



MED TEST Case Study

FOOD sector - MOROCCO

Shrimp processing industry – CRANGOMAR Company

Company overview:

Crangomar is medium-sized industrial unit in the food sector located in the free industrial area of Boukhalef (TFZ) in Tangier and specializes in peeling shrimp, primarily “Crangon” shrimp. The company was founded in 2007 as a joint venture between the Van BIESEN (Netherlands) and PIETERS (Belgium) companies with a capital of \$US 1.2 million and employs between 500-800 people, most temporarily. 100% of production is dedicated for export.

The company joined the MED TEST project to identify opportunities for effective resource use (water and energy), improving facility performance, recovering waste shrimp and minimizing discharge, specifically liquid effluent, to reduce investment in and operating costs of a future industrial wastewater treatment plant.

The company is already ISO9001 certified and has also obtained the IFS and HACCP certifications.

Benefits

The actions identified during the MED TEST project were determined to enable the company to achieve an annual savings of about \$US 109,636 for energy, water and raw materials from an estimated investment of \$US 142,706, resulting in payback of 1.3 years. More than half the identified measures were carried out (73%) by end of 2014, and the remainder are scheduled for 2015.

The energy savings were of 29% of the annual energy bill (electricity), which represents approximately \$US 30,349.



The potential for reducing water consumption was 10% through optimization of floor and workstation cleaning, adequate use of equipment for cleaning of floors and production machinery, automation of water closing valves, reduction of overflows at the washing tanks, repairing water leaks, and more.

These actions also helped achieve environmental benefits, including a reduction in the pollution load of industrial waste water via the reduction of losses in the process and recovery of shrimp waste during workstation cleaning operations. These environmental benefits will generate economic gains, and a reduction in investment and operating costs for the future wastewater treatment plant the company plans to install.

The company also benefited from technical assistance in starting an environmental management system (EMS) and the integration of the actions identified in the policy. The company already has IFS and HACCP certification, and is planning for 14001 certification in the medium term.

About MED TEST

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

Learn more about the TEST approach at www.unido.org

Savings options:

Option	Economic key figures			Resource savings per year	
	Savings [USD/yr]	Investment [USD/yr]	PBP [yr]	Water, chemicals	Energy [MWh]
Electrical system	11 788	14 000	1.2		108.5
Saving water and chemicals	3 404	588	0.2	Water: 1635 m ³	666
Cooling groups and distribution system	Chemicals: 730kg		0.8		751
Valorisation of shrimp waste	18 561	22 235	1.2	715 tons waste	172
TOTAL	109 636	142 706	1.3		280.5

Electrical system:

The project identified several measures for reducing power consumption including: power optimization after power factor improvement, installation of electrical meters linked to an energy management system, optimization of lighting in the factory, load shedding of non-critical equipment to avoid exceeding power draw and the attendant penalties. These measures will reduce annual energy consumption by 108 MWh.

Saving water and chemicals products:

Several actions were identified including:

- optimizing washing of workstations and floors using spray pressure taps for washing, as well as stop valves;
- redevelopment of workstations to prevent failures and product losses;
- reducing overflows in shrimp wash units;
- elimination of pipe leaks.

On the chemicals end, cleaning product and disinfectant consumption were optimised by better monitoring and control at the workplace level.

Cooling groups and distribution system:

Several actions were recommended including: insulation in cold room floors and ceilings, optimizing product storage in the cold rooms, thermal insulation of cold surfaces, limiting chiller operation during peak hours, and the shedding of cold rooms if power limits are exceeded.

The company has set up a preventive maintenance program to improve the efficiency and availability of refrigeration equipment. These measures will help to optimize the consumption for a reduction of around 172 MWh.

Valorisation of shrimp waste:

The company set up a solid waste recycling project that involved drying shrimp waste in a dryer and selling the product to animal feed producers. A non-conformities management procedure to reduce waste at source was also set up in accordance with IFS and HACCP certification.

Other waste, such packaging waste and consumables, was collected, separated, baled and sold to recycling industries.



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
 Environmental Management Branch
 Vienna International Center, P.O Box 300, 1400 Vienna, Austria
 Telephone: (+43-1) 26026-0, Fax: (+43-1) 26926-69
 Email: unido@unido.org, www.unido.org



Strategic Partnership for the Mediterranean Sea Large Marine Ecosystem

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