based on production value from 2015

Optimisation of manufacturing processes

The tasks identified in this area involve (1) the modification of the thermal treatment based on the format, (2) the treatment of the boxes with an anticorrosion solution at the end of the line.

The first task will result in a reduction in energy consumption and an improvement in the sensory quality of the finished product, while the second task will enable a significant reduction in the losses of finished products (65 tonnes) and packaging, as well as a 4% reduction in the generated solid waste.

Thermal energy consumption optimisation

A number of tasks have been defined with a view to enabling the optimisation of steam consumption: (1) The substitution of heavy fuel oil with natural gas (2) The introduction of reverse osmosis (3) The optimisation of the steam installation thanks to the insulation of pipes and valves, the recovery of a quantity of condensate and leak detection (4) Rinsing the boxes prior to sterilisation.

All of these tasks will reduce thermal energy needs by 8%, or 1,336MWh.

Electrical consumption improvement

The main measures involve (1) The optimisation of the industrial refrigeration installation; (2) The optimisation of the power factors of the two transformers; (3) The optimisation of the lighting installation; (4) The optimisation of the compressed air installation and (5) A review of the required manpower.

Water savings

This measure involves the re-use of clean water lost during certain processes, such as pumps running empty and overflowing water towers. The recovered water is used to transport tomatoes at the height of the hydraulic discharge section. This measure has enabled the company to reduce its water requirements by 36%.

Energy management

In order to enable the company to maintain optimal energy usage performance, it was recommended that an energy audit be established, and eight management system enabling tracking be installed. This measure will generate annual energy savings of 13%.

“The loss of profits due to wastage is considerably reduced thanks to the TEST process. The efficiency and proper allocation of the resources necessarily results in a corresponding increase in economic, financial and environmental benefits.”

Slah Charf
Manager

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