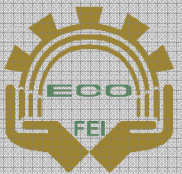


Federation of Egyptian Industries

Environmental Compliance Office
and Sustainable Development

Achievements in Emission Reduction in Industrial Sectors

Eng. Ahmed Kamal
ECO Manager

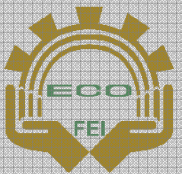


ECO Establishment

- Establishing Environmental Compliance and Sustainable Development Office, a Department of special nature in the Federation of Egyptian Industries (FEI) to provide technical consultations and services in environment and sustainable development.

FEI/ECO Mission

“Promoting the sustainable application of Cleaner Production (CP) and Energy Efficiency (EE) in order to increase the productivity of Egyptian industry and reduce risks to people and the environment”



FEI/ECO Aims

- to encourage industry's compliance with environmental legislation
- to promote environmental investments by offering soft loans
- to improve the occupational health and safety situation in enterprises
- to create production and export opportunities for ECO clients
- to assist the industrial community to achieve the social responsibilities.

Financial Support

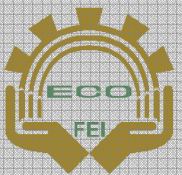
An agreement was signed by EEAA, FEI and the National Bank of Egypt (NBE), to implement CP and Energy Efficiency in the industrial sector to support initiatives against pollution and encourage environmental compliance through providing soft loans reach up to EGP 3 million per enterprise carrying a 2.5% interest rate per year.

Loans are repaid over 5 years and funds are reused for financing new Cleaner Production initiatives in other enterprises.

Work sectors

- Eco is work in applying the cleaner production's methods and environmental management in small and medium enterprises and boosting this application.
- There are five sectors in which ECO is working in its primary stage:
 - Textile industries
 - Food industries
 - Engineering industries
 - Metallurgical industries
 - Chemical industries

in addition to Energy Efficiency Sector



Key Elements of the work

Organizing workshops for the workers throughout Egypt:

- Great Cairo initiative
- Alexandria initiative
- Kafr El Sheikh initiative
- Aswan initiative
- Mansoura initiative
- El Mahala initiative
- Meet Gamr initiative
- Assuit initiative



Key Elements of the work

- **Practical training programs directly in the production lines**



Business Networking

- National Bank of Egypt (NBE)
- Industrial Development Bank (IDB)
- CIDA
- B2B
- IMC



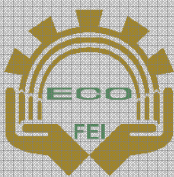
DAG Visit

- The Donor Assistance Group (DAG) in Egypt has praised the country's efforts to limit industrial emission and encourage application of cleaner production.

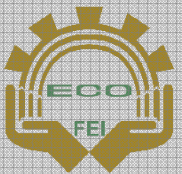


Statement of enterprises financed by the office

The current state	Total amount	Number of enterprises
Enterprises with a paid out	66.400.200	58
Enterprises with complete technical studies and are in the process of being approved	4.600.000	6
Enterprises that are currently in the process of technical study approved	5.000.000	8



Achievements in Emission Reduction in Industrial Sectors

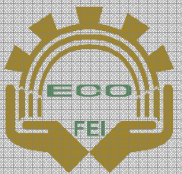


What Are the Project Indicators?

■ Emission Indicators:

■ Total emission reductions achieved by CP implementation in:

1. SO₂
2. CO₂
3. PM10
4. Wastewater
5. COD
6. Heavy metals



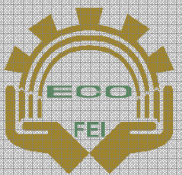
What Are the Results So Far?

58 implemented projects

Achieved Reductions	Where are we?2008
SO ₂ [t/y]	1600
CO ₂ [t/y]	145,000
PM10 [t/y]	30
Wastewater [m ³ /y]	340,534
COD [t/y]	740
Heavy Metals [t/y]	18
Mazout reduction	7000

ECO Implemented Projects

Examples



Waste Heat Recovery

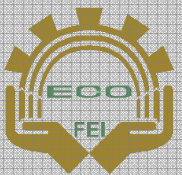


Installation of heat exchangers on the furnaces to make use of the thermal energy content of the flue gases – Cost EGP 375.000



Achieved benefits:

- Reduction in natural gas consumption
- CO₂ emission reduction by 1640 ton/yr
- Annual savings 96000 L.E/yr



Combustion Control



Improvement of combustion efficiency in annealing and galvanization furnace by installation of self regenerative burners- Cost EGP555.000



Achieved benefits:

- Reduction in LPG consumption by 290 ton/yr, Solar consumption by 300 ton/yr
- CO₂ emission reduction by 1300 ton/yr
- SO₂ emission reduction by 50 ton/yr
- Annual savings 370,000 L.E/yr

Steam System Improvement / Production Optimization



Replacement of old curing chambers with temperature and humidity controlled curing chambers.

Cost EGP 2.100.000



Achieved benefits:

- Reduction in Solar consumption
- CO₂ emission reduction by 200 ton/yr
- Annual savings 750,000 L.E/yr



Fuel Switch



Replacement of Cupola furnaces (coal) by
a rotary kiln furnace working with natural
Gas Cost EGP 1.300.000



Achieved benefits:

- CO₂ emission reduction by 650 ton/yr
- SO₂ emission reduction by 25 ton/yr
- PM₁₀ emission reduction by 10 ton/yr
- Annual savings 620,000 L.E/yr

CP Pays!

30 SME achieve annual savings of L.E. 16,799,183 through CP application due to reductions in raw material consumption, increased productivity, and energy savings.

CO₂ reduction: 66,727 ton/y

SO₂ reduction: 1,308 ton/y

PM₁₀ reduction: 11 ton/y

Pb reduction: 18 ton/y

amount of Mazout switched to N.G.: 6,740 ton/y

electrical energy reduction: 7,964,145 kWhr/y

energy reduction (incl. electricity): 3,075 TOE/y

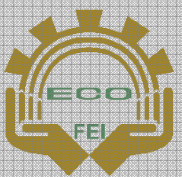
COD reduction: 380 ton/y

wastewater reduction: 147,409 m³/y

L.E. 36,660,000

Total Loans Disbursed

Environmental Benefits Achieved



Future Goals

- **Expand the frame of work to cover all industrial sectors**
- **Expand the frame of work to include large factories and business sector factories**
- **CDM Activities**

Questions? Remarks?

Thank you for your time and
attention!

