

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

Tambour

Chemical sector

Context

Number of employees:	80
Key products:	Paints and chemical additives
Main markets:	Domestic
Management standards:	ISO14001

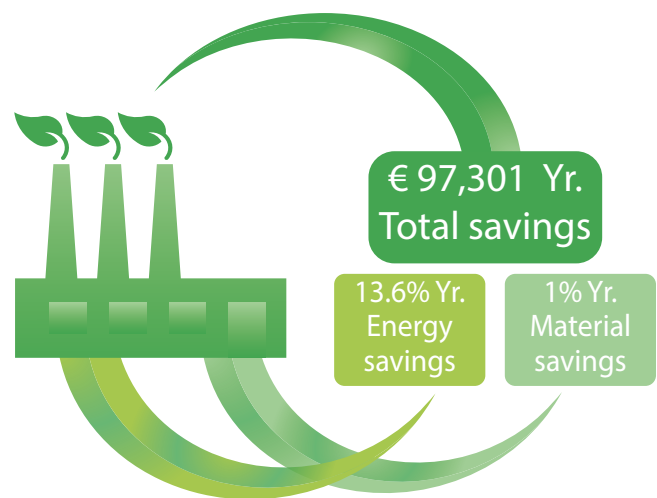
Tambour is a large company with 6 production sites in Israel. The project focused on the Askar site based at Acre in the North of Israel, which produces 12,448,000 liters of paints and additives for the local market annually and has 80 regular employees. The company joined the MED TEST project to identify opportunities for increasing resource efficiency and productivity and reducing air emissions pollution. The projects focused on preventing VOC emissions.

The company was already certified to ISO 14001 when the project started. The company integrated cleaner production and resource efficiency into the existing environmental management system through the MED TEST II project.

“Our main motivation for joining the MED TEST II program was to comply with environmental regulations. Following completion of the project we have understood that we might not be able to avoid investing in end of pipe technology, but we may be able to reduce the installed capacity of the planned unit. This will result in lower investment costs, enabling us to dispose financial resources for preventive measures.”

Ishay Lavon,
VP Operation

Benefits



Graphic: UNIDO

The MED TEST II project identified total annual savings of 97,301 euros in raw material and energy with an estimated investment of 466,250 euros. Some of the identified measures have an excellent return on investment and an immediate payback period. 6 out of the 15 efficiency measures identified in the course of the project were approved by top management and will be implemented during 2017-2018.

Total energy costs will be reduced by 13.6% with improved monitoring of the chillers and cooling towers, and with more efficient heating technology. The total cost of raw material will be reduced by 1%. Environmental benefits will be achieved by a 10% reduction in CO₂ emissions and a large reduction in VOC emissions.

This may result in an avoided investment of 3.9 million euros for an RTO end of pipe technology and annual savings in operating cost of the RTO of 900,000 euros. In alternative a smaller end of pipe solution would suffice to comply with environmental legislation.

In parallel to the identification of saving opportunities, the company has updated its policy, actions plans and internal procedures for integration of cleaner production and resource efficiency into the existing ISO14001 management system.

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
Efficient heating technology and monitoring system	41,250	40,507	1	-	267	Total: 168 t CO ₂
Improved solvent management	125,000	19,500	6.4	26.3 t raw materials	-	3 t waste
Procedures for monitoring and reducing VOC emissions	300,000	37,294	8	54.2 t raw materials	-	80.5 t VOC reduction
TOTAL	€466,250	€97,301	4.8	80.5 t raw materials	267 MWh	

¹ Numbers based on production value from 2014

Efficient heating technology and monitoring system

This measure consists in the installation of electricity gauges and manual measurements for the chillers and cooling towers in order to improve the information system on energy. In addition, the following will be implemented: replacing electrical coil heaters with better heating technology, and replacing diesel fueled heaters with heat pump for producing water to heat raw material.

Improved solvent management

In order to reduce the amount of paint lost during cleaning operations, the employees need to scrape the material from the material tanks. Additionally the liquid used for rinsing is based on solvents and during the washing process VOC emissions are generated. Using a rinsing system which allows internal rinsing with a closed lid will prevent these emissions. Monitoring the quantities of used solvents and installing a vent with a condenser should minimize the VOC emissions.

Procedures for monitoring and reducing VOC emissions

In order to reduce VOC's emissions, many steps will be taken. A closed system for transferring the raw material and an automated system for adding liquid materials will be installed. In addition, the dissolver for the blending process will get covered and improvements on the existing condenser will be done. Furthermore, installation of suitable cover to the supplementary tanks will allow transferring the material through the special nozzles instead of opening the whole cover. Moreover, sealing the tanks with nylon shrinks while waiting for washing will reduce the VOC's dispersion into the production area. Lastly, in the refining process, the sludge output area should be connected to a treatment facility for VOC's, sealing the sludge removal process and an installment of a suction system and a 24 hours delay in removing the sludge will further lower the temperature and reduce emissions.

"The MED TEST II helped us analyze each step of the production process to find where our losses occur. Together we put together the full picture of how to comply with the environmental standards."

Ishay Lavon,
VP Operation

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