

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.

Jordan

Yeast Industries Co. Ltd. ASTRICO. Food and beverage sector

Context

Number of employees: 98

Key products: Fresh yeast and bread improver

Main markets: Local and regional (30%)

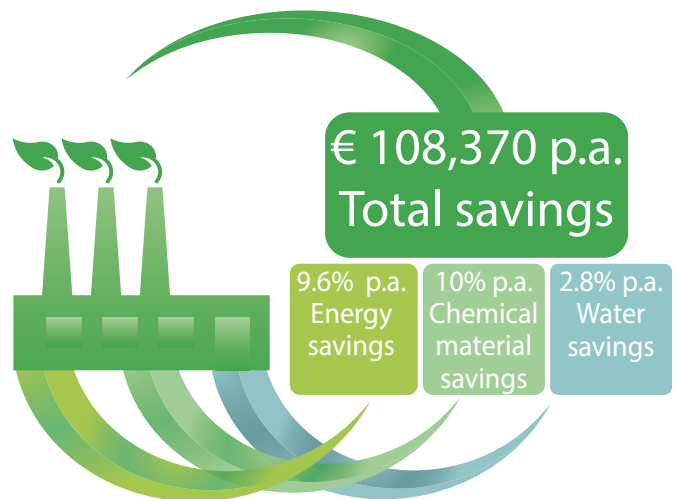
Management standards: ISO9001, ISO 22000:2005

The Yeast Industries Company Ltd, located in the Zarqa Governorate in Al-Russiefeh area, was established in 1976 to produce fresh yeast and bread improvers in addition to dry yeast packages for the local and regional markets.

“We participated in the MED TEST II project to reduce losses of materials, water consumption, and wastewater generation, realize energy saving, enhance our awareness in environmental issues, and comply with relevant standards and requirements to improve our competitiveness. ”

Eng. Adel Abouelela
Technical Manager

Benefits



Graphic: UNIDO

Through the MED TEST II project the company realized total annual savings of 108,370 euros in energy, water, and raw materials with an estimated investment of 118,000 euros and an average pay back period of 1.1 year. Eleven (11) saving options were identified, out of which 8 were accepted for implementation by the top management.

Energy consumption will be reduced by approximately 10%, water by 2.8%, and the CO₂ emissions will be reduced by 361 ton/year.

The company has applied to the Jordan Renewable Energy and Energy Efficiency Fund (JREEEF) for the implementation of identified energy saving options. The company also issued its EMS policy statement and received preparedness for an integrated RECP / EMS 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
Clean-In-Place (CIP) Optimization	€52,000	€25,330	2.1	8,820 m ³ water 11.8 tons Raw materials	-	Total: 361 tons CO ₂
Steam System and Heat Recovery	€57,330	€60,550	0.9	350 m ³ Water	1,120	
Cooling system	€2,670	€15,950	0.2	-	127	
Compressed air system	€6,000	€6,540	0.9	-	52	
TOTAL	€118,000	€108,370	1.1	11.8 tons Raw materials 9,170 m³ Water	1,299 MWh	

¹ Numbers based on production value from 2015

Clean-In-Place (CIP) Optimization

The optimization of the CIP will reduce the consumption of water and raw materials mainly through separating the CIP first rinse from other types of wastewater to be reused where appropriate, such as using the last rinse from cleaning the fermenter for cleaning the floors or as the first rinse of the next batch.

Steam System and Heat Recovery

To reduce fuel consumption, the steam network should be improved by eliminating heat loss through insulation of the pipes, end users, and condensate tank, and through arresting the steam leakages. Lowering the pressure of steam by 2 bars in the system and modifying the blowdown procedure of the boiler will result in additional energy savings.

The installation of a heat recovery system at the air blowing system for water heating purposes such as heating the make-up water for the steam boilers will significantly reduce the thermal energy consumption.

Cooling System

The cold stores cooling units have low performance due to lack of maintenance. Upgrading these units (well insulating refrigerant coils, condenser fans fixing, condenser air filter cleaning, well ventilating the suction and discharge of air in the outdoor units) will enhance the performance and will reduce operating hours as well as energy consumption.

Compressed Air System

There are compressed air leakages at 8.0 bars in the air network and the end users. Arresting at least 90% of these leakages will reduce the operating time of the compressors and reduce energy consumption. Moreover, the existing compressor has a specific power demand (17.4kW/ (m³/min)), which is higher than the acceptable range at the specified pressure (3.5-7kW/ (m³/min)), indicating that the compressor is not energy efficient. Therefore, the existing compressor should be replaced by a new, efficient one in order to reduce energy consumption.

“After our participation in the project, we do not only recognize the possible measures to reduce water consumption but also see many possible measures that could be implemented to save energy (electricity and fuel) consumption.”

Eng. Adel Abouelela
Technical Manager

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