

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.

Israel

Amiad Water Systems

Plastic sector

Context

Number of employees:	160 - Kibbutz Beit Zera site
Key products:	Polymer based water filtration systems
Main markets:	Export and domestic
Management standards:	ISO 14001, ISO14064 & ISO 900, OHS 18001

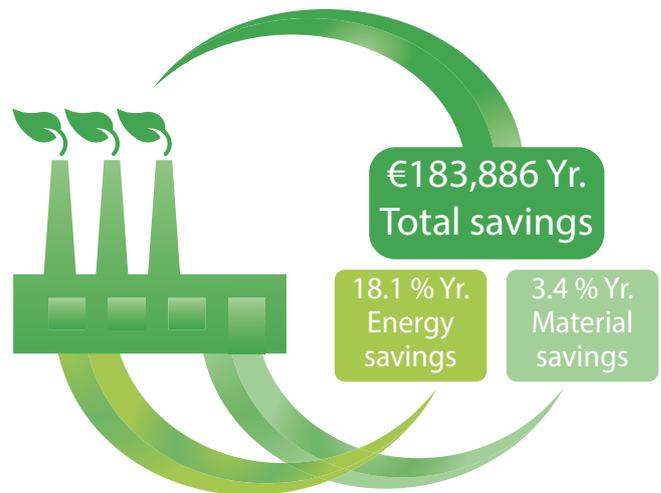
Amiad is a leading provider of polymer based water filtration systems that operates in various production and distribution centers around the world. The MED TEST II project focused on Amiad's site in Kibbutz Beit Zera that employs 160 people. The production volume is 782 tons annually, with about 85% designated for export.

At project start up Amiad had an integrated EMS according to ISO 14001 and in addition made every effort to continuously improve its environmental performance, while reducing production costs and improving its financial performance. This project has provided Amiad with new solutions that can be replicated in its other international sites.

“The MED TEST II project focus on non-product output costs, helped us realize how much money was lost in packing, a fact we were not aware of previously. We initiated an in depth assessment conducting an Eco-Design workshop for our planning department, in order to incorporate design for sustainability aspects from the initial stages of packaging design”.

Shachar Schoukroun , VP of Quality,
Amiad Water Systems

Benefits



Graphic: UNIDO

The MED TEST project has identified opportunities for annual financial savings of €183,886 in energy, water and material with an investment estimated at €162,810. The payback periods of identified projects varies between immediate and 3 years.

Roughly 33% of the identified actions were approved by the company's management and implementation of some of these has already started. These actions achieved 18% saving of total energy usage, and 3.5% saving of total material usage. In parallel to the identification of saving opportunities, the company has established a resource efficiency policy.

Environmental benefits resulting from the prevention of material loss and energy has resulted in a reduction of the solid waste by 22%, and reduction of CO2 emissions by 18%.

Following the outputs of the project, an Eco Design workshop was implemented to identify ways to redesign and minimize packaging material, which are one of the major sources of company's non-product outputs.



Saving opportunities¹

Action	Economic key figures			Resource savings & Environmental impacts per year		
	Investment euro	Savings euro / Yr.	PBP Yr.	Water & Materials	Energy MWh	Pollution reduction
Chillers, lighting and energy monitoring	€150,310	€97,246	1.5	-	710	Total CO2 495 tons Total waste 30.7 tons
Efficient handling of polymers and additives in warehouse and silos	negligible	€30,197	0	10.7 tons raw material	-	
Minimizing cut off and out of specs at injection molding	€12,500	€39,510	0.3	14 tons raw material	-	
Raw material productivity	negligible	€16,933	0	6 tons raw material	-	
TOTAL	€162,810	€183,886	0.9	30.7 tons material	710 MWh	

¹ Numbers based on production value from 2015

Chillers, lighting and energy monitoring

The current lighting and cooling systems consume high levels of electricity. 651MWh will be saved by upgrading and separating the chillers for the injection department and air conditioning, plus replacing of the existing light bulbs to energy-saving bulbs. Installing an energy monitoring system at all major energy consumers can generate additional saving of 59MWh

Efficient handling of polymers and additives in warehouse and silos

The plant warehouse was found to be a significant focus area for raw material losses. Raw material bags damaged by forklifts or by the stacking of wooden pallets containing material bags were major causes for these losses. Simple solutions such as protecting the edges of the wooden pallets, increased spacing between pallet rows and adding a protective sponge to the forklifts achieved 8.9 tons savings of raw material. Furthermore, improved handling of raw material bags in the silos that will prevent the residue material from being left in the bags could save an additional 1.8 tons.

Minimizing cut off and out of specs at injection molding

During the manufacturing of products in the mold, polymer residues are left at the point of injection and are not turned into the final product. On-line automated chopping and reuse of these materials could annually save 10 tons of raw material. Additional steps, such as using "downgrade" and defective materials for purging, could additionally save 4 tons to the total raw material savings.

Raw material productivity

Final products from the injection machines are conveyed via conveyer belts to cardboard containers. Since these containers are not fixed, end products fall onto the floor and are discarded for recycling. Adding barriers and fixed containers will help to reduce the amount of end product falling onto the floor, thus reducing the total product loss. The QA procedure defining products falling on the floor as invalid products will be reviewed.

"As we have production plants in several locations around the globe, we have implemented lessons from this project, such as achieving energy savings in all our other plants"

Shachar Schoukroun , VP of Quality,
Amiad Water Systems

For more information, contact:



United Nations Industrial Development Organization
Environmental Management Branch
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



Weitz Center for Sustainable Development
P.O. Box 12, Rehovot, 7610001, Israel
Telephone: (972) 8 9474111 Fax: (972) 8 9475884
Email: Adi@weitz-center.org
Web: www.weitz-center.org



Green Target E.H.S Consultants
Environmental management division
Yagur 30065, Israel
Telephone: (972) 4 8494055 Fax: (972) 4 8494056
Email: eran@yaadyarok.co.il / Web: www.yaadyarok.co.il