

Industrial Energy Efficiency Project

In order to introduce a structured approach to energy management in operation, El Araby for Trading and Manufacturing Company joined hands with the GEF funded project, “Industrial Energy Efficiency in Egypt”. This project is implemented by the UNIDO in partnership with the Egyptian Environmental Affairs Agency, Ministry of Industry, Trade and SMEs and the Federation of Egyptian Industries. The project has helped El Araby TM to implement Energy Management System in alignment with ISO 50001 for an overall improvement in energy efficiency and improve environmental impact.

EGYPT

A Case Study of El Araby for Trading and Manufacturing “El Araby TM”

El Araby TM EnMS Snapshot

Industry:

Engineering industries

Location: Benha, Egypt

Product: Home Appliances

Implementation cost: ~ 0.180 MEGP

EnMS Scope: Electricity & natural gas

Annual Energy savings: ~ 1.8 GWh

Financial savings: ~ 0.96 MEGP

GHG reduction: ~ 1,395 tons CO₂eq

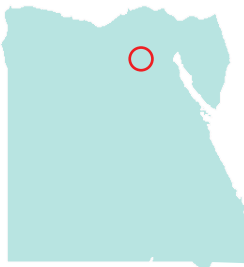
Overall payback: ~1.5 years

Objectives period: 5 years

Project Status: ISO 5001 certified in July 2016

Time to implement EnMS: 1.3 years

Founded in 1982, **Elaraby for trading and Manufacturing**, a member of Elaraby Group, produces home appliances such as irons, food blenders, ceiling fans, exhaust fans, vacuum cleaners, etc. the company also produces components for other companies within El Araby Group. The company occupies an area of 50,000 m² and currently employs 4,500 staff members



Implementing EnMS in Araby TM is the way out

El Araby Group has a long term commitment to continuously improving of management techniques; which is demonstrated by the early adoption of ISO 9001 & 14001 management systems. Upon the energy shortage in Egypt the group management was looking for possible ways to spare some of the licensed power supply to be used for new projects; therefore, introducing EnMS provided a way out for the sought after: energy for new projects. In February 2015, El Araby TM has started its cooperation with UNIDO aiming to improve the company’s energy performance.

Through this cooperation strong efforts were put in building a systematic approach to energy management, which was crowned by the company’s certification of compliance with ISO 50001.

El Araby TM ambitious EnMS objectives

El Araby TM has assigned its EnMS objectives with an approach of applying energy efficiency measures in order to improve facility-wide energy performance. The objective is to reduce 10% of the consumption of each of electrical and thermal energy by EOY2020.

UNIDO, a key player in El Araby success

With UNIDO's support, El Araby TM staff was engaged in a thorough process to review and analyze the company's historic energy consumption and performance. Throughout the process, the team has developed energy policy, defined the EnMS scope

and boundaries and carried out a thorough energy review. In addition, the company has focused, at the beginning, on identification of no/low cost measures to save energy; then identified energy saving opportunities that requires investments.

Energy Saving Opportunities

Implemented Saving Opportunities					
S	Implemented Energy Saving Opportunities	Elect Savings MWh	Savings MEGP	Investment MEGP	Payback Year
1	Fit VSD to all injection machines	920	0.460	0.100	0.21
2	Install insulation to injection machines	329	0.165	0.025	0.15
3	LED lighting retrofit and Lighting optimizarion	484	0.249	0.092	2.78
4	Optimize chiller temperature settings	15	0.007	-	-
5	Installation of soft starters	8	0.004	0.005	1.25
6	Fit Directional valve to main air supply, reduse pressure setting	120	0.62	0.050	0.5
7	Install medium voltage automatic regulator	360	0.185	0.620	3.25
Total		1,876	0.964	0.852	

Barriers

Since the top management of El Araby Group was highly committed to implement EnMS in all group companies, the implementation in El Araby TM experienced a smooth implementation. However, the only barrier experienced was the misconception of the company's team that implementing EnMS and improving the energy efficiency of the plant is the responsibility of the maintenance team only; accordingly, all aspects of EnMS were not properly implemented . Thus, and with the support of IEE project, UNIDO consultants and the group management, more members from operation, planning procurements and Quality departments were actively engaged in the process of establishing and implementing the EnMS.

Lessons Learned

Implementing EnMS went smoothly and a fairly short time, 16 months from introduction to certification, for the following reasons:

- the very strong commitment and involvement of the top management
- availability of electrical energy consumption records and corresponding production data up to machine level
- openness and confidence between team members and consultants

the experience of implementing EnMS at Elaraby TM has proved that: even for relatively low consumption and low energy sharing in the final product cost, the case of engineering industries, significant EnMS befits are achievable.



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