



## **Environmental Sound Technologies For Improving SMEs Productivity**

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## **The Egypt National Cleaner Production Center (ENCPC)**

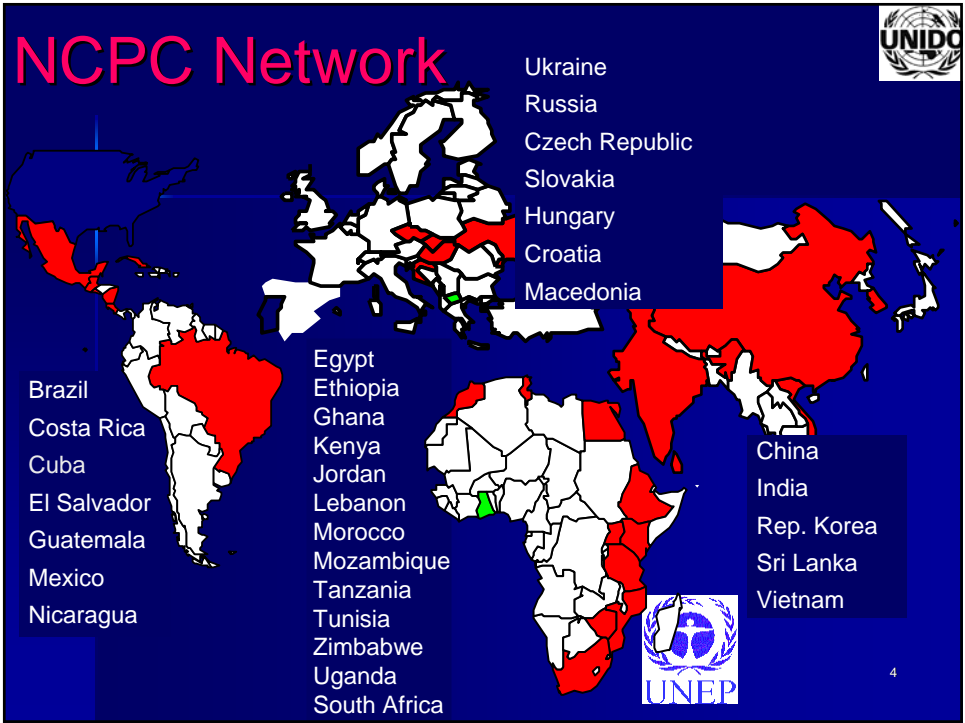
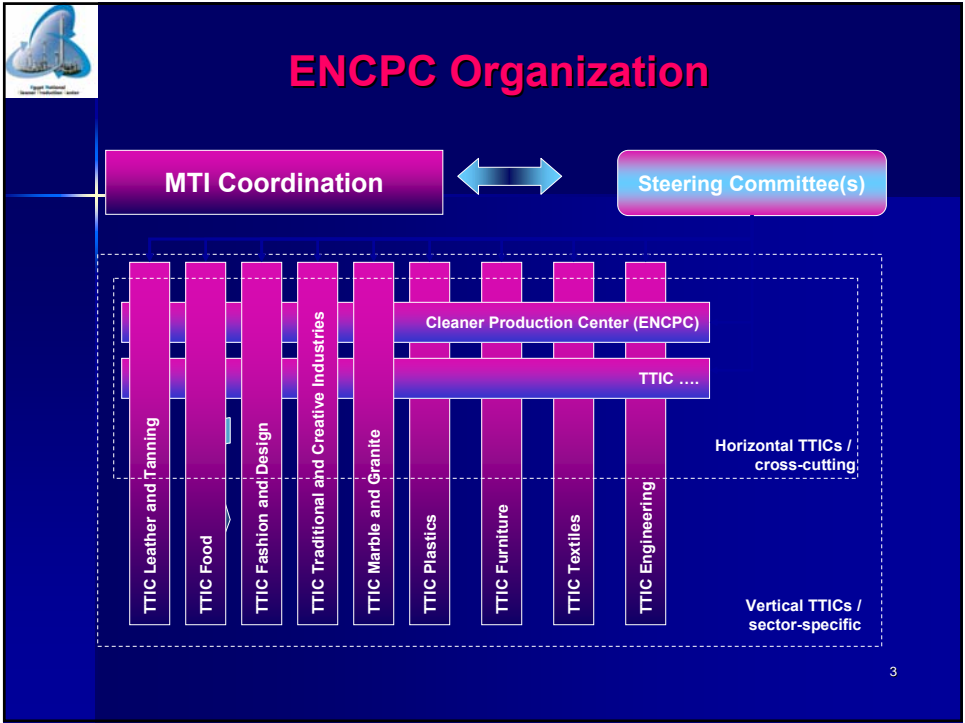
### **Vision**

- Increasing competing abilities for Egyptian companies.
- Promoting Cleaner Production services worldwide.
- Protecting the environment.

### **Mission**

To enhance the competitiveness and productivity of Egyptian industry, through increased application of Cleaner Production (CP) methodologies.

