

Industrial Energy Efficiency Project

In order to introduce a structured approach to energy management in their operations, El Araby AC 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 El Araby LT Company to implement an Energy Management System in alignment with ISO 50001 for an overall improvement in energy efficiency and improve environmental impact.

EGYPT

A Case Study El Araby Lighting Technology Co.

El Araby LT Snapshot

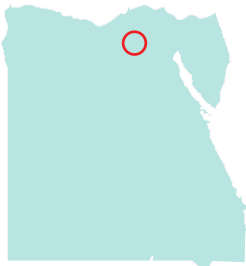
Industry:

Engineering

Location:

Menoufia, Egypt

Product: Lighting products



Implementation cost: 315,000 EGP

EnMS scope: Electricity and N. gas

Annual energy savings: ~4.5 GWh

Financial savings: ~1.2 million EGP /year

GHG reduction: ~24.8 ktCO₂eq (10 y)

Overall payback: 3 months

Objectives period: 2015 - 2016

Time to implement EnMS: 16 months

El Araby El Araby Group has established El Araby Company LT in 2002. Later in 2003 the fluorescent lamp factory was established and the first production line started operation. In 2006, production lines were added and production increased volume reached about 25M lamps annually. The company distributes 90% of its products of lamps in local markets and exports the rest. Currently the company employs 1,446 persons and dominates around 52% of the Egyptian lamps market.



EnMS Implementation at El Araby LT

El Araby Group has a strong long term commitment to continuously improving its management techniques. In February 2015, El Araby LT 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 AC Ambitious EnMS Objectives

El Araby LT has set its EnMS objectives with an approach of ensuring full commitment of all staff from top management, supervisors and operators on all levels of the organization. El Araby AC assigned the following objectives:

- Reduce Electrical Consumption by 10% by EOY 2016

UNIDO, a Key Player in the Company's Success

With UNIDO's support, El Araby LT staff was engaged in a thorough process to review and analyze the company's historic energy consumption and performance. The team has developed their energy policy, defined the EnMS scope and boundaries and carried out a thorough energy review. In addition, the company has focused on the optimization of many water pumps and compressed air system after realizing the huge savings potential

Implemented and Identified Energy Saving Measures

Description	Energy Savings (kWh)	Financial Savings (EGP)	Capital Cost (EGP)	Payback (Year)
Implemented Energy Saving Opportunity Measures				
Optimizing the cooling tower pump of the Foam factory	198,560	100,273	20,000	0.20
Optimizing the cooling pump of the Glass factory	136,800	69,084	43,000	0.62
Tie the well water pumps (22 kW) of lamp and glass	48,048	24,264	7,000	0.29
Planned Energy Saving Opportunity Measures				
Optimizing the air compressors of the Foam factory	271,200	136,956	0.00	0.00
Air compressor glass factory: decrease the pressure setting	96,800	48,884	0.00	0.00
Exhaust group lamp factory: decrease 3 vacuum pumps per line	135,907	68,633	50,000	0.73
Decrease the heat load of the lamps and glass factories	675,200	340,976	75,000	0.11
Connect the two chillers of both the lamps and glass factories	2,741,250	315,243		
Glass factory: change all lighting to LED	116,295	58,729	47,432	0.78
Lamp factory: change all lighting to LED	47,520	23,997	21,000	0.88
Lamp administration building: change all lighting to LED	88,080	44,480	52,010	1.17
Total	4,555,660	1,231,519	315,442	0.26

Barriers

Since the top management of El Araby Group was highly committed to implement an EnMS in all its companies, the implementation in El Araby LT experienced a smooth implementation.

However, the only barrier experienced was to change the company's staff dominant culture that energy efficiency is a the sole responsibility of the maintenance team. In cooperation with UNIDO consultants several staff awareness sessions and capacity building workshops were conducted.

As a result the energy team was reformulated and higher staff involvement in the implementation process of the EnMS was clearly noted. The result was the implementation of systematic and effective EnMS with the involvement of company staff at all company's levels and functions.

Lessons Learned

The implementation of the EnMS at El Araby LT has proven to be both easy and cost effective. Strong management commitment was demonstrated by the allocation of adequate technical and financial resources.

Furthermore, it has proven that without the involvement of different departments in the energy team, the EnMS would not be implemented effectively. It is necessary to include all relevant staff member at all stages of implementation.

For more information:

UNIDO Project Management Unit in Egypt:

Email: iee-egypt@unido.org

Phone: +20 (2) 2380 0357

UNIDO Headquarters:

Rana Ghoneim: r.ghoneim@unido.org

Phone: +43 (1) 26026 4356

or visit: ieegypt.org