

MED TEST III Palestine

Transfer of Environmentally Sound Technologies

Food and beverage sector

The Palestinian-Turkish Company for Food Manufacturing - Zeta

Company overview

Number of employees:
35 Full-time employees

Key products:
More than 80 different food products with a focus on pickles and sauces.

Main markets:
Palestine and Israel

Standards & certifications before MED TEST III:
ISO 22000 for sauces productions

The Palestinian-Turkish Company for Food Manufacturing - Zeta was established in 2014, and its production is located in the village of Zeta, north of Tulkarm in Palestine. Classified as a private joint-stock company with Turkish expertise, but with Palestinian production, Zeta is present on the local market. Zeta products fulfil international specifications and standards in terms of quality and design. The company aims to expand to other regional and international markets.

Benefits

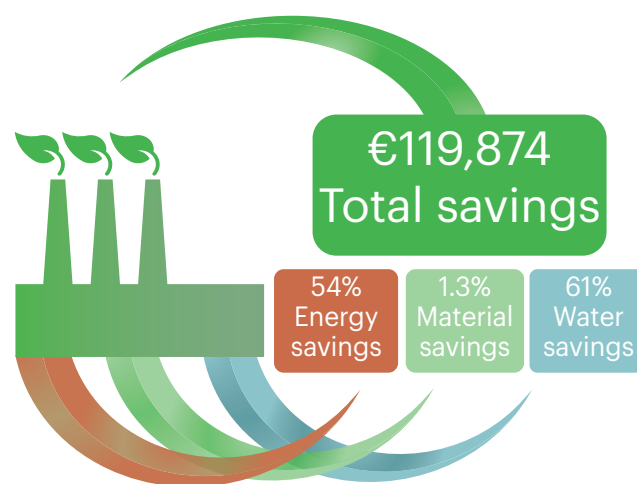
The MED TEST III project identified total annual savings of 119,874 Euro* (442,336 NIS) in energy, water and raw materials with an estimated investment of 314,250 Euro (1,159,585 NIS) and an average payback period of 2.6 years. The total investments also include the cost of an expensive wastewater treatment requested by the authorities. Without this investment, the average payback would be approx. one year.

The top management accepted 82% of the identified 17 measures for implementation, and most of the accepted measures are already implemented, or under implementation.

Water consumption will be reduced by 61%. This increased water efficiency includes at least 1,500 m³ of desalinated water which will be sold to the farmers for irrigation. After implementing all the feasible measures, Materials consumption will be reduced by 1.3% and energy consumption by 54%. Additionally, CO₂ emissions are expected to be reduced by 245 tons of CO₂ per year.

The environmental and health authorities have requested wastewater treatment at the ZETA facility. ZETA has used the MED TEST III results to provide evidence to the authorities that suggests an optimized preventative solution that would make the standard large wastewater treatment facility redundant. Indeed, the identified solution combining preventative measures integrated to the technology and a reverse osmosis unit to treat only the salty wastewater stream will resolve the environmental compliance issue.

Identified annual savings



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The TEST Project gives us a third opinion regarding our operations and costs in a well-organized manner. The final TEST report will be used in front of official bodies as a roadmap to implement the water recycling and treatment initiative recently requested by the Palestinian environment and health authorities.

Ayman' Manaa'
General Manager

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As part of the EU-funded SwitchMed programme, UNIDO demonstrates in the MED TEST III project pathways for industries in the Southern Mediterranean to become more resource efficient and to generate savings for improved competitiveness and environmental performance.

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Saving opportunities**

Actions	Economic key figures			Resource savings & Environmental impacts		
	Investment Euro*	Savings Euro* per year	Payback period years	Water & Materials per year	Energy MWh per year	Environmental impact per year
Energy conservation measures	60,101	57,927	1	-	874,7	245 tons of CO ₂ 3,647 m ³ of wastewater
Water savings	15,667	8,091	1,9	2,470 m ³	-	
Wastewater treatment and reuse	189,702	4,832		1,500 m ³	-	
Technology changes	48,780	49,024	1	1,177 m ³ 12 tons	25,9	
TOTAL	314,250	119,847	2.6	5,147 m³ 12 tons	882,6	

*Exchange rate as 1 Euro = 3.69 NIS (New Israeli Shekel)
** Numbers based on production value from 2021

Energy conservation measures

The efficiency of the steam generation and distribution system will be increased by different measures ranging from good housekeeping to solutions requiring investments. These measures include the maintenance of both boilers and their calibration, including adjustment of the fuel-air ratio, insulation of the boilers and the distribution system, and using solar water heaters to pre-heat boiler input water.

Other energy conservation measures include the compressed air system fixing all air leakages within the factory with the introduction of proper preventive maintenance protocols, reduction of the pressure set point of the compressed air used in the factory operations by one bar and finally installing Variable Speed Drive controller for the cooling towers.

Water savings

The water conservation group of interventions includes fixing water leakages and installing additional water submeters to give the operators feedback on their work's efficiency. Another set of measures includes collecting and reusing all wasted flows of fresh water, including those used for cleaning and at pasteurizing unit.

Wastewater treatment and reuse

The measure consists of collecting pickling water in special tanks and using reverse osmosis technology to reduce its salt content to the level at which Zeta will be able to fulfill regulation for wastewater treatment and to sell the desalinated water to the farmers for irrigation purposes.

Technology changes

Additional technology changes include: changing the steam pasteurization technology from open to close with heating by steam; introducing a new line of natural products non-pasteurized; and installing plastic sheets under the conveyor belts to collect falling pickles (products) to be reused.

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The MED TEST III project gave us an overview of our factory operation and identified new improvement opportunities that can reduce production costs. Hence, we implemented some of the good housekeeping measures immediately, and are now making the savings.

Sawsan Ali
Quality Manager

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