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## **ENCPC Services**

- 1. Cleaner Production**
- 2. Management Systems and Certificates**
- 3. Environmental Sound Technology Transfer**
- 4. Chemical Leasing program**
- 5. Waste Valorization**
- 6. Training programs.**

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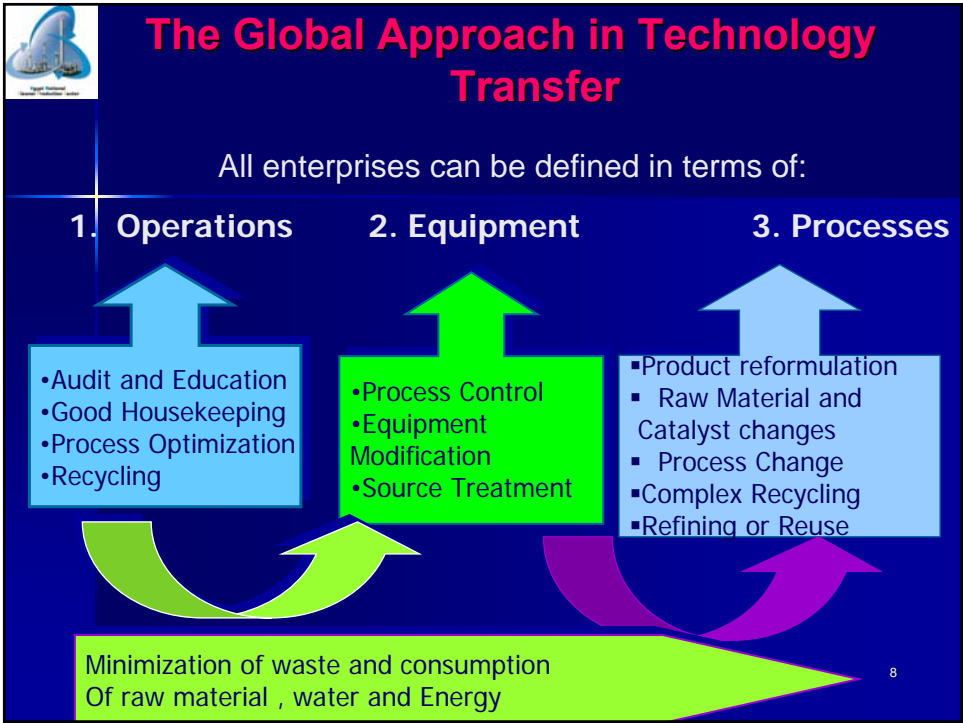
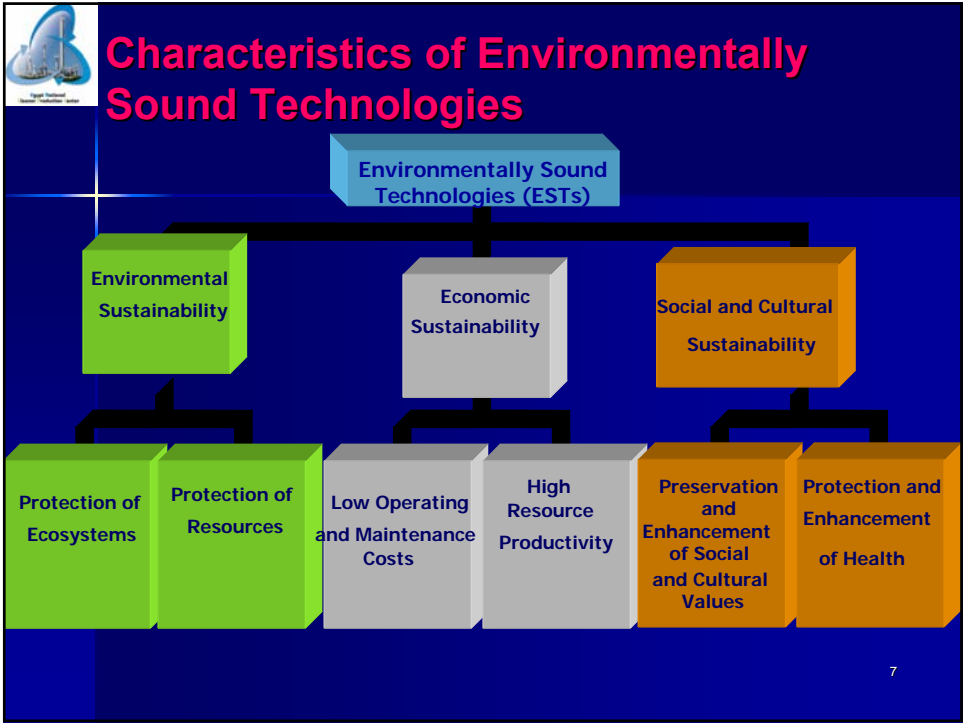


## **Definition of Environmental Sound Technologies**

Chapter 34 of Agenda 21 defines ESTs as technologies which:

- protect the environment, less polluting,
- use all resources in a more sustainable manner,
- recycle their wastes , products, and
- handle residual wastes in a more acceptable manner.

