

MED TEST III Jordan

Transfer of Environmentally Sound Technologies

Chemical sector

Al Qawafel Agro-Industrial Company (ALQAIC)

Company overview

Number of employees:
96 Full-time employees

Key products:
Fertilizers, micronutrients, pesticides, and seeds

Main markets:
Local (30%), Regional (65%) and International (5%)

Standards & certifications before MED TEST III:
ISO 9001, Environmental Management System (EMS)
ISO14001, ISO 45001, Energy Management System (EnMS)
ISO50001 (achieved during the MED TEST III project)

Established in 1990, Al Qawafel Agro-Industrial Company (ALQAIC) specializes in the manufacturing of fertilizers, micro nutrients, pesticides and seeds. The company aims to become the leader in manufacturing fertilizers and micro-nutrients in Jordan.

The top management realized the importance of an international program that engages expertise in the field of energy, environment management and raw materials warehouses. Through the Jordan Chamber of Industry and the Royal Scientific Society, the company was suggested to participate in the SwitchMed program where the necessary studies and readings were carried out.

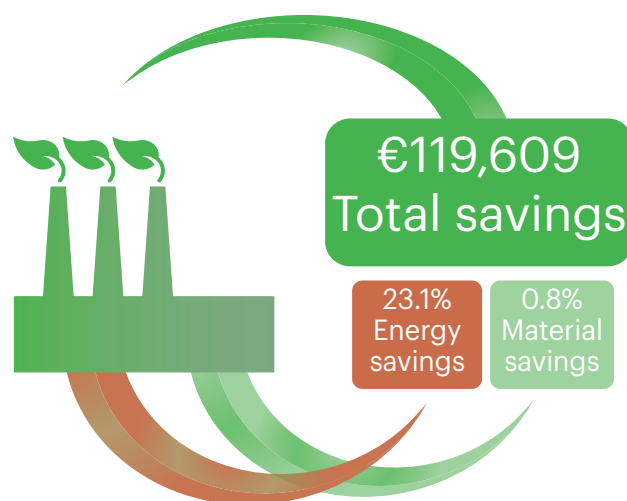
Benefits

The MED TEST III project identified total annual savings of 119,609 Euro* (89,707 JOD) in energy and raw materials with an estimated investment of 91,467 Euro* (68,600 JOD). The average pay back period is 0.8 years, 68% of the identified 22 measures were accepted by the top management for implementation and the others are retained for further study. Of the accepted measures, 73% are already implemented or under implementation.

Materials' and energy consumptions will be reduced by 0.8% and 23.1% respectively from implementing the identified measures. Additionally, 94 tons of CO₂ are expected to be reduced annually from implementing the identified options.

It is important to mention that the economic and environmental gains could not be estimated for 14 of the identified measures since they require further R&D work from the company side, however the company decided to implement five of them since they are no/low cost measures and will improve the production efficiency and storage management. Hence, the overall benefits of the project can significantly increase based on the results of the achieved savings of these measures.

Identified annual savings



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Due to high energy and production costs, and the challenges to compete in the local and foreign markets, it was necessary to look for methods that could improve our production by reducing costs, emissions, and re-arranging warehouses so that more materials could be stored using less space.

Eng. Ahmad Al Bess
General Manager

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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
Raw Materials conservation	16,800	100,240	0.2	105.4 tons	-	Total 94 tons CO ₂ -eq.
Energy conservation	74,667	19,369	3.9	-	360.6	
TOTAL	91,467	119,609	0.8	105.4 tons	360.6	

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

** Numbers based on production value from 2019 and 2020 for energy

Raw Materials conservation

Raw material losses could be minimized by several good housekeeping measures such as, enhancing material preparation and scaling at the warehouse. In addition, a group of measures that require investments could be identified, such as, installing of scrubbers and bag filters at production facilities, maintenance of worn-out pipes and leakage sources, and modifications of production equipment.

Energy conservation

ALQAIC is utilizing both electric and thermal energy sources, in which some energy saving options were recommended. The identified measures will require medium to high investment, and include the upgrading of production lines and the steam system.

The following measures are recommended to reduce the energy consumption in the steam system:

- Inspection and periodic cleaning of the internal surfaces and coils to improve the heat transfer coefficient of the boiler.
- Keep the burner at the optimum combustion efficiency.
- Install fuel consumption meter for monitoring the consumption KPI.
- Add thermal insulation to the mixers and any non-insulated surfaces in the steam network and arrest all the steam leakages.
- Conduct periodic preventive maintenance for the installed solar heating system for the boiler's make-up water.

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After executing approximately 70% of the suggested measures, the results are promising, and we are working on applying all the measures to get the best results. We also got the ISO 50001 accreditation and we are grateful for the support from the RSS team that has helped us to resolve the weakness points, and made it easier to build our EnMS. Al Qawafel would like to thank UNIDO and RSS for their great efforts in supporting the local industry, and it will be our pleasure to continue working with them in their future projects.

Eng. Ahmad Al Bess
General Manager

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