



MED TEST Case Study

FOOD sector — EGYPT

Frozen vegetables and fruits — The Egyptian British Company for General Development (Galina-Agrofreeze)

Company overview

Galina is a medium size joint stock food enterprise. The company produces approx. 10,000 tons/year of frozen vegetables and fruits for export.

The company joined the MED TEST project to improve its environmental performance, identify opportunities for increasing resource efficiency through solving the existing problems which mainly include: high water consumption, materials and energy losses.

At project's start the company was already certified ISO 9001, food safety according to HACCP of CODEX, while OHSAS 18001 was under development. The company just started designing EMS according to the ISO14001, BRC global standard for food safety.

Benefits

The MED TEST project identified annual total potential savings of \$US 113,499 in water, raw materials and fuel with an estimated investment of \$US 32,500. The average simple payback period is less than 3 months. Most identified measures are planned to be implemented in the near future.

Water costs would be reduced by 50% through applying good housekeeping measures, preventive maintenance programme, implementation of monitoring and controlling system for water consumption, dry cleaning of floors in different units and improved technique for equipments washing.

Electricity costs could be reduced by 10% through preventive maintenance programme for compressors and cooling towers, improving the lighting system and measuring harmonics. In addition the company can implement heat recovery at the blancher in order to reduce thermal energy consumption.



“MED TEST supported the company in identifying saving opportunities and we are satisfied with its methodology”

Dr. Abd EL WAHED SOLIMAN, Chairman

Environmental benefits could be reached in terms of reducing the wastewater pollution loads corresponding to 55% BOD₅, 40% COD and 15% TSS annual loads, mainly resulting from good housekeeping measures, water conservation measures and upgrading the packaging units which will reduce product losses entering the drain system.

In December 2011, as a follow up to the identification of saving opportunities, the company has requested the assistance of the MED TEST team to design EMS according to ISO14001, BRC global standard for food safety as well as updating the existing ISO 18001, fully integrating resource efficiency into company policy, action plans and internal procedures. This will ensure sustainability of all the identified actions at company level as well as the development of new cleaner production 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, materials	Energy [MWh]
Preventive maintenance	16 471	18 002	1.1	4 727 m ³ water	350
Water conservation	16 040	6 165	0.4	40 100 m ³ water	
Upgrading packaging unit	80 988	8 333	0.1	124 tons product	
TOTAL	113 499	32 500	0.3		350

Preventive maintenance: The site could implement an effective preventive maintenance programme for reducing water, materials and energy losses. These include: insulation of pipes and replacement of the evaporator with new one in the refrigeration system; reuse of defrost water; periodical maintenance of the compressors and cooling towers; improving the hygienic conditions and lighting system in the packaging unit; measuring harmonics for checking distortion in the electrical feeder and protecting the capacitors from damage. The implementation of these measures could save 10% of electricity consumption, 5 % in water consumption and wastewater generation. The BOD and COD would be reduced respectively by 3% (142) kg/year and 3% (213) kg/year.

Water conservation: There are several measures identified by the project for reducing water consumption. These included: dry cleaning of floors; installation of water meters at the source of

the feeder with effective monitoring plan; improving technique of floors and equipments washing. The total water consumption could reach 42% reduction with a significant impact on the capacity of the WWTP that the company plans to install in the future. BOD and COD pollution load would decrease respectively by 1.2 tons/year (27%) and 1.8 tons/year (22%).

Upgrading packaging unit: Installing new automatic packaging machines could reduce 15% of product losses generated during the manual packaging and increase productivity of the site. The implementation of this high investment project could reduce solid waste generation and increase product recovery by 124 tons/year. This option would also reduce the discharge load of BOD by 1.1 tons/year (25%), COD by 0.4 tons/year (5%) and TSS by 0.5 tons/year (15%).



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