

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

Hanita Metal Works Ltd.

Metal sector

Context

Number of employees:	200-300
Key products:	Cutting tools
Main markets:	Domestic and export
Management standards:	ISO14001, OHSAS18001, ISO9001

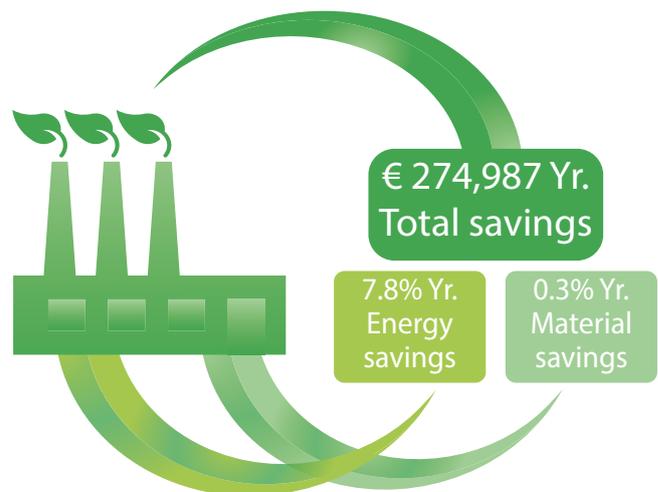
Hanita Metal Works Ltd., part of Kennametal Inc. USA is an Israeli company located in Shlomi, The plant, which employs 200-300 employees manufactures advanced cutting tools for the metal industry automobile and aviation.

The company joined the MED TEST II project in order to adopt a systematic process for saving material and energy resource, which will help promote the competitive edge of the company in the market. Hanita Metal Works is certified for ISO 14001\9001 and OHS 18001.

“Being part of an international corporation we have to continuously upgrade our operational and environmental performances. The MED TEST II project has added significant value to our existing efforts by improving the plant’s efficiency with respect to our use of raw materials and energy.”

Amir David,
Plant manager

Benefits



Graphic: UNIDO

The opportunities identified through the MED TEST II project will enable the company to achieve annual savings of around 274,987 euros in energy and raw materials, with an investment estimated at 421,800 euros, corresponding to a return on investment of 18 months. Approximately 69% of the actions have been approved by Kennametal Inc. top management, and are planned for implementation during 2017.

The gain in electrical power consumption is estimated at 1,172MWh/year, which represents approximately 7.8% reduction in annual energy bill and plant’s CO₂ emissions. A raw material saving plan will help the plant save approximately 2% of the annual solid waste created by the plant.

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
Solid carbide productivity	€950	€28,958	immediate	720 kg raw material	-	Total: 814 t CO ₂ Solid waste 1 t
Optimizing the wheel grinding process	€289,750	€130,129	2.2	417kg raw material	-	
Compressed air system, lighting and efficient motors	€121,600	€70,300	1.7	-	728	
Align Heat/Salt treatment process with the production schedule	€9,500	€45,600	0.2	-	444	
TOTAL	€421,800	€274,987	1.5	1.13 traw material	1,172 MWh	

¹ Numbers based on production value from mid 2014 - mid 2015

Solid carbide productivity

The plant will implement an improved quality plan to address the root causes of manufacturing defective tools. The company will also enlarge the variety of lengths of blanks it purchases to reduce manufacturing scrap when producing small size tools. Furthermore, the company will define quality control procedures for reusing blanks and set up procedures to use plastics for first models and prototypes instead of Solid Carbide blanks. Raw material savings from these measures are estimated at 400 kg per year.

Optimizing the wheel grinding process

To optimize the operation and reduce wear and tear of wheel grinders, the plant will put in place written procedures for periodic maintenance of the wheels. Moreover, the work method for in process venting of the grinding wheels will be updated. Lastly the plant will purchase an automated wet wheel grinding machine, a balancing machine and a measuring machine. These measures will save the plant up to 417 kg of raw material per year.

Compressed air system, lighting and efficient motors

The plant's mist separator uses high energy at idle operation times. The motor's operation will be adjusted to actual air suction time only. Also, an improved monitoring system of air leaks detection will be set up to prevent the ongoing air leaks problems which the plant experiences regularly. The entire plant lighting system will move over to using LED lighting bulbs which will upgrade the lighting system and save energy.

Align Heat/Salt treatment process with the production schedule

The furnaces of the Heat/Salt treatment department are in a continuous operation mode, regardless of actual production requirements. The plant will coordinate the actual operation times of the furnaces with the actual production schedule. This will additionally reduce energy consumption.

“During the work with the advisors we discovered a variety of solutions extending from technological measures to improved working protocols. However, one particularly significant solution was discovered by thinking out of the box and implementing configurations in the manufacturing schedule of one of the processes that will improve our energy savings.”

Amir David,
Plant Manager,

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