

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

# Farm Frites Company

## Food and beverage sector

### Context

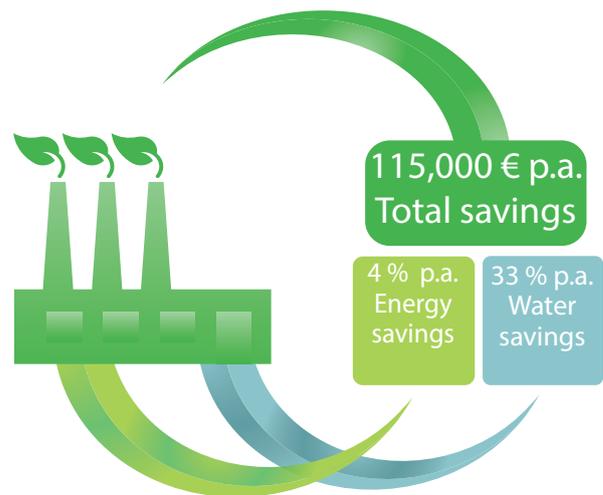
Number of employees:	1,200
Key products:	Semi fried frozen fries
Main markets:	Local and international (50 % export)
Management standards:	ISO 9001 ISO 14001 ISO 18001 ISO 22000

Farm Frites was established in Egypt since 1988 as a joint venture between Farm Frites Netherlands and Americana group. It is located at 10th of Ramadan city industrial zone. Farm Frites Egypt is one of the largest Farm Frites plants globally with a significant potato farming operation. The company annually exports 50% of their production to more than 22 countries in the Middle East and Africa, in addition to emerging market opportunities in Japan and Far East.

*“The Med Test II project contributed in expanding the road of continuous improvement master plan through creating new opportunities in the field of water, energy and waste management that effectively influenced the production line efficiency and performance.”*

Mohamed Fayad,  
Farm Frites

### Benefits



Graphic: UNIDO

The MED TEST II project identified total annual savings of 115,000 euros in energy and water consumption use with an estimated investment of 13,000 euros. The average pay back period is 0.11 year. Twenty saving measures have been identified during the project with the active support of the internal company team, from which fifteen were implemented, one was retained for further investigation, while four were discarded due to technical limitations.

The energy consumption will be reduced by 4% and a total of 619 t of CO<sub>2</sub> emissions will be eliminated.

The TEST project at farmfrites not only revealed economic measures to save on resources, the company internal team appreciated the Material Flow Cost Accounting (MFCA) sheets to reveal hidden potentials for improvement, and in improving their monitoring system. The training provided to the company team facilitated different methodology in addressing water and raw material conservation measures. During the project period, the company team identified and implemented twelve water saving measures which saved around 33% of water consumption.

## 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
Steam system optimization	13,000	47,000	0.3	-	3,065	Total: 619 t of CO <sub>2</sub>
Water conservation measures	-	68,000	-	238,596 m <sup>3</sup> of water	-	
<b>Total</b>	<b>13,000 €</b>	<b>115,000 €</b>	<b>0.11</b>	<b>238,596 m<sup>3</sup> of water</b>	<b>3,065 MWh</b>	

<sup>1</sup> Numbers based on production value from 2017

### Steam System Optimization

Steam boilers are the only natural gas user of the company. Three measures have been developed to optimize the thermal energy consumption. Those measures include tuning up the boiler to improve the combustion efficiency, fixing the deteriorated insulation to prevent thermal leaks from the steam network, and enhancing heat recovery from boiler flue gases through activating the economizers. Most of the indicated measures were addressed by the company team and confirmed by the TEST consultants.

*“Through the project we cultured how to utilize resources in the most cost effective manner that lead to a change in mindset on efficiency optimization and better perception on sustainability aspects.”*

Mohamed Fayad,  
Farm Frites

### Water Saving Measures

The company team conducted a detailed water mapping, and identified several locations where water was running continuously, without need, they applied reduce, reuse and eliminate approach. The company installed solenoid valves to control the water use at those locations. They also assessed possibilities for in process recycling and identified measures to reuse excess water for blancher makeup, and the overflow from the blancher for cleaning and washing purposes. Those low cost water conservation measures were implemented using the maintenance budget and resulted in a reduction of 33% of water consumption.

### For more information, contact:



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