

MED TEST III Jordan

Transfer of Environmentally Sound Technologies

Chemical sector

Jordan Chemical Industries Company Limited (JCIC)

Company overview

Number of employees:
63 Full-time employees

Key products:
Detergents, disinfectants, floor polish and other cleaning solutions

Main markets:
Local (95%), regional and international (5% - Middle East and South Africa)

Standards & certifications before MED TEST III:
ISO 9001

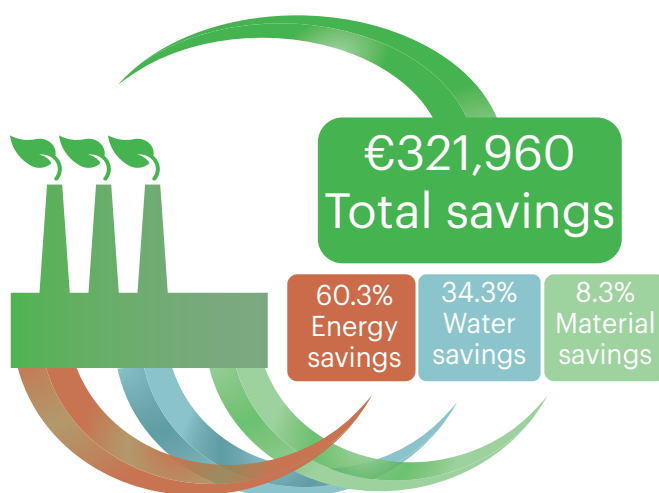
Jordan Chemical Industries Company Limited (JCIC) is a Jordan-based company specializing in manufacturing and selling household cleaning and polishing products. The company offers detergents, disinfectants, floor polish and other cleaning solutions. JCIC markets its products locally and internationally under the brand name "Hypex." The primary market for JCIC is the local market, and 95% of its products cover local demands, compared to 5% destined for export markets. Established in 1980, JCIC has its headquarters in Amman.

Benefits

The MED TEST III project identified total annual savings of 321,960 Euro* (241,471 JOD) in energy, water and raw materials with an estimated investment of 186,890 Euro* (140,170 JOD). The average pay back period is 0.58 years. Of the 30 identified measures, 63% were accepted by the top management for implementation, while 27% of the measures were retained for further study, and 80% of the accepted measures are already implemented or under implementation.

Materials consumption will be reduced by 8.3%, water consumption by 34.3% and energy consumption by 60.3% from implementing the identified measures. Additionally, CO₂ emissions are expected to decrease with 500.1 tons CO₂ -eq. per year from the implementation of identified options.

Identified annual savings



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To advance the company, increase production and reduce losses, we decided to undertake a necessary development process for the company. The best team to achieve this was the team of the Royal Scientific Society through the MED TEST III project because of their great experience in this field.

Mr. Rasmi Al-Mallah
CEO

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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**

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
Savings in raw materials	62,265	132,620	0.5	932 tons	---	Total 500 tons of CO ₂ -eq.
Electricity conservation	122,655	176,310	0.7	----	1,030	
Water savings	1,970	13,030	0.2	6,545 m ³	----	
TOTAL	186,890	321,960	0.58	932 tons 6,545 m³	1,030	

*Exchange rate 0.75 Jordanian Dinar (JOD) = 1 Euro

** Numbers based on production value from 2020

Savings in raw materials

Several good housekeeping measures were managed to reduce raw material losses, such as closing open vessels and mixers, enhancing the layout of the warehouses and production lines, and reorganizing production processes to minimize the potential of human errors and to reduce the time needed for production. Also, this group of measures includes measures that require low to relatively high investments, such as changing the current manual activities into automatic or semi-automatic activities, applying regular maintenance in terms of fixing worn-out pipes and leakage sources, applying better control of the production processes and implementing mechanical handling of raw materials.

Electricity conservation

Several electricity-saving options were recommended as follows:

- Installing power monitoring system.
- Cooling systems' upgrading includes using a cooling tower in winter instead of the existing chiller, replacing some equipment and machines, applying maintenance, insulating the piping network, fixing chilled water leakages and increasing chilled water set point.
- Compressed air systems' upgrading includes arresting compressed air leakages, restricting compressed air uses for specific processes, using one compressor instead of two, maintaining a pressure set point at the recommended level, and applying compressor heat recovery for make-up water heating at the steam generation.
- Steam systems' upgrading includes working at full production capacity, capturing and re-using the escaped steam from the tunnel and using fuel operated steam boiler instead of the electric steam generator to provide steam to the bottle-shrink tunnels.
- Better process control and temperature measurements of the bleach production.
- Upgrading old plastic machines and buying ready plastic bleach bottles and caps instead of on-site production.

Water savings

The water analysis at the company has shown significant savings potential in different facilities, in which all of the identified measures were categorized as low investment requirements. Such measures include; applying pressurized water for cleaning purposes, installing water-saving devices, fixing water leaks and buying RO-treated water instead of operating the existing inefficient RO treatment system.

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After this project, our company has witnessed a remarkable improvement, such as saving energy consumption, reducing losses, improving public safety, increasing profit, refining quality, and optimizing the consumption of raw materials, where the problems of each department were studied and the ideal solution was implemented.

Mr. Rasmi Al-Mallah
CEO

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