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## Examples of Technology Transfer Projects implemented in Egyptian Industry

### Egyptian Pollution Abatement Project (EPAP I)

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## Kafer El Zayat for Pesticides

#### Project Name :

Replacing bottling line, and installing  
de-dusting unit in agricultural sulfur  
unit

**Cost:** MUS\$ 1

#### Environmental Benefits:

- Reduction of toxic vapour emissions  
emitted from the liquid pesticides  
filling  
line.
- Reduction of sulfur dust emissions  
emitted from the agro-sulphur  
manufacturing plant to comply with the  
limits of Law 4/94.
- Improvement of the work environment  
and protection of the workers' health.

**Payback:** is about 17 years





## Arma Food Industries (Project 1,2,3)

### Project Name :

Replacement of the bleaching unit  
& instillation of indirect cooling  
system Instillation of chemical oil  
refining unit for edible oil

**Cost:** MUS\$ 4.95

### Environmental Benefits:

- Prevention of silica dust.
- Reduction of the raw material loss by the manual feeding.
- Decrease oil and grease contamination in the recycled water resulting in the direct.
- Decrease the pollution loads on the IWWTP.

**Payback:** is about 3 years



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## The General Company for Ceramics and Porcelain Products (CHINI)

### Project Name :

Installation of new sanitary furnace  
working with NG instead of two  
working with solar

**Cost:** MUS\$ 0.675

### Project Benefits:

- Reduction of air emission levels for  
(CO, CH<sub>4</sub>, NO<sub>x</sub>, N<sub>2</sub>O, SO<sub>x</sub>) to  
comply with Environmental  
Law 4/1994.
- Protection of workers' health and  
improvement of the work  
environment.
- Avoidance of complaints from the  
neighboring Companies.
- Increasing of the energy efficiency

**Payback:** is about 6 years





## El Nasr Electric and Electronic Apparatus (NEEASAE)

### Project name:

Conversion of TL and TLD Production lines from Mercury Dosing to Argon Flushing

**Cost:** MUS\$ 0.201

### Environmental Benefits:

- Reduction of mercury emission from the Fluorescent Factory to comply with environment regulations of Law 4 of 1994 (mercury  $\leq 0.05$  mg/m<sup>3</sup>).
- Protection of workers health

**Payback:** there is no financial benefit associated with this project but there are a reduced health care costs.



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## Transport & Engineering Company (TRENCO)

### Project name:

Conversion of the manual tire spraying process to automatic process

**Cost:** MUS\$ 0.375

### Environmental Benefits:

- Reduction of air emissions due to the volatility of the spraying materials
- Improving work environment and protection of workers health
- Improving the efficiency of the spraying process

**Payback:** there is no financial benefit associated with this project but there are a reduced health care costs.



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## Examples of Environmental Sound Technologies Projects implemented in Egyptian Industry

Support for Environmental Assessment and  
Management (SEAM)

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## SEAM CP Demonstration Projects

- Phase 1 (1994-99)
  - Sector – textiles, food, oil & soap
  - Factories – 100 to 30,000 employees
  - 32 audits
  - 21 demonstration projects
- Phase 2 (2000-05)
  - MSMEs in Dakahleya, Damietta, Sohag, Qena, South Sinai
  - Factories – micro and SME - <100 staff
  - 100 CPOAs; 30 demonstration projects
  - Sectors–metal foundries, food, furniture, textiles



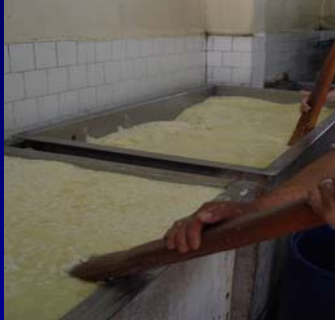
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## CP in Micro Enterprises- Dairy Industry- Mahrous Company

Before: Traditional Ventilation



After: Mechanical ventilation



- Total Investment: LE 102,261
- Annual savings : LE 122,060
- Payback: 10 months

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## CP in Textile Enterprises- Amir Tex For Dyeing and Finishing Company

### • Process optimization & Technology Transfer

- Combined scour & bleach
- 73% reduction in processing time
- Increased productivity: 4.5 to 9.0 tpd
- 60% water savings
- 53% energy savings
- Savings of LE155,460/year
- Chemicals savings: LE 30,972/year



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# CP in Aluminium Finishing Companies - Tiba Factory

Before



After



- Investment of LE 16,250
- Annual benefit of LE 17,130
- Payback of just under 12 months.

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# CP in Plastic Recycling



**Before:** PVC offcuts sent to landfill

**After:** Recycling of offcuts to make footwear



Costs: LE565,000  
Savings: LE3.2 million

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# CP in Oil & Soap

Install GOS and DAF Units  
Recovery of oil and fats  
85% reduction in BOD  
Cost: LE621,247  
Annual savings: LE637,020



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