



MED TEST Case Study

LEATHER sector — EGYPT

Tannery industry — Atef El-Sayed Tannery

Company overview

Atef El-Sayed Tannery is a medium size private tannery recently established in Alexandria. The tannery produces approx. 231 tons/year of wet blue and crust leather for the local market (10%) and for export.

The tannery joined the MED TEST project to identify opportunities for increasing resource efficiency and productivity and reduce pollution loads to minimize investment/operational costs of the planned wastewater treatment plant.

At project's start there was no formalized management system in place. During the implementation of MED TEST project, the company established a management system for quality according to ISO 9001.

Benefits

The MED TEST project identified annual total savings of \$US 97,377 in water, raw materials, fuel and electricity with an estimated investment of \$US 416,850.

Water costs would be reduced by 30% through applying good housekeeping measures, implementation of monitoring and controlling system for water consumption and recycling of pickling bath.

Total electricity costs will be reduced by 62% through improving the power factor, installing soft starters and inverters at machines and improving the lighting system.



“The MED TEST project helped the tannery to understand the Cleaner Production concept and how to apply its tools in the production processes.”

Mr. Atef El Sayed, Chairman

The identified measures will entail environmental benefits in terms of reducing wastewater pollution loads by about 5% BOD₅ and 7% COD annual loads.

In parallel to the identification of saving opportunities, the site designed and established a management system for quality according to ISO 9001. The company was trained in EMS according to ISO 14001 during the MED TEST in order to be able to integrate CP into the internal quality procedures. This will ensure sustainability of all the identified actions at company level as well as the development of new projects.

MED TEST is a UNIDO green industry initiative to promote sustainability and competitiveness in the private sector in Egypt, Morocco and Tunisia. TEST integrated approach includes tools like resource efficiency and cleaner production, environmental management system and accounting, cleaner technology transfer and CSR.

Learn more about TEST approach at www.unido.org

MED TEST is sponsored by the Global Environment Facility, the Italian Government and the MedPartnership.

Saving opportunities

Measure	Economic key figures			Resource savings per year	
	Savings [USD/yr]	Investment [USD]	PBP [yr]	Water, Chemicals	Energy [MWh]
Good housekeeping	1 119	767	0.7	149 m ³ water, 25 tons materials	
Electrical system, motors and lighting	3 583	5 083	1.4		30
New production machines	88 750	402 667	4.5	5.8 ton product	
Recycling of pickle bath	3 925	8 333	2.1	220 m ³ water, 23 tons chemicals	
TOTAL	97 377	416 850	4.3		30

Good housekeeping: The project identified good housekeeping measures, including: regular maintenance programmes, regular cleaning and washing of equipments to control odor generation, better collection of splits from fleshing to reduce waste accumulation and unnecessary washing; using screens to prevent solids from entering wastewater channels; and activating the grounding system to all machines in the tannery to maintain health and safety for employees. The implementation of good housekeeping measures would save 10% of water consumption and reduce the amount of wastewater discharged to sewage. These measures resulted in reduction of 646 kg/year (5%) BOD and 1,306 kg/year (7%) COD.

New production machines: The company has put in place an investment plan to replace the existing old deteriorated machines with new ones to increase productivity and quality of products as well as environmental performance. New machines are foreseen for toggling, measuring, ironing, spraying, sammying and overhead conveyor for drying the skins that will minimize out of specification products by 5.8 tons/year, reduce time of different tanning processes and ultimately improve labour safety.

Electrical system, motors and lighting: Actions identified to reduce electricity use include: installing power factor correction panel to achieve a standard value in the range of 0.92-0.95; measuring harmonics for checking distortion in the electrical feeder and protecting the capacitors from damage; installing soft starters and inverters on motors (drums) to reduce their electricity consumption; improving the lighting system by replacing the current incandescent lamps with energy saving lamps. The implementation of these options will save 62% of total electricity consumption corresponding to 30 MWh/year.

Recycling of pickle bath: Recycling of pickling bath would require installation of a vessel and a filter: this measure will reduce salinity of the discharged wastewater, which is a major problem of the company, achieve 15% water savings and lead to 23 tons/year of chemicals reduction.



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