

MED TEST III Jordan

Transfer of Environmentally Sound Technologies

Chemical sector

The Arab Pesticides and Veterinary Drugs Manufacturing Co. (MOBEDCO)

Company overview

Number of employees:
173 full time employees

Key products:
Agrochemicals and veterinary products

Main markets:
Local (30%), regional (40%) and international (30%)

Standards & certifications before MED TEST III:
ISO 9001-2015 and ISO 14001: 2015 certificates

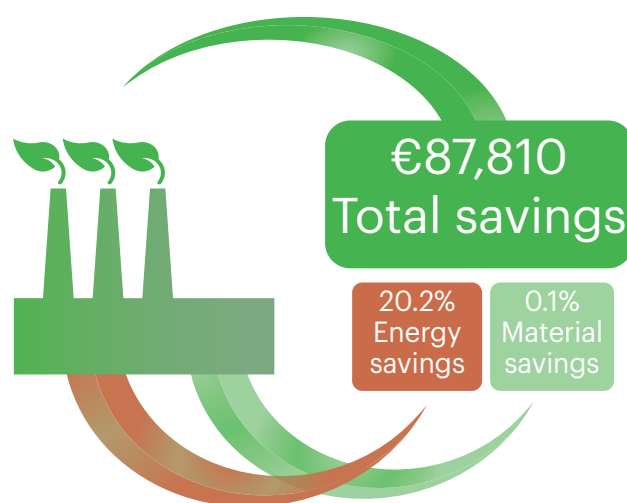
The Arab Pesticides and Veterinary Drugs Manufacturing Co. (MOBEDCO) is active in the agrochemical sector. Established in 1991, MOBEDCO is a public shareholding with a focus on generic formulation of pesticides and veterinary drugs. The company is currently exporting to around 40 countries, covering Asia, Africa and the Common Wealth of Independent States (CIS). Also, MOBEDCO is attempting to enter the European markets with their products. Good Manufacturing Practices (GMP) are applied in the company.

Benefits

The MED TEST III project identified total annual savings of 87,810 Euro* (65,860 JOD) of raw and operating materials as well as of energy with an estimated investment of ca. 167,000 Euro* (125,255 JOD.) The average pay back period is 1.9 years, and 83% of the identified 12 measures were accepted by the top management for implementation and 42% of them are partially implemented or under implementation. The identified measures will be able to reduce 170 tons of CO₂-eq. emissions per year.

Also, the company is investigating the use of pressurized water instead of hose water to save 70% of the water used for cleaning. Since most of the water outlets are not equipped with water-saving appliances, the installation of water-efficient instruments, such as aerators for faucets, trigger-operated controls (gun) for hoses and water-efficient products (i.e. taps, shower heads, toilets, etc.), is expected to save 20-40% of consumed water

Identified annual savings



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We joined the MED TEST III project mainly to improve our staff's knowledge of resource-efficient and cleaner production practices and to reduce energy-related production costs. Before joining this project, we wasted energy on lighting, motors, gas and air compressors, leading to heavy energy costs. We now expect to increase productivity, reduce operational costs, and minimize environmental compliance costs.

Mr. Mohammad Oweis
CEO, MOBEDCO

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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**

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

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
Process control	5,330	4,020	1.3	1.257 tons	-	Total reduction of CO ₂ emissions 170 tons per year
Maintenance and cleaning operations	-	43,855	-	1.320 tons (Ethanol)	-	
Energy savings	161,670	39,935	4.1		623.7	
TOTAL	167,000	87,810	1.9	2.577 tons	623.7	

Process control

This group of measures includes the following recommendations to be investigated to reduce the consumption of raw materials:

- Improving the efficiency of suction system, and the grinder feeding and unloading to reduce the fugitive emissions.
- Controlling the over loading against maximum capacity of the grinder and the design value of the suction system.
- Using portable automated feeding system as applied in some powder sections for reactors, tanks and drums to minimize losses and spills.

Energy savings

This group of measures consists of the following actions to reduce the consumption of electricity and fuel:

- Installing a power monitoring system
- HVAC system upgrading includes the ventilation improving the chiller, fresh air and ventilation rate efficiency.
- WFI unit upgrading includes ensuring good insulation on the WFI loop network, stopping WFI steam leakages, installing heat recovery unit in the distillation to pre-heat the feed water and upgrading the industrial chiller.
- Compressed air systems upgrading includes arresting 90% of the air leakages in the compressed air network, fixing Nitrogen leakages and improving compressor efficiency.
- Steam systems upgrading includes checking and cleaning the inside surfaces and coils to ensure best heat transfer inside the boilers, optimize combustion efficiency of burners, installing fuel consumption meters, adding thermal insulation to the mixers and any un-insulated surface in the steam network, arresting all steam leakages, using hot water boilers instead of steam boilers for space heating purposes, returning all steam condensate to the condensate tank with installing water conductivity detector, reducing the pressure set point from 8 bar to 5 bar, replacing number of steam traps to avoid steam losses and conducting periodic maintenance for the installed solar heating system for the make-up water.
- Injectable lines upgrading includes ensuring using WFI water as low as possible for washing and applying good thermal insulation on the dry sterilization tunnel.

Maintenance and cleaning operations

This group of measures consists of many good housekeeping (GHK), and better control and management of procedures and staff performance actions which lead to save the consumption of operating materials needed for maintenance, cleaning and OHS such as:

- Conducting periodic preventive maintenance including the register of maintenance history of each equipment.
- Separate and track the costs of spare parts, maintenance and purchasing of testing devices.
- Improve the capacity of maintenance team through continuous training.
- Apply GHK measures and internal control system of PPEs and consumables needed for Occupational, Health and Safety (OHS), and allocate PPEs quality according to the required task, e.g. avoid using sterile gloves for domestic cleaning.
- Separate the supply of cleaning materials for industrial and non-industrial purposes such as ethanol, review cleaning SOPs for them, and record/control the efficient consumption of cleaning materials.
- Conducting raising awareness sessions and training on handling and management of cleaning materials.
- Using saving cleaning tools for better dosing.

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MED TEST III helped us to identify and select the critical areas to focus our efforts on and identify sources of inefficiencies and improvement measures. We at MOBDECO have adopted the material flow cost accounting analysis to reveal the actual cost of raw material losses. Our next step will be to apply the project methodology in other systems.

Mr. Mohammad Oweis
CEO, MOBDECO

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