

Industrial Energy Efficiency Project

In order to introduce a structured approach to energy management in operation, Suez Cement 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 Suez Cement Company to implement Energy Management System in alignment with ISO 50001 for an overall improvement in energy efficiency and improve environmental impact.

EGYPT

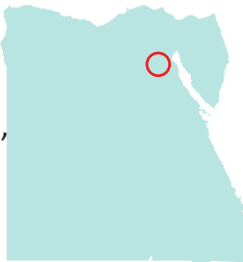
A Case Study of Suez Cement Company

Suez Cement Company : Katameya Plant Snapshot

Industry: Cement industries

Location: Kattameya, Cairo, Egypt

Product: Cement



Implementation cost: ~0.144 MEGP

EnMS Scope: Electric & thermal energy

Annual Energy savings: ~70.43 GWh

Financial savings: ~ 19.08 MEGP

GHG reduction: ~ 18,088 Metric Ton CO₂eq.

Overall payback: ~3.5 years

Objectives period: 4 years

Time to implement EnMS: 2 years

Suez Cement Company has two plants; Katameya 1.6 mtpy (million ton of cement per year) and Suez 3.2 mtpy. The company is a member of Suez Cement Group which also includes Tourah C. C., and Helwan C. C. The group produces 12 mtpy and employees 3400 persons. All companies of the group are certified of different management systems: ISO9001, ISO14001 and OHSAS 18001.



Implementing EnMS in Suez Cement Company is the way out

As energy cost represents a significant percentage of cement production cost, the increase in energy prices affected severely the cement industry economics; especially that it happened at a time of low demand on cement. Suez Cement Company is striving to reduce energy consumption; to optimize cost of production and improve the company competitiveness.

Adopting EnMS has provided a systematic approach to monitor and analyze energy consumption in addition to identification, implementing and follow up of energy saving opportunities. EnMS additionally provides the framework to achieve energy efficiency from low-cost or even zero cost measures.

Suez Cement Company EnMS objectives

The company is committed to reducing energy consumption and increasing energy efficiency through a number of identified opportunities that were thoroughly studied and energy saving is estimated and the relevant measures were taken into action plan. The expected savings were the bases of setting the objectives of energy performance

UNIDO, a key player in the plant's success

With the IEE project support and training, key principles of EnMs have been introduced and implemented by the company leading to significant value added in staff practices:

- Management became committed to the introduction of EnMS in the company and allocated resources for implementation of the system in terms of manpower, purchase of energy meters, training etc.
- Activities in all company departments have impacts on energy performance and efficiency.
- The management appreciates that no cost and low cost measures can reduce energy consumption.
- Identification of opportunity lists encouraged the teams to lay out EnMS action plans based on specific expertise.

Saving opportunities

Implemented Opportunities						
S	Implemented Energy Saving Opportunities	Elect Savings MWh	Fuel Savings MWh	Savings MEGP	Investment MEGP	Payback Year
1	Refractory works of preheater & kiln Replace kiln inlet seal gland, ceramic ropes		53,105	12.69	3.20	0.25
2	Install dynamic separator in coal mill	2,000		0.90	3.00	3.33
Total		2,000	53,105	13.59	6.20	

Identified and Planned Opportunities						
S	In-Progress Energy Saving Opportunities	Elect Savings MWh	Fuel Savings MWh	Savings MEGP	Investment MEGP	Payback Year
1	Operate only one bucket elevator instead of two, unless it is needed and Stop calciner air fan when no HFO or Coal	550	-	0.248	0	0.00
2	Reduce Upper limit of chute meal temp and Use mix of shredded/ un-shredded tires to reduce the running hours of the shredder	1,037	6,700	2.07	0	0.00
3	Modification of a compressed air system and stop one compressor	1,000	-	0.45	0.20	0.44
4	Install double flap gate for mill 1 & 2	2,000	-	0.90	3.00	3.33
5	Install LED lighting all over the plant & install motion sensors in the offices	583	-	0.26	1.02	3.89
6	Install a bucket elevator for kiln feed instead of the air lift	3,456	-	1.56	5.00	3.22
Total		8,626	6,700	5.48	9.22	

Barriers

During the planning and implementation phases of the EnMS, barriers faced were mainly related to:

- Staff were more concerned with production security than energy issues.
- Energy team members were very busy with their original work commitments.
- Staff feeling that there is little room to improve energy performance.

These were overcome by:

- Conducting awareness sessions
- Linking the EnMS with the other management systems in the company

Lessons Learned

Implementing EnMS in Suez cement company, the following are valuable lessons:

- Using cross-functional team building helps to eliminate barriers between staff in different departments.
- Reducing production interruptions decreases frequent startup which is translated to significant improvement in energy performance.
- Linking the EnMS with the other management systems in the company helps to reduce the time required to introduce and implement EnMS.

For more information:

UNIDO Project Management Unit in Egypt

Email: iee-egypt@unido.org

Phone: +20 (2) 27943477

+20 (2) 27941993

ieeegypt.org

UNIDO Headquarters:

Rana Ghoneim: r.ghoneim@unido.org

Phone: +43 (1) 60264356

unido.org

