

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

SAIPH

Chemical sector

Context

Number of employees: 600

Key products: Medicines for human use

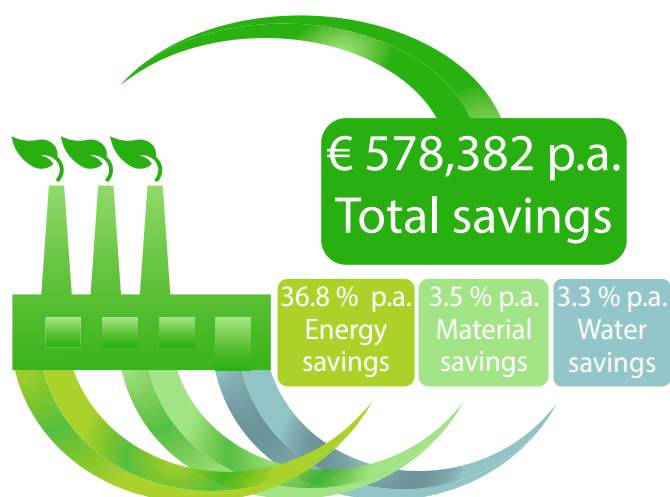
Main markets: Local Tunisia, 10 % export (mainly Libya and Algeria)

SAIPH is a limited company, established in 1992 and located in Tunisia's Boorbiaa Mohamadia region. SAIPH operates in the pharmaceuticals sector, and has a production capacity of 600 t per year; it produces medicines for human use in various pharmaceutical formats: uncoated and film-coated tablets, sachets, capsules, dry syrups and injectable ampoules. SAIPH has committed itself to a process of sustainable development through the implementation of the ISO 26000 standard.

“The TEST toolkit, coupled with the concept of the circular economy based on reuse, will act as a “funnel” enabling the channelling of resources into planned outputs, and reduce non-product outputs”

Med Tahar Sassi
Project Manager

Benefits



Graphic: UNIDO

The MED TEST II project identified 19 RECP measures, of which the company has decided to implement 95%. The project is expected to generate total annual savings of approximately EUR 578,382 in energy, water and raw materials and operating costs, against a total investment of EUR 2,154,090. The return on investment term varies between 1 month and 5 years. Energy costs will be reduced by approximately 37%.

The economic benefits derived from raw material savings (excipients and active ingredients) are estimated at approximately 3.5%. The water bill will be reduced by 3.3% (i.e., 1,200 m³). Other environmental benefits include a 3,768 tonne reduction in CO₂ emissions.

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
Improvements to pharmaceutical processes	5,000	57,120	0.1	16 m ³ water 6.4 t materials	319	Total: 3,768 t CO ₂
Acquisition of a laser particle sizer	45,000	21,420	2.1	0.2 t materials	-	
Installation of a trigeneration unit	1,800,000	320,000	5.6	-	3,404	
Optimisation of public utility energy management	304,090	179,842	1.7	1,200 m ³ water	3,306	
TOTAL	€ 2,154,090	€ 578,382	3.7	6.6 t raw materials 1,216 m³ Water	7,029 MWh	

¹ Numbers based on production value from 2015

Improvements to pharmaceutical processes

A 3.5% improvement in raw materials for batches manufactured throughout the year is achievable by using direct compression in order to prevent the losses generated during the mixing, granulation and drying stages. Similarly, the switch to direct compression has enabled a reduction in the rate of non-compliant products during the compression stage.

Acquisition of a laser particle sizer

The acquisition of a new laser particle sizer will enable the optimisation of the product production process thanks to better control of grain size, and improved raw material flows by reducing waste generated by the process due to the grain size variation in the powders.

“The application of the MFCA made us realise the importance of energy as a major cost, making up 40% of non-product outputs, and a control priority. This revelation reported the decision to invest in the acquisition and introduction of a trigeneration unit. In addition, SAIPH is in the process of harmonising the TEST approach with similar projects including its ISO 26 000 project, the LEAN worksite, and the integration of a circular economy concept based on the reuse of resources”

Med Tahar Sassi
Project Manager

Installation of a trigeneration unit

This involves the acquisition of a trigeneration unit with a capacity of 23,700 MWh to meet the company's electricity, heat and refrigeration needs.

The unit's annual production is as follows:

Electricity 12,000 MWh, hot water 6,100 MWh and cold water (ice water) 5,600 MWh.

Optimisation of public utility energy management

The improvement measures involve the optimisation of the power factor at the processing positions by installing a capacitor battery in order to reach the unit:

- the implementation of an energy accounting system,
- the optimisation of the industrial cooling unit by sheltering the GEG from the sun,
- guaranteed sub-cooling of the condensers using ADI-abatic systems and the renovation of the cold generation and distribution system,
- optimisation of the steam system in order to reduce bleed rates at the boiler and increase the recovery of lost condensate,
- optimisation of the compressed air unit by reducing the compressor pressure range,
- installation of a speed controller on one of the compressors and implementation of a leak detection and repair programme.

For more information, contact:



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