

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.

## Egypt Sonbola Food and beverage sector

### Context

Number of employees:	24 full-time employees, 6 seasonal employees
Key products:	Breadcrumbs
Main markets:	Local
Management standards:	BRC Global Standard

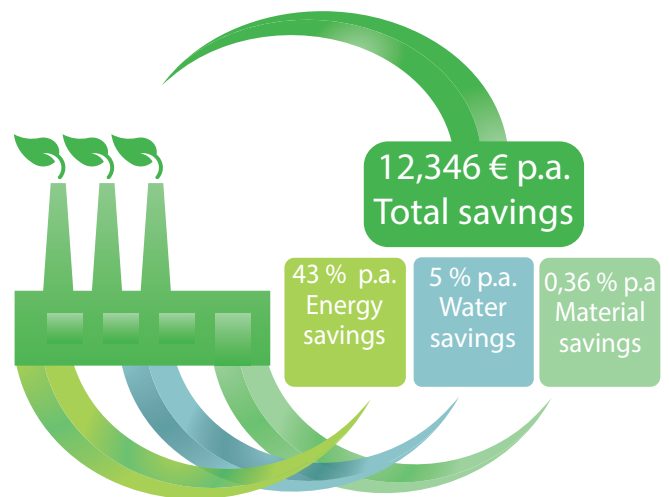
El-Magd Company for Food Industries (Sonbola) is a small private enterprise founded in 1997 specializing in the production of different types of breadcrumbs with a total production volume of 1,000 t per year destined for the local market.

Sonbola participated in the MED TEST II project to reduce production losses and costs through a more efficient use of resources.

*“Our target is to reduce our energy and material losses in addition to improving our awareness in environmental issues.”*

Waleed Abd El Kawy  
Chairman

### Benefits



Graphic: UNIDO

The MED TEST II project has identified eight resource efficiency measures that shall result in a total annual savings of 12,346 euros in raw materials, water and energy, with an estimated investment of 6,238 euros. The average payback period is 0.5 years.

The company is planning to relocate the factory to a new industrial zone taking into consideration all RECP measures that were identified during the MED TEST II project. Using the Material Flow Cost Accounting (MFCA) tool as a TEST approach, the company realized that there is considerable potential for savings by reducing energy and product losses.

The total cost of raw materials will be reduced by about 0.36% with some resource efficient and cleaner production measures as well as some environmental projects while water consumption would be reduced by 5% by implementing water monitoring measures.

In addition, energy costs will be reduced by about 43%, resulting in a reduction of about 143.5 t of CO<sub>2</sub> emissions per year.

In parallel to the identification of saving opportunities, the company has updated its policy to integrate resource efficient and cleaner production concepts.

## Saving opportunities<sup>1</sup>

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
Water monitoring measure	50	10	5	36 m <sup>3</sup> of water	-	Total: 143.5 t of CO <sub>2</sub>
Environmental measures for the grinding machine	3,888	476	8	1.2 t of breadcrumbs	-	
Slicing machine modifications	50	960	Immediate	2.4 t of breadcrumbs	-	
Energy conservation measures	2,250	10,900	0.2	-	678	
<b>Total</b>	<b>6,238 €</b>	<b>12,346 €</b>	<b>0.5</b>	<b>36 m<sup>3</sup> of water 3.6 t of material</b>	<b>678 MWh</b>	

<sup>1</sup> Numbers based on production value from 2015

### Water monitoring measure

Installation of a metering device for water flow will allow optimized monitoring and control of water consumption and wastewater discharge. Implementation of this measure will save about 5% of water consumption.

### Environmental measures for the grinding machine

These measures involve the installation of a bag house filter in the grinding machine and improving ventilation in the workplace environment. By applying the first measure, breadcrumb powder generated by the grinding machine will be collected and conveyed to the packaging stage. This will also reduce dust emissions in the workplace environment and will save about 1.2 t of breadcrumbs per year while the second measure will provide a better working environment and improve air circulation in the production area.

### Slicing machine modifications

These modifications involve the installation of a stainless-steel tray to reduce losses from the slicing machine. This measure will save about 2.4 t of breadcrumbs.

### Energy conservation measures

This set of measures consists of adjusting the present drying equipment by increasing the airflow, improving the insulation of the ovens and thus making sure the doors shut tightly, improving the efficiency of the burners and improving temperature control, which will raise burning efficiency.

Applying these measures will save about 43% of the total energy consumption, which will reduce total CO<sub>2</sub> emissions by about 41%.

***“Our objective is continuous improvement by implementing all the recommended efficiency measures. The project has increased our knowledge on how to estimate NPO costs and ways to reduce them.”***

Waleed Abd El Kawy  
Chairman

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