Regional Workshop on Trade and Environment: Developing the Environmental Goods and Services Sector in the Arab Region for Transformation into a Green Economy

Green Production and Sustainable Consumption and Production

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OUTLINE OF PRESENTATION

1. Green Production in Lebanon
2. LCPC Establishment
3. Sustainable Consumption & Production
4. Economical & Environmental Savings
5. Case Study in Lebanon:
   CORTAS - LEFICO
1. Green Production in Lebanon

- Clean Production is an integrated part of the technical assistance provided by NCPCs at plant level
- CP Unit in Vienna established 42 National CP Centers and Programmes in developing countries and countries with economy in transition
- In Lebanon, there is a need for Energy Savings and Resources Efficiency → Establishment of the Lebanese CPC
- LCPC is elected to be the representative of West Asia in the RECP UNIDO/UNEP Global Network

What is Clean Production (CP)?

- “Anticipate & Prevent” philosophy

- Cleaner Production Definition:
  “The continuous application of an integrated preventive environmental strategy applied to processes, products, and services to increase overall efficiency and reduce risks to humans and the environment.” UNEP.

- Applied “From Cradle to Grave”
What is NOT CP?

- Diluting hazardous or toxic constituents to reduce hazard or toxicity
- Concentrating hazardous or toxic constituents to reduce volume (which do not reduce the absolute amount of hazardous constituents entering the environment)
- Transferring hazardous or toxic constituents from one environmental medium to another
- Off-site recycling (a waste management option which creates pollution during transport)
- Waste treatment

Where is CP?

- Sustainable Consumption
- Sustainable Development
- GOAL

- Shifting to change the way products are made to reduce environmental impact
- Improving efficiency at current production process with an eye to product changes
- Saving byproducts from waste streams
- Using byproducts as raw inputs
- Meeting environmental impacts as part of the production process
- Reactive
- Proactive
Common Waste Treatment:

Waste is generated!
What do I have to do with it?

Cleaner Production:

Waste is generated!
Where does it come from?

2. LCPC ESTABLISHMENT

- Establishment of a Lebanese Cleaner Production Center (LCPC) by the Ministry of Environment (MoE) in May 2002. The activities were launched in June 2003.

- LCPC is part of the United Nations Industrial Development Organization (UNIDO) Network which comprises National Cleaner Production Centres (NCPC) in 42 countries.

- After being hosted at MoE, LCPC premises moved and are now located at Industrial Research Institute (IRI) in Hadath- Baabda.
**Objectives:**

LCPC aims facilitating the transfer of Lebanese SME’s to CP in the wake of Lebanon’s efforts to join the World Trade Organisation (WTO).

- To empower SME’s to design and manufacture products that meet growing **consumers’ demand** for more environmentally-friendly products
- To facilitate the access of local products to **international markets** thus encouraging economic growth
- To increase constructive **competition** among industrial establishments
- To help industries to get the **ISO 14000**
- To reduce the adverse **environmental impacts** of industrial production thus responding to the requirements of sustainable development
LCPC Activities / Awareness & Training

• Brochure
• Book: Half is enough
• Annual Reports
• Conferences
• Lectures
• Seminars
• Newsletters
• Radio/TV Show
• CD Documentary

LCPC Outputs till End 2009

➢ 5 CP Manuals
➢ 25 CP Reports
➢ 25 Factsheets
LCPC Activities / End 2009

LCPC Activities till End of 2009

- Site Visits: 76
- Graduation of national CP experts: 27
- Training courses: 19
- Awareness training events: 19
- Workshops: 10

Number of Participants in LCPC Activities till End of 2009

- Awareness Raising Events: 916
- Training Courses Activities: 683
- Workshops: 169

Participants / End 2009
### LCPC CP Projects till End 2009

- El-Assi - El Hermel
- Al-Laqlouq Hboub
- Al-Hawa Safra
- Gemayel Frs. Bikfaya
- Olive Trade Akkar
- Boden Group - Tripoli
- ULPI – Roumieh
- Bycop – Beirut
- Lefico – Zahleh
- Doris – Ksamak
- ULPI
- LEFICO
- Sicomo Kabelias
- Cortas – Dora
- Martina – Beirut
- Modern Jam Boushrieh
- Trico Orient Star – Beirut
- Sonaco – Gerfies
- Sicomo Kabelias
- Miloche – Tyre
- Mithra – Beiruit
- Seven Plant – Chouf
- Kamaplast – Ghazieh
- Bycop – Beirut
- Milky’s – Ansar
- Soda – Zalka
- Cortas – Dora
- Plastimed
- Plastic
- Textile
- Soyfood
- Dairy
- Agro-food
- Cardboard
- Others
- Textile
- Total

