

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.

Egypt

Alexandria Company for Industrial Packages (ACIP) Chemical sector

Context

Number of employees:	240
Key products:	Plastic closures, PET preforms and plastic bottles
Main markets:	Local and export (15%)
Management standards:	ISO 9001, ISO 14001, ISO FSSC 22000, ISO 18001, Sedex registered

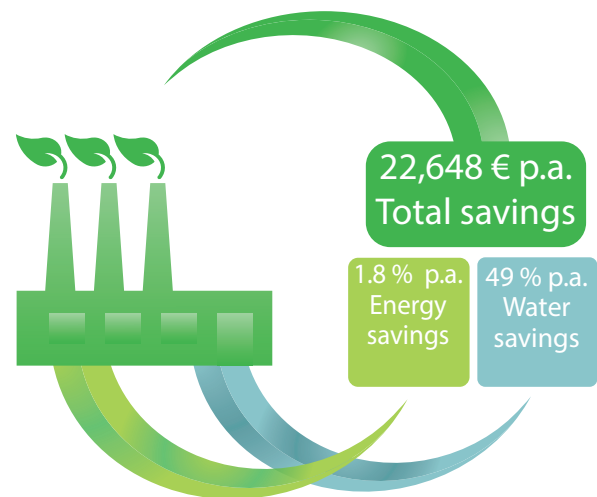
Alexandria Company for Industrial Packages (ACIP) is one of the leading companies for manufacturing of plastic closures and preforms in Egypt.

ACIP is a medium-size enterprise producing around 2,246 t of different types of closures, preforms and bottles annually for local, African and Middle Eastern markets. The company joined the MED TEST II Project to identify possible opportunities to increase its resource efficiency and decrease waste generation. At the project's start, ACIP had an integrated EMS according to ISO 14001 in place, in addition to making continuous efforts to improve its environmental performance while reducing production costs.

“We were interested in joining the MED TEST II Project to gain a different perspective on evaluating our performance efficiency in terms of cleaner production and resource efficiency, and also to get guidance on additional areas of improvements.”

Samy Awad
Chairman

Benefits



Graphic: UNIDO

The MED TEST II project has identified total annual savings of 22,648 euros in electricity and water consumption with an estimated investment of 21,689 euros. The average payback period is nearly one year. Eight resource efficiency measures were identified; two measures are implemented, two further measures are under implementation, another two measures are planned for implementation and two measures are retained for study.

Savings at ACIP are achieved by reducing electricity consumption by about 1.8%, which results in a 1.8% reduction in CO₂ emissions. Also, water consumption would be reduced by about 49% through optimized management, water conservation measures and implementing efficient monitoring and water control systems. The company gained valuable insights through the Material Flow Cost Accounting (MFCA) tool used in the TEST approach. The project also made ACIP realize that it is operating efficiently with minimum losses of raw materials.

Also, the company staff is now much more aware of cleaner production and resource efficiency concepts, due to the several training sessions and close interaction with the MED TEST II team over the project period.

Saving opportunities¹

Action	Economic key figures			Resource savings & environmental impacts per year		
	Investment euros	Savings euros / yr.	PBP years	Water and raw materials	Energy MWh	Pollution reduction
Water conservation measures	2,590	2,460	1	8,631 m ³ of water	-	Total: 65 t of CO ₂
Replacing virgin PET with recycled resin to produce preforms	15,000	15,000	1	Reduction in production costs		
Compressed air conservation measures	250	4,030	Immediate	-	105	
Increase compressor efficiency	3,849	1,158	3	-	30	
Total	21,689 €	22,648 €	1	8,631 m³ of water	135 MWh	

¹ Numbers based on production value from 2016

Water conservation measures

Introducing water conservation measures through water meters for better monitoring, installing water aerators on water taps and reusing the drain water from cooling towers as flush water in the toilets will save on domestic water usage. The implementation of these measures will save about 49% of the total water consumption.

Replacing virgin PET with recycled resin to produce preforms

Recycled PET resins (RPET) can be used in the production of household containers.

This will reduce the cost of raw materials and will also reduce CO₂ emissions by about one third in comparison with the usage of virgin PET.

Compressed air conservation measures

Two measures were identified focusing on reducing compressed air losses by reducing the compressed air bar setting from 40 to 37 bars and by maintaining the compressed air network to prevent leakage.

Increasing the efficiency of the compressed air system

The performance efficiency of the compressed air system can be improved by installing a wet tank before the dryer and automatic drain valve, which will save about 3.5% of the compressed air energy consumption.

Also, installing a variable speed drive on the compressor will lead to a reduction in energy use in compressed air energy consumption of about 8.8%.

Implementation of both these measures will save about 12.3% of the energy for compressed air production.

“Before joining the MED TEST II Project, ACIP had a monitoring and operating system in place. Results of the TEST Project confirmed the efficiency of this system.”

Samy Awad
Chairman

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