MED TEST II Case Study

switchmed

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.

Jordan

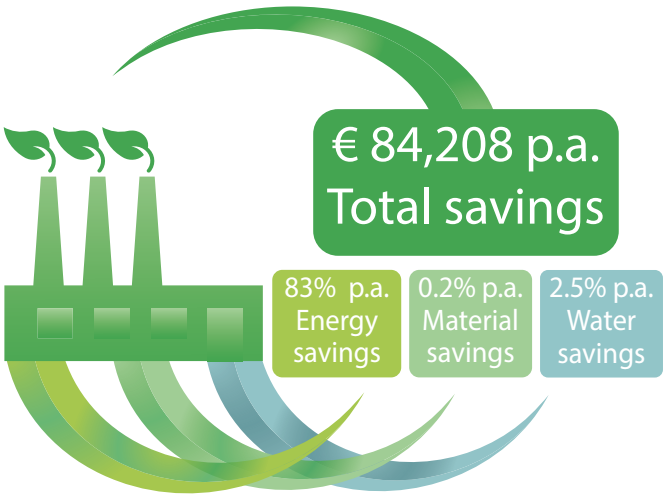
Jordan Valley Food Industrial Co.

Food and beverage sector

Context

Number of employees:	100
Key products:	Broad and Fava beans, Hummus Tahina, chickpeas in brine, green peas, green peas & carrots, kidney beans, mixed vegetables, Baba Ghanouge
Main markets:	Local, regional and international (35%)
Management standards:	ISO 9002, ISO 9001:2015, HACCP, US-FDA approval

Benefits



Graphic: UNIDO

Jordan Valley Food Industrial Company is a medium-sized enterprise established in the year 1980. The company produces hummus (chickpeas) and foul (broad beans) in addition to mixed vegetables, eggplant, green peas, carrots, red beans, white beans, and Baba Ghanouge.

The Company participated in the MED TEST II project in order to reduce energy losses and costs through applying renewable energy and energy efficiency measures and training its employees on resource efficient and cleaner production (RECP).

"Our ambition in the project was to reduce our energy and raw materials consumption and to expand our international market. We realized soon that the production practices and technologies that were presented to us will lead to environmental and economic benefits."

Eng. Ahmad M. Soudi,
Commercial Manager

The MED TEST II project identified total annual savings of 84,208 euro in energy, water and raw materials with an estimated investment of 43,948 euro. The average pay back period is 0.5 year, and some of the measures are already implemented or under implementation. Out of a total of 20 identified measures, approximately 60% were accepted by the top management for implementation.

Energy consumption will be reduced by approximately 83% and solid waste by 2.2%, additionally the CO_2 emissions will be reduced by 513 tons/year.

The company also issued its EMS policy statement and was provided with a guide to establish RECP integrated EMS system.

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SwitchMed is funded by the European Union

Saving opportunities[1]

Action	Economic key figures			Resource savings & Environmental impacts per year		
	Investment euros	Savings euros / Yr.	PBP Yr.	Water & Materials	Energy MwH	Pollution reduction
Regulation of autoclaves and handling of cans	€7,800	€3,780	2.1	2.8 tons Raw materials 1.5 m^3 Water	-	Total: 513 tons of CO_2 2.8 tons of Solid waste
Steam system	€30,800	€75,996	0.4	-	1,822	
Lighting and compressed air system	€3,848	€3,859	1.0	-	38	
Cleaning operations	€1,500	€573	2.6	275 m^3 Water	-	
TOTAL	**€43,948**	**€84,208**	**0.5**	**2.8 tons Raw materials 276.5 m^3 Water**	**1,860 MwH**	

1 Numbers based on production value from 2015

Regulation of autoclaves and handling of the cans

The adjustment of the mechanical pressure regulator will prevent over pressurization at the autoclaves. Moreover, handling of the cans can be improved by using new frames to avoid damage due to improper stacking of the boxes. The actual amount of 35 damaged cans per day could be reduced to zero.

Steam system

The steam system of the company could be improved by arresting steam leakages in the company, replacing some steam traps, insulating the steam pipes and end-users, and returning the condensate steam to the steam boiler.
Installing 6,000 lit/day Solar Heating System to heat the make-up water for the steam boilers will reduce the fuel consumed in the boiler for water heating.

Lighting and compressed air system

Inefficient fluorescent lamps shall be replaced by efficient LED tube lamps. After conducting site measurements for the existing air compressors, it was found that the specific power demand for the 11KW compressor is 9.2 kW/(m^3/min), which is higher than the acceptable range at the specified pressure (3.5 -7 kW/(m^3/min)). On the other hand, the second 5.5 kW compressor has a specific power within range, therefore operating the 5.5 kW compressor instead of the 11kW one will reduce the annual electricity consumption.

Cleaning operations

The company uses regular water showers without any water saving devices so installing a water jet hose on these showers will reduce the quantity of the water used for cleaning and also the generated wastewater.

"Applying the TEST methodology in our company helped us to see our hidden costs and to move towards significant saving opportunities. We have applied most of the saving options to reduce energy and raw materials consumption."

Eng. Ahmad M. Soudi,
Commercial Manager

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