### LCPC Savings till End 2009

- **Yearly Savings**
  - **USD per year**
  - **Total Savings** 1028251
  - **Other** 182772
  - **Plastic** 274264
  - **Textile** 52273
  - **Cardboard** 252342
  - **Dairy** 49600
  - **Agro-food** 217000

Legend:
- Soyfood
- Dairy
- Agro-food
- Cardboard
- Textile
- Others
- Total
CONCLUSION

➢ The results of the 25 in-plant assessments in 7 sectors were MORE THAN SATISFACTORY

➢ More than **One million US$ SAVINGS** per year is achieved. The Enterprises implemented successful CP projects with a short pay back, on average less than one year, on their investments.

➢ LCPC is recognized very well in the country, and CP started to be considered as a win-win approach among the industries.

3. Sustainable Consumption & Production (SCP)

Why & What

The development imperatives:

➢ Developing countries need to develop their economies in order to fulfill the basic aspirations of their people.

➢ Developed countries need to sustain their economic development in order to maintain their current status of living standards.
The Current Scenario:

Use of nature

Economic growth

Quality of life

Projection of The Current Scenario:

Two Earth Planets required by year 2050
The Sustainability Scenario:

- Quality of life
- Economic growth
- Use of nature

Changes on Production and Consumption

Source: Wuppertal Institute

4. Economical & Environmental Savings

- Overall reduction in energy consumption achieved through the implementation of CP in the period 2001-2003: more than 100 millions kWh

Total CP and energy audits carried out in the same period: 1050
4. Economical & Environmental Savings

ECONOMIC AND ENVIRONMENTAL IMPACT ON ENERGY SAVINGS

Total Energy Savings reported in 2003 = 104.9 million kWh

KNOWING

As average to generate 1 kWh – 300 ml diesel are needed
1000 ml diesel emit about 3.2 kg of CO₂ to the atmosphere.

SAVINGS

104.9 million kWh avoided the emission of 100,700 tons of CO₂
and saved
ECONOMIC SAVINGS 5,250,000 US$

5. CASE STUDY:
CORTAS CANNING
& REFRIGERATING COMPANY

- Located in DORA
- 120 Employees
- Major exporter
- Produces dips, tomato-based products and pickles
CP OPTIONS IMPLEMENTED AT CORTAS

- Installation of a new boiler;
- Hiring of expert to train employees
- Installation of new Generator

SAVINGS ACHIEVED AT CORTAS

Cortas - Fuel consumption of the boiler

Before: 12.0 liters/tonne
After: 6.0 liters/tonne
SAVINGS ACHIEVED AT CORTAS

- Savings of **$67,000 yearly**
- at an **investment of $102,000**

Replacement of the Boiler

Before

After
CASE STUDY:
Lebanese Fiber Company s.a.l
LEFI CO

- Established in 2004 in the Bekaa Valley
- LEFI CO has 50 employees.
- The main product is polyester staple fiber, made from virgin material or PET flakes, and used in various applications.
- one of the major recycling pioneer enterprises in the Middle East.

CP OPTIONS IMPLEMENTED AT LEFI CO

- Check the lighting for automatic control (censors, dimmers)
- Insulate condensate return system
- Clean boiler regularly
- Provide oxygen control for boiler
- Check efficiency of thermo oil system
- Check feasibility of incineration small flakes & refused bottles
SAVINGS ACHIEVED AT LEFI CO

- Savings of **87,000 $** yearly
- at an investment of **50,000 $**

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SAVINGS ACHIEVED AT LEFI CO

**Reduction of Fuel Consumption**

- **Before**: 658000 liter/year
- **After**: 438000 liter/year
Bridging the Gap between Environment & Industry through Cleaner Production

Cleaner Production

Industrial world

Environmental world

Common language

Lebanