

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.

Morocco

Margafrique

Food sector

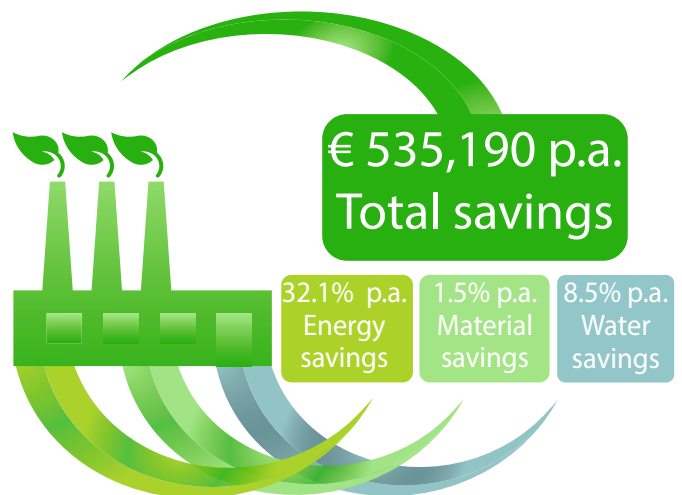
Context

Number of employees:	between 200 and 500
Key products:	Margarine, Cheese, Pastry Products, Dietary Fats
Main markets:	Local, Africa and Middle East

MARGAFRIQUE company, founded in 1985, specializes in the production of processed cheeses, margarines, dietary fats and pastry products. Its greatest strength is the constant renewal of its products and a consequent widening of ranges and the development of new ranges with nutritional value, through a constant desire to improve performance and quality of service.

The management system is double certified by BUREAU VERITAS in accordance with ISO 9001 (2015 version) for all its activities. MARGAFRIQUE has integrated the MED TEST II project with the aim of an inclusive and sustainable industrial development.

Benefits



Graphic: UNIDO

The MED TEST II project identified opportunities for total annual savings of € 535,190 in raw materials, water and energy for a projected investment of € 810,620. The average return on investment period for the identified RECP measures is 1.5 years. About 86 % of the measures identified and accepted by management are being implemented.

Through the improvement and optimization of production and the installation of more efficient equipment, the measures implemented will reduce energy costs by 32.1%, water consumption by 8.5%, and raw material consumption by 1.51%.

The environmental benefits achieved through several water and energy treatment and recovery measures will reduce annual expenses and reduce CO₂ emissions by 24.79% (1,454 t).

The implementation of a more advanced management of the various wastes will have a favourable impact on the environment.

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
Energy efficiency of electric utilities, including compressed air	36,290	17,450	2.1	-	146	Total: 1,454 t CO ₂ 4,716 m ³ waste water 50 t solid waste
Improvement of thermal energy performance	165,760	206,120	0.8	989 m ³ water	3,925	
Actions to reduce material loss and improve productivity	84,430	73,870	1.1	70 t raw materials	-	
Improving productivity by modern simple means	62,440	185,020	0.3	2,177 m ³ water 238 t raw materials	479	
Wastewater recycling for plant reuse	461,700	52,730	8.8	1,550 m ³ water 50 t raw materials	-	
TOTAL	€ 810,620	€ 535,190	1.5	358 t raw materials 4,716 m³ water	4,550 MWh	

¹ Numbers based on production value from 2015

Energy efficiency of electric utilities

Energy consumption will be reduced through measures aimed at optimizing contract power, improving performance of indoor and outdoor lighting by installing LED appliances and the phased replacement of electric motors with more efficient models. More efficient management and repair of leaks will optimize production of compressed air.

Improvement of thermal energy performance

Thermal energy costs will also be reduced by heat-insulating all hot and cold surfaces of the production system, using reverse osmosis water in boilers, condensate re vaporization, energy recovery through the cold production system and improving efficiency and reducing boiler heat loss. The installation of a combustion air preheating recovery system will generate additional water savings. Finally, the shift of No. 7 to No. 2 fuel oil provides a significant monetary gain while generating less than 15 t.e CO₂ of additional GHG emissions.

Actions to reduce material loss and improve productivity

The installation of solenoid valves in the preparation room will improve the quality of the product by controlling measurements and traceability of data and reduce loss of raw material. A statistical tool to analyze the uncertainties of weight at the packaging machine will, with the installation of an automatic control and correction system, reduce loss due to overweight of the end product.

Improving productivity by modern simple means

The implementation of an electrical energy, thermal and water management system to implement ISO 50001 standard on energy management, use of statistical capacity and the 5S step will allow improvement, optimization and continuous process management, reduction of non-produced output loss and better use of resources (raw materials, water, energy).

Wastewater recycling for factory reuse

The reuse of wastewater after advanced treatment will allow the company to reduce its water consumption while reducing its level of pollution loads in the local sanitation network.

For more information, contact:



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