

Industrial Energy Efficiency Project

In order to introduce a structured approach to energy management in their operations, Sidi Kerir Petrochemicals (Sidpec) 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 Sidpec 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 of Sidpec

Sidpec Snapshot

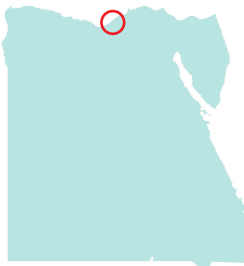
Industry:

Petrochemicals

Location:

Alexandria, Egypt

Product: Ethylene,
Polyethylene



Implementation cost: 300,000 EGP

EnMS scope: Electricity and fuel gas

Annual energy savings: 40,000 MWh

Financial savings: 8,300,000 EGP

GHG reduction: >100,000 tCO₂eq

Overall payback: 4 months

Objectives period: 3 years

Time to implement EnMS: 1 year

Sidpec produces about 300K MTY of ethylene, 225K MTY of polyethylene, 50K MTY of LPG and 10K MTY of butane-1 targeting international markets with about 50% of its production.



Implementing EnMS in Egypt is the way out

Under a pressuring energy situation in Egypt with rising energy costs and insecurity in supply, it was clear to the company's top management that a serious commitment to improving their energy performance to reduce their overall costs is the way out. Thus, concrete steps have been taken to adopt an EnMS that is compliant with ISO 50001.

Sidpec ambitious EnMS objectives

SIDPEC assigned its EnMS objectives based on a corporate level which is very challenging to achieve without consistently working outside the comfort zone and demonstrating corporate commitment and confidence. In this context, SIDPEC assigned the following objectives to be achieved by 2018:

- Reduce Electrical Consumption by 10 %
- Reduce Imported Fuel Gas Consumption by 10 %
- Energy Awareness Training of 80 % of personnel

UNIDO, a key player in the plant's success

With UNIDO's support, Sidpec staff were engaged in a one year process to implement an EnMS compliant with ISO 50001 starting with securing management commitment till third party auditing and certification.



Saving opportunities achieved

Measure	Savings MWh	Savings EGP	Investment EGP	Payback Month
Excessive air utilization	1,700	850,000	0	immediate
HS vents waste optimization	24,000	4,000,000	0	immediate
Optimization of Nitrogen Unit	1,800	900,000	0	immediate
Rationalization of Extruder energy consumption	2,000	1,000,000	0	immediate
Minimizing steam leakages	9,000	1,000,000	130,000	<2
Reduce Electricity Consumption of Cooling Towers	600	30,000	50,000	20
Totals	39,100	7,780,000	180,000	<1 months
<u>Notes:</u>				
– Savings and Investments will be fully achieved by 2016				

Barriers

Although the implementation of EnMS at SIDPEC was smooth due to the strong management commitment, the company's energy team has faced some challenges and barriers along the way. Barriers faced during implementation of the EnMS were mainly related to:

- Resistance to change
- Motivation as it was believed that there are low financial benefits from EnMS in comparison with the company annual profit

These were overcome through:

- Conducting awareness sessions
- Linking the EnMS with the environmental performance and sustainability requirements
- Linking the EnMS with the continuous improvement activities already achieved by Lean Six Sigma methodology

Lessons Learned

The implementation of the EnMS in SIDPEC has proven to be both easy and cost effective giving a strong management commitment and the availability of adequate technical resources. No/Low cost measures have proven to be a strong tool in convincing all company staff of the potential benefits that could be achieved if a commitment to continuous improvement becomes an integrated part of the company's culture and day-to-day behavior.



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