

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

# Orion Food Industries

## Food and beverage sector

### Context

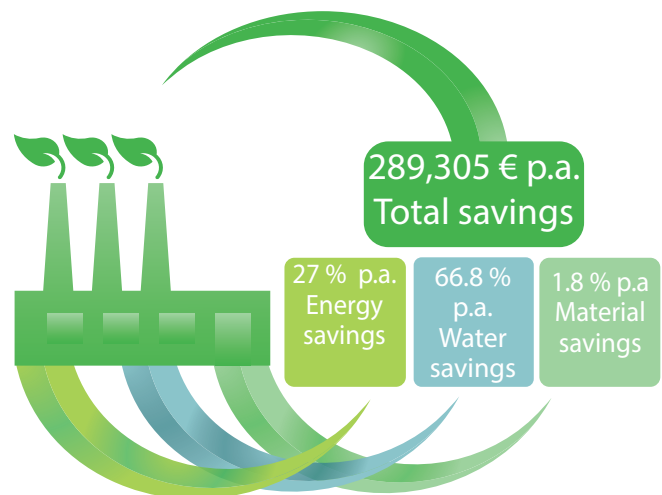
Number of employees:	150 full-time employees, 40 seasonal employees
Key products:	Guava, mango, peach, apricot, strawberry and apple pulp
Main markets:	Local and export (58 %)
Management standards:	ISO 22000:2005, FSSC 22000, Halal and FDA

Orion Food Industries is specialized in producing premium-quality fresh fruit pulp in ASEPTIC BAGS. The company currently has two production lines for fruit pulp. A new production line for IQF frozen strawberries will be installed in the course of 2018. Orion is committed to high-quality products and professional customer service and aims to be ranked as the best in the field. Quality is not just another company goal; it is its basic survival and growth strategy.

*“We joined the MED TEST II project aiming at increasing awareness for all our team how to save energy and decreasing losses without any effect on the quality of our products, in addition to investigating out-of-the-box solutions to increase productivity and decrease losses.”*

Mohamed Tayel  
Managing Director

### Benefits



Graphic: UNIDO

Through the MED TEST II project, the company identified opportunities with a total savings of 289,305 euros and an investment of around 291,182 euros. The anticipated payback period for all the measures is one year. The identified opportunities will save 27% of the company's energy consumption, 66.8% of the water consumption, and they will reduce raw material losses by 1.8%. The environmental benefits include reduction of CO<sub>2</sub> emissions by 217.6 t annually.

Throughout the course of the MED TEST II project, the company's TEST team increased its awareness with regard to the energy management system. The company installed a monitoring system for electricity consumption of the main consumers. Moreover, the company installed PV modules on the roof of the cold store, generating 300 kW of electricity. Orion is currently in the process of implementing ISO 14051 for its water footprint, as well as ISO 50001 for its energy management system.

## 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
Compressed air network	7,182	1,240	5.7	-	34	Total: 217.6 t of CO <sub>2</sub>
Good housekeeping for the cold store	-	334	Immediate	-	10	
Optimization of the steam network	6,000	17,401	0.3	12,800 m <sup>3</sup> of water	896	
Ice pigging to clean the heat exchanger	275,000	268,906	1	4,864 m <sup>3</sup> of water 268 t of raw material	-	
Water recovery from homogenizer and vacuum pump	3,000	1,425	2.1	5,000 m <sup>3</sup> of water	-	
<b>Total</b>	<b>291,182 €</b>	<b>289,305 €</b>	<b>1</b>	<b>22,664 m<sup>3</sup> of water 268 t of raw material</b>	<b>941 MWh</b>	

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

### Compressed air network

The air compressor is over dimensioned. Installing a smaller compressor will not only reduce electricity consumption, but also provide an energy reserve within the system to keep the production line running if the compressor is down.

The compressed air distribution system suffers from leaks and it is thus important to inspect it for leakages on a regular basis. This measure should result in a reduction of the compressor set point by 1 bar

### Good housekeeping for cold store

The cold store is the main consumer of electricity within the Orion company, accounting for over 50% of the electricity bill. Good housekeeping measures, such as checking and maintaining the insulation of the doors, adjusting the air curtains and automation of the doors opening with motion sensors, would reduce the electricity bill by around 2.5%.

### Optimization of the steam network

Installing a condensate recovery system for the boiler shall reduce energy consumption as well as water and chemicals consumption, resulting, among other things, in decreased hydraulic and thermal loads of the wastewater network.

### Ice pigging to clean the heat exchanger

Ice pigging is an eco-innovative solution that was presented to the company team. An "ice pig" is introduced through the heat exchanger pipes upstream of the CIP, allowing for clean product recovery from the pipes. At the same time, pipe contamination is reduced, which results in a decrease of the CIP rinsing time. This measure saves product waste that was previously diluted with rinse water and reduces water consumption.

### Water recovery from homogenizer and vacuum pump

The water balance showed that waste water coming from different locations of the production line can be recovered and reused in the washing area, decreasing the fresh water consumption.

*"Through the MED TEST II project, we were able to develop an information system to monitor the use of natural resources against the production levels, and consequently take the correct timely decisions to increase our resource efficiency."*

Michael Arian  
TEST Team Leader

## For more information, contact:



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