



MED TEST Case Study

FOOD sector — MOROCCO

Fish canning industry — CUMAREX

Company overview

Cumarex is a Moroccan company operating in the fish canning sector. The production site, established in 1992, is located in the industrial area of Martil in Tétouan, employing 320 people and generating a turn over of approximately \$US 25M. The main products are canned tuna, mackerel, and melva, which are 90% destined to export.

The company joined the MED TEST project in order to identify opportunities to implement an efficient use of resources (water and energy), improve production processes, valorize fish solid waste and minimize liquid effluents in light of reducing the investment and operational costs of the future wastewater treatment plant.

At the beginning of the project the company was certified ISO9001, it has obtained the IFS V05 and BRC V05 certifications during the course of the project, and is planning to obtain ISO 14001 by the end of 2012.

Benefits

The measures identified within the framework of the MED TEST project will enable the company to save \$US 153,000 in energy, water and raw materials with an investment of approximately \$US 68,000. Moreover, the company has also planned an important project to valorize fish waste extracting proteins and producing fish meal. This project has an investment of \$US 3,8 Millions and a PBP of approximately 3.5 years.

Energy cost savings represent 20% of the annual bill for fuel and electricity, while water cost reduction is approximately 10% of annual costs.

Environmental benefits are expected in terms of reductions of the wastewater pollution load, due to minimized



“Thanks to the MED TEST experience our company has taken a step to implement cleaner production and improve our environmental performance”

Hassan EL BOUZIDI, Director General

material losses entering the drain system and recovery of edible oils from the cleaning of process's equipment. These benefits will reduce the investment and operation costs of the future wastewater treatment plant.

The company has also benefitted from the technical assistance through the introduction of an environmental management system (EMS) and the integration of all the identified resource efficiency measures into its environmental policy, which will enable the company to achieve the ISO14001 certification in the medium short-term. The company has also received a dedicated assistance to introduce an environmental management accounting (EMA) system at its production site.

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]
Electrical system, compressed air, lighting	58 047	39 580	0.68		389
Savings of water and chemicals	18 601	6 864	0.37	Water: 3 031m ³ Soda: 4.6 tons Acid: 1.9 tons Oil: 2.7 tons	
Chillers and cold storage rooms	37 962	10 000	0.28		540
Boiler and steam system	38 177	11 531	0.30	Water: 2 782m ³	1 147
Fish waste valorization	1 099 778	3 875 825	3.5	6 500 tons fish waste	
TOTAL	1 252 565	3 943 800	3.14		2 076

Electrical system, compressed air, lighting: Measures to reduce electricity consumption include: adjustment/increase of the power factor, energy saving lighting system at the level of the entire site, and installation of electricity sub-metering system. The compressed air system has been optimized through a leak inspection programme, reduction of idle operations of compressors and limitation of their usage during peak hours, and installation of regulation valves and of pressure probes on the air distribution network and on the air reservoirs.

Savings of water and chemicals: The implemented actions include: installation of water sub-metering at each process, reduction of overflowing at the level of the fish washing tanks, recovery of steam condensate, use of nozzles and spray guns for floor cleaning, and a leak detection programme for the water softening unit and equipment. The use of chemicals has been reduced by implementing a monitoring system at each workstation.

Chillers and cold storage rooms: Electricity savings will be achieved by regulating high and low pressures of the chillers, insulating cold distribution pipes and surfaces, limiting the use

of chillers during peak hours, installation of air curtains at the entrance of the fish freezing room, and downloading of cold storage rooms in case of exceeding the installed power. The company has installed a heat recovery system on the chiller's condenser; the COP has improved by 50% and water preheated at 30°C is generated to be used in the sanitary and other applications within the process.

Boiler and steam system: Several actions have been identified including insulation of the hot surfaces, closing of the steam condensate system, regulation of boiler and installation of an automatic blowdown system with heat recovery. The company has installed a new system at the boiler's chimney to reduce the air flow. The total of these actions will entail savings of 1,147 MWh/year.

Fish waste valorization: The company has decided to realize a large investment project to extract proteins and produce fish meal from fish waste, which roughly represent 60% of the incoming raw material. A procedure to handle non-conformities and minimize waste generation at source has also been put in place within the existing ISO 9001 et IFS management systems.



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