

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.

Palestine

Al-Qasrawi

Food and beverage sector

Context

Number of employees: 220

Key products: Several types of snacks, pellets, and beverages

Main markets: Local and regional

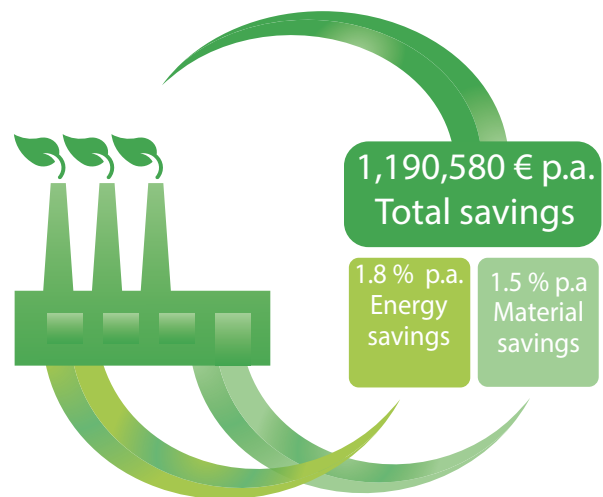
Management standards: Palestinian Standard (planning for ISO 22000, ISO 9001, and ISO 14001)

Al-Qasrawi industrial and trading company, established in 1992, manufactures various types of snacks such as potato chips, cereal chips, puffed corn and wheat, as well as beverages. It is one of the leading food companies in Palestine. It also produces semi-finished products (pellets) from potatoes and cereals. The company participated in the MED TEST II project mainly to reduce energy and materials losses and related costs.

“Our ambition in the project was to reduce our raw materials losses and energy consumption by implementing good management practices and new technologies that generate environmental and financial benefits.”

Zuhair Qasrawi
CEO

Benefits



Graphic: UNIDO

The MED TEST II project identified several measures with total annual savings of 1,190,580 euros due to reductions in the use of materials and energy per unit of product and to increased productivity and production capacity for accessing new markets. The total investment required is approximately 447,000 euros. The average payback period is less than one year.

Good housekeeping measures were immediately implemented by company employees, and more measures are planned for implementation at the new facility, to which the company is currently relocating. Out of all the identified and feasible measures, 60% were accepted by senior management for implementation.

One important benefit was the change in the company culture as employees gained an understanding of the importance of monitoring production inputs and related costs. Indeed, the company is planning to install energy and water sub-meters in the new facility to secure the necessary data for tracking resource efficiency.

Saving opportunities¹

Action	Economic key figures			Resource savings & environmental impacts per year		
	Investment euros	Savings euros / yr.	PBP years	Water and raw materials	Energy MWh	Pollution reduction
Reducing losses of frying oil	0	55,000	0	50 t of raw materials (vegetable oil)	-	68 t of CO ₂ 202 t of waste
Product modification	235,000	165,000	1.4	150 t of raw materials (vegetable oil)	-	
Introducing packaging by weight	190,500	954,880	0.2	-	-	
Electrostatic application of spices	1,500	5,000	0.3	2 t of raw materials	-	
Series of energy efficiency measures	20,000	10,700	2	-	90	
TOTAL	447,000	1,190,580	0.4	202 t of raw materials	90 MWh	

¹ Numbers based on production value from 2015

Reducing loss of frying oil

Vegetable oil used for frying has been identified as one of the key elements related to significant loss. The sources and causes of these losses were addressed by a series of RECP measures including better control over the amount and temperature of the oil used without compromising product quality and regular removal of impurities between batches. The measures adopted are expected to reduce losses of frying oil by 50 t/year, yielding annual savings of 55,000 euros with no investment needed.

Product modification

The company found that the percentage of oil contained in products could be reduced by 30% while maintaining taste and quality. This measure was explored through a set of internal tests, and it is already being implemented. By implementing the new product recipes, the company will be able to save around 150 t of oil per year and will also be able to expand to the new market for low-fat products with an oil content of only 10%, thus becoming more competitive.

Introducing packaging by weight

The company decided to replace the existing volumetric packaging technology with a new system based on product weight. Products have varying densities, and with the previous packaging system the product content in each package fluctuated to such an extent that approximately 20% of excess product was packaged (product not paid for by customers). Shifting to weight based packaging results in standardized product quantities with a fixed weight and increased sales revenues.

Electrostatic application of spices

At present, spices are dropped onto the product by gravity with irregular distribution and loss of spices. Using an electrostatic spray application, the coating yield will be increased up to 98%, delivering annual savings of at least 5,000 euros.

Set of energy efficiency measures

Several recommended good housekeeping and low-cost measures are being adopted while the company is relocating machinery to a new building, such as a new piping system with proper insulation, installation of HVAC systems, etc. In addition, energy efficient LED lighting fixtures are being installed. It was estimated that savings will exceed 5% in comparison with the energy consumption at the old facility.

“Applying the TEST methodology in our company helped us see our hidden costs and take advantage of significant opportunities for savings. We have applied most of the measures to reduce raw materials losses, and we plan to implement energy conservation measures at the new facility. The average payback period is less than 1 year, which is considered a major advance for the company.”

Zuhair Qasrawi
CEO

For more information, contact:



United Nations Industrial Development Organization
Department of Environment
Vienna International Centre, P.O. Box 300
1400 Vienna, Austria
Telephone: +43-1 26026-0, Fax: +43-1 26926-69
E-mail: c.gonzalez-mueller@unido.org
Web: www.unido.org



Palestine Academy for Science and Technology (PALAST)
Jerusalem Ramallah Road
Ramallah, Palestine
Tel: +9722 2960524/6 Fax: +9722 2960525
E-mail: ikhatib@palestineacademy.org
Web: www.palestineacademy.org