

# MED TEST III Jordan

Transfer of Environmentally Sound Technologies

Food and beverage sector

*Al-Farah Chocolate Manufacturing Co.*

## Company overview

**Number of employees:**  
25 Full time employees

**Key products:**

Chocolate wafer (white, dark), spreadable chocolate and chocolate sachet.

**Main markets:**

Local and the MENA region (35%)

**Standards & certifications before MED TEST III:**

ISO 22000

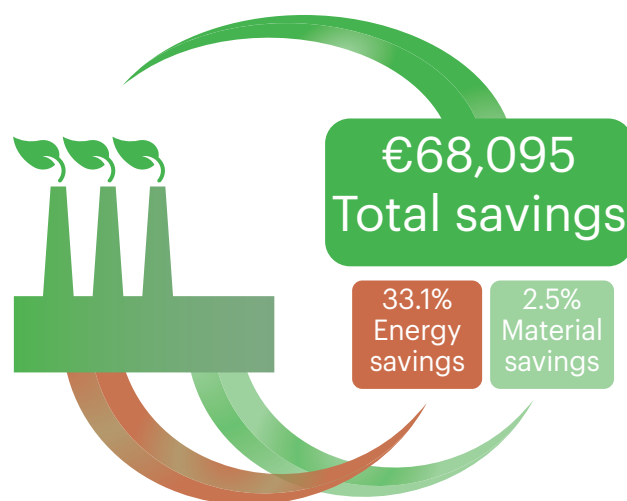
Al-Farah Chocolate Manufacturing Co. is a medium-sized enterprise established in 2013 to produce dark and white chocolate wafers, spreadable chocolate and chocolate sachet for the local market in Jordan. The company participated in the MED TEST III project to explore opportunities for reducing the production cost and energy losses. The company is certified for ISO 22000 management system.

## Benefits

The MED TEST III initiative yielded a comprehensive analysis of potential cost savings in energy and raw materials, which amounted to an annual total of EURO 68,095\* (51,071 JOD). This evaluation also estimated an investment of EURO 173,067 (129,800 JOD), resulting in an average payback period of 2.5 years. The low-cost measures initially trialed by the company's team trained by the project led to measurable savings. Therefore, the company is motivated to continue with the implementation of medium and higher cost measures with an expected reduction of materials consumption by 2.5% and energy consumption by approximately 33.1% (74.4% reduction in electricity consumption). Additionally, the proposed energy solution will prevent the emission of approximately 201 tons of CO<sub>2</sub> per year.

Dynamic, action-driven team members from the company also helped to complete the Material Flow Cost Accounting (MFCA) analysis, defining the priority flows, focus areas and initiating the detailed analysis. One remarkable value added from the MED TEST III project, is that the company team started to implement some opportunities to reduce the losses of raw materials once it was revealed as a priority flow to them.

## Identified annual savings



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Our main target in participating in the MED TEST III project was to reduce production costs by reducing waste as much as possible, and to improve water and energy efficiency. We hope this can lead to an improved competitiveness and environmental performance that can help us increase our local market share and support our plans to export.

Mr. Fathi Al-Jaghbir  
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
Raw materials and product recovery	21,067	28,584	0.7	31.95 tons	21.4	201.1 tons of CO <sub>2</sub>
Energy savings	152,00	39,511	3.9	-	417.1	
<b>TOTAL</b>	<b>173,067</b>	<b>68,095</b>	<b>2.5</b>	<b>31.95 tons</b>	<b>438.5</b>	

\*Exchange rate 0.75 Jordanian Dinar (JOD) = 1 Euro  
 \*\* Numbers based on production value from 2020

### Raw materials and product recovery

This group of measures includes effective implementation of Standard Operating Procedures (SOPs) for Training, Supervision, and Quality Control, optimizing dough machine performance through mechanical upgrading, enhancing wafer quality and material's saving through efficient cream spreading techniques, optimizing wafer production line performance by precise cutting and conveyor adjustment measures.

The movement of cream drums that spread the cream between the layers of the wafer are maintained and adjusted to save quantities of cream, give the wafer a homogeneous shape, and increase the quality of the product, which can help increasing the competitiveness of company's products in the market. Furthermore, the knife movement and conveyor are maintained and adjusted to ensure that all pieces are collected without falling during production. In addition, the company installed a funnel to add the sugar and flour to the production line, which has reduced the percentage of materials spilled on the floor. All these measures will reduce waste while reducing production costs.

### Energy savings

This group of measures includes the following solutions which will reduce the energy consumed, and reducing the cost of the energy will play a significant role in increasing the competitiveness of the company.

- Harnessing solar power with the installation of a photovoltaic system on the company's rooftop to generate electricity.
- Use solar water heat pump technology to heat water instead of direct electric heater to reduce electricity consumption.

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Initially, the initiatives may have seemed more theoretical than practical, but the results have demonstrated their effectiveness. The team who supervised the project was highly qualified and exceeded our expectations. The awareness sessions conducted by the team and their valuable input engaging with the workers has improved awareness and ability of workers to identify areas of improvement themselves. We look forward into working on promoting these types of projects to colleagues from the industry to enhance the industrial sector performance in Jordan.

Mr. Fathi Al-Jaghbir  
 General Manager

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