

Industrial Energy Efficiency Project

In order to introduce a structured approach to energy management in operation, Elaraby for Home Industries Company has 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 "Elaraby HI" 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 Elaraby for Home Industries Company "Elaraby HI"

"Elaraby HI" EnMS Snapshot

Industry: Home industries

Location: Quessna, Egypt

Product: electric water heaters

Implementation cost: ~0.100 MEGP

EnMS Scope: electricity

Annual Energy savings: ~62.4 MWh

Financial savings: 0.034 MEGP

GHG reduction: ~46,176 tons CO₂eq

Overall payback: ~ 1 year

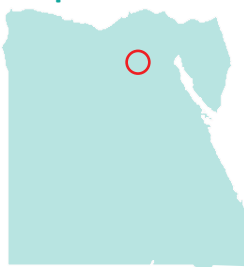
Objectives period: 2 years

Project Status: ISO 50001 Certified, January 2017

Time to implement EnMS: 1.3 years

"Elaraby for Home Industries" is a member of Elaraby Group for engineering industries, specialized in production of electric water heaters of different capacities for home applications. Currently the company is installing new line to produce gas water heater by the end 2017 (not covered by the boundaries of EnMS at the moment). The company occupies an area of 10,000 m² and employs 150 staff member.

The company applies certified management systems according to ISO 9001, ISO 14001, OHSAS 18001 and ISO 50001.



Implementing EnMS in "Elaraby HI" 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 group management has decided to join UNIDO and to implement the EnMS at all companies of the group even at El Araby for home Industries; whose electrical consumption is very marginal.

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 in January 2017.

"Elaraby HI" ambitious EnMS objectives

Despite the very low electrical consumption, the company energy team managed to identify energy saving opportunities that lead to setting of saving 15% of the yearly electric consumption by the year 2017.

UNIDO, a key player in "Elaraby HI" success

Cooperation with UNIDO has helped Elaraby HI to link the already existing intention to reduce energy consumption with the systematic approach that helps to turn intentions into reality and sustain the improvements. The energy team with UNIDO support has gone through:

- establishing energy policy
- carry out awareness campaign in energy efficiency and EnMS
- conducted an energy review
- quantifying and documenting significant energy uses for electricity

- identifying drivers and developing baseline for each SEU
- identifying opportunities for energy saving
- developed an action plan
- setting objectives and targets
- identified & documented legal and other requirements
- planning and implementing management review
- carry out EnMS internal audit
- get audited and by a certification body and become ISO 50001 certified

Energy Saving Opportunities

Planned Saving Opportunities					
S	Planned Energy Saving Opportunities	Elect Savings MWh	Savings MEGP	Investment MEGP	Payback Year
1	Re distribute lighting and fans loads on control panels	8.40	0.004	0.001	0.022
2	Replace lights in presses section (15 high pay 500 watt to 3 high pay 400 watt) by correcting their position only	12.00	0.006	-	0
3	Replace lights in all the factory to LED	42.00	0.023	0.065	2.81
Total		62.40	0.034	0.066	

Barriers

Elaraby HI Company faced some barriers during Implementation of EnMS.

- Lack of energy consumption records, as the company used to have, before EnMS, one bill for the total electricity consumption of the company entered in the company accounts as general administration expenses.
- As the company is expanding and installing new production line, the energy team members were overloaded; which resulted in delaying development of the system.
- Delaying the installation of sub-meters on SEU level delayed the analysis on SEU level.
- The load profile and users were changed as new equipment started to come in; which significantly changes the consumption and distribution.

Despite those barriers, the team has managed the challenges and finished building a certified EnMS.



Lessons Learned

The experience of implementing the EnMS at Elaraby has yielded the following lessons:

- A strong management commitment, the availability of competent energy team and support of other departments certainly results in building an EnMS and achieving improvements of energy performance.
- Even for companies with very small energy consumption, improvement of energy performance is possible and cost effective.



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