

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.

Egypt Sphinx Glass Company Chemical sector

Context

Number of employees:	330
Key products:	Clear glass, automotive glass, tinted glass, tinted coated glass and coated glass.
Main markets:	Local and international markets (40 % export)
Management standards:	ISO 9001:2008, ISO 14001:2004 BS OHSAS 18001:2007 CE Mark

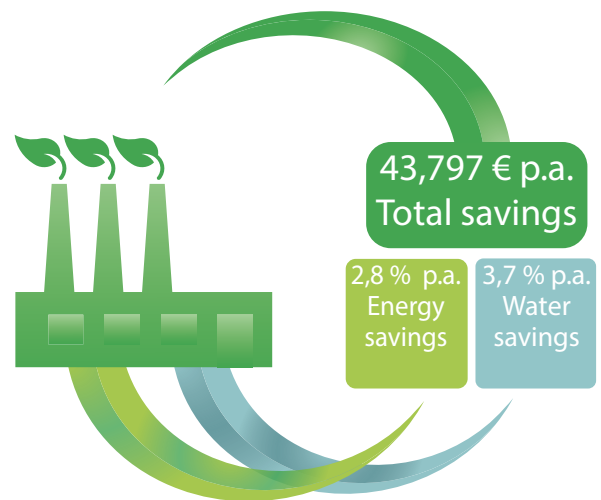
Sphinx Glass Company is considered one of the largest private companies in Egypt in the field of float glass manufacturing since 2009. It specializes in the production of clear float glass, tinted float glass and online coated glass which conforms to international standards using a state-of-the-art facility designed by technology provider PPG to melt 200,000 t/year as its design capacity.

Sphinx has participated in MED TEST II project as the top management believes completely in integrated environmental management, which will lead to further improvement in the environmental situation and save on their natural resources.

“The MED TEST II project and its simple methodology have added significant value to our existing efforts towards improving the plant’s efficiency with respect to natural resources.”

Mohamed Marzouk
Production Manager

Benefits



Graphic: UNIDO

MED TEST II project has identified annual total saving of 43,797 Euro in water and electricity with an estimated investment of 53,103 Euro with an average pay back period of 1.2 years. This saving is achieved by implementing 5 measures which were approved by the company management. One of the measures has been already implemented three others are under implementation while the last is planned.

Saving at Sphinx Glass is mainly in electricity which can be reduced by 2.8%, resulting in a reduction of 529 tonnes/year of CO₂ emissions. Water would be reduced by 3.7% through applying water conservation measures to domestic water usage and the implementation of monitoring and controlling system.

The project promoted the adoption of an energy monitoring plan for the large fans. The company is also preparing for ISO50001:2011 certification, and was provided with a guide to establish RECP integrated EMS system. In addition, Sphinx is upgrading its ISO14001 to be compatible with its 2015 version.

Saving opportunities¹

Action	Economic key figures			Resource savings & environmental impacts per year		
	Investment euros	Savings euros / yr.	PBP years	Water and raw materials	Energy MWh	Pollution reduction
Water conservation measures	728	1,377	0.4	4,830 m ³ of water	-	Total: 529 t of CO ₂
Optimisation of the water cooling station	17,500	17,571	1	-	456	
Replacement of lights to LED	34,875	24,849	1.4	-	645	
Total	53,103 €	43 797 €	1.2	4,830 m³ of water	1,101 MWh	

¹ Numbers based on production value from 2015

Water conservation measures

The installation of metering devices for water flow will allow good monitoring and control of water consumption and wastewater discharge while introducing water conservation measures through installing water aerators on water taps which mix air with water and implementing cistern displacement for reducing domestic water usage. The implementation of these measures will save about 3.7% of water consumption.

Optimisation of the water cooling station

The water cooling station at Sphinx Glass accounts for almost 20% of the electricity consumption at the plant. The improvement of the water pump control system by installing variable frequency inverters will result in an energy saving of 456.4 MWh/year, and a reduction of CO₂ emissions, of 219 t/year.

Replacement of light to LED

Electricity consumption will be reduced by replacing inefficient lighting units with more efficient LED units, decreasing lighting units in halls, and the installation of motion sensors.

Good housekeeping measures

A number of good housekeeping practices will reduce losses of raw and auxiliary materials through: Maintenance of sand conveyor and bucket lifts, improving labour awareness to apply housekeeping procedures during materials handling and transport in addition to the immediate collection of any spilled raw or auxiliary materials.

“This project has showed us how to use a systematic methodology to identify and evaluate the feasibility of any future saving opportunities for the Sphinx Glass Company.”

Mohamed Marzouk
Production Manager

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