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 Poultry Processing & Marketing Co. PLC
Food and beverage sector

Context

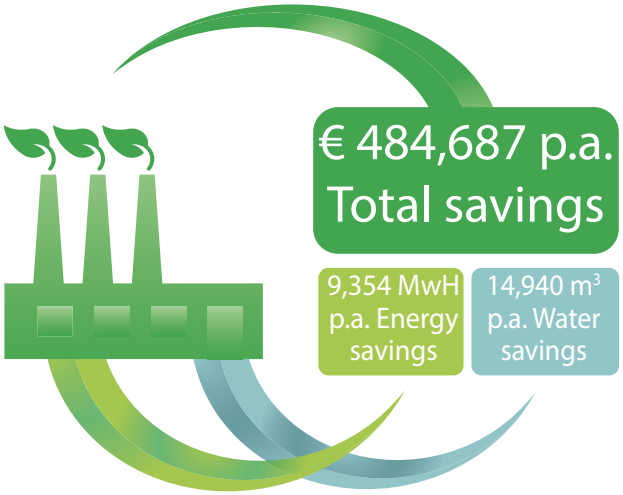
Number of employees:	450
Key products:	Fresh and frozen chicken, whole and cuts
Main markets:	Local
Management standards:	ISO 9001:2015, HACCP, ISO 22000:2005

Jordan Poultry Processing & Marketing Co. PLC is a large-size enterprise established in 1964 for producing fresh and frozen chicken, whole and cuts, for the local market. The company joined the MED TEST II project primarily to improve its performance in energy consumption.

"Doing business today requires low production costs, yet high quality products. From this standpoint the JPPMC management embraced and valued the potential of the MED TEST II project as a way to improve the company performance in energy consumption, realizing return on investment, and to save money while protecting the environment."

Ms. Rula Alzayyat,
Quality Assurance Manager

Benefits



Graphic: UNIDO

The MED TEST II project identified total annual savings of 484,687 euro with an estimated investment of 805,340 euros with an average pay back period of 1.7 years. All the 16 saving options identified within the project to reduce the consumption of energy (electricity and fuel) and water have been accepted and retained by the management, and some of the measures are already implemented (33%) or under implementation.
Energy consumption will be reduced by approximately 48%. Additionally, CO_2 emissions will be reduced by 43%.

As a result of the project the company installed 16 water flow meters and set up an information system to monitor key water consumers within the process. Moreover an EMS policy statement was approved by the management to establish an RECP integrated EMS system.

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

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
Renewable energy and heat recovery	€ 728,943	€ 312,759	2.3	14,940 m^3 Water	7,182	Total: 3,150 tons of CO_2
Lighting and compressed air system	€ 37,464	€ 32,332	1.2	-	296	
Steam system	€ 5,333	€ 31,017	0.2	-	883	
Cooling system	€ 32,533	€ 100,356	0.3	-	918	
Pumping system	€ 1,067	€ 8,223	0.1	-	75	
TOTAL	**€ 805,340**	**€ 484,687**	**1.7**	**14,940 m^3 Water**	**9,354 MwH**	

1 Numbers based on production value from 2015

Renewable energy and heat recovery

The company could take advantage of renewable energy to reduce energy consumed in the boiler for water heating (by installing a solar water heating system) and to generate thermal energy and electricity (by installing a biogas plant). Additionally, a heat pump is proposed to be installed to recover the waste heat from the existing ammonia refrigeration plant to generate thermal energy for hot water production that will also reduce the consumption of water.

Lighting and compressed air system

A number of fluorescent tubes and high bay HPS lamps are replaced by efficient LED tubes, LED high bay and LED flood light to reduce electricity consumption. Additionally, electricity consumption could be reduced by arresting 90% of air leakages in the compressed air system and replacing the old air compressor with a new and efficient one.

Steam system

Tuning-up the steam boiler will increase its efficiency and reduce the energy and fuel consumption. Heat losses in the steam network can be eliminated by proper insulation of piping.

Cooling system

Several measures were identified for reducing electricity consumption in the cooling system:

- Using the existing CO_2 cooling system instead of the R-22 system,
- Upgrading the existing cooling units for the cold store,
- Well insulating the western cold store,
- Reducing opening hours for the deep freezers,
- Upgrading the cooling units for cold room,
- Using high speed gates for the west cold store's doors

Pumping system

The 90 kW well pump was oversized. By replacing it with a 75 kW, with the same requirements, will save approximately 17% of the pump energy consumption.

"In order to remain competitive, continuous improvement of processes is necessary. Managers have created a learning environment that collects and shares lessons learned from the project throughout the organization, continuously improving the production processes of the company."

Ms. Rula Alzayyat,
Quality Assurance Manager

For more information, contact:

United Nations Industrial Development Organization
Department of Environment
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Telephone: (+43-1) 26026-0, Fax: (+43-1) 26926-69
E-mail: C.GONZALEZ-MUELLER@unido.org
Web: www.unido.org

Royal Scientific Society
P.O.Box: 1438 Amman, 11941 Jordan
Telephone: +962 6 5344701 Fax: +962 6 5344806
Email: rafat.assi@rss.jo
Web: www.rss.jo

الجمعية العلمية الملكية
Royal Scientific Society