



Ministry of Trade and Industry









# **Experience in applying Chemical Leasing in Egypt Dubai, February 2006**

# Egypt National Cleaner Production Center (ENCPC)

- Established by UNIDO at Ministry of Trade and Industry (MTI)
- To **enhance the competitiveness** and productivity of national industry, through increased application of **Cleaner Production (CP) methodologies** and the absorption, adaptation and diffusion of **quality and productivity improving Environmentally Sound Technologies (EST)**

# Overview of Chemical Leasing Projects in Egypt

Supplier	Process/ Scope	User
	<p><b>Galvanization Pre-Treatment</b></p> <ul style="list-style-type: none"> <li>• Flux production process</li> <li>• Hard Zinc sieving and recycling</li> <li>• Recycling of Zinc ash</li> <li>• Recovery of HCl from the pickling process</li> </ul>	
	<p><b>Electrostatic Powder Coating</b></p> <ul style="list-style-type: none"> <li>• Optimization electrostatic powder coating process</li> <li>• Optimization of coating powder product</li> <li>• Recycling of powder waste (fine powder)</li> </ul>	
	<p><b>Equipment cleaning with organic solvent</b></p> <ul style="list-style-type: none"> <li>• Recycling of solvent waste from automotive paints</li> <li>• Optimization of the management, handling and application of organic solvents</li> </ul>	

# **Chemical Leasing Implementation Plan**

**By ENCPC**

## **Preparation Phase:**

- **Assessment of current situation (audits)**
- **Technical part (process optimization)**

## **Implementation phase:**

- **On Job Training**
- **Cost Benefit Analysis (CBA)**
- **Identification of further optimization potentials**

# Chemical Leasing in Powder Coating Industry

## (Coatech- Unionaire as a Case )

### □ Coatech for Chemical Industries

- supplier for coating powder
- covers 60% of the Egyptian market
- 400 employees
- Joint venture with AKZO NOBEL

### □ Unionaire for Engineering Industries

- Int. group and market leader in air conditioning technology
- User for coating powder in air conditions painting
- 2600 employees
- Produces more than 400 000 air conditioner per year and exports around 80%

# Traditional Model of Cooperation (Coatech and Unionaire)

- Payment based on volume
- High powder loss
- Coatech has no responsibility towards the powder losses
- High film thickness of coated articles
- Low customer loyalty and satisfaction
- High consumption
- High cost
- less product competitiveness
- Non- Skilled operation staff



## Development of ChL Model (Coatech- Unionaire)

- Coatech supervises the whole stream of powder coating
- Standard procedure for recycling
- Process audit and optimization
- Technical adjustments of line and powder
- On Job Training (OJT)
- A base for payment is agreed under the new ChL model (m2)
- CBA is required to assess the effectiveness of new ChL

# Payment Basis Under Chemical Leasing Business Model

<b>Traditional Model</b>	<b>New ChL Model</b>
Payment by bulk (1 kg = 18 EGP)	Payment for services (per m <sup>2</sup> of coated article)
1kg powder covers 3 m <sup>2</sup> with 180- 250 μ	1kg powder covers 6 m <sup>2</sup> with 80-100 μ (optimized process)
333 gm covers 1 m <sup>2</sup> with 180- 250 μ	166 gm covers 1 m <sup>2</sup> with 80- 100μ (Standard!!)
Costs / 1m <sup>2</sup> = 6 EGP	Costs / 1m <sup>2</sup> = 2.5 EGP ???!
Powder loss: 18%	Powder loss: 6-10%

# Summary of Initial Results of Application Chemical Leasing (Coatech- Unionaire)

## Unionaire

- savings in costs
- less consumption of (chemicals) per m2
- optimized production line
- high product quality
- Improved chemicals management
- got an efficient next door supplier
- positive environmental impacts

## Coatech/ AKZO NOBEL

- optimized production (modified product)
- competitive and unique service
- more loyalty of its clients (repeatable with others)
- create a new system of management and support the after sale service

## Conclusions

- **Chemical Leasing is an innovative tool to sustainable chemicals management**
- **ChL is a win-win strategy for both supplier and user**
- **Very supportive to the other tools such as supply chain management, cleaner production, EMS, 6 Sigma, etc**
- **Support from international chemicals suppliers would be highly recommended to support the ChL approach**
- **Environmental corporate policy is supportive**
- **Concrete ChL guidelines are required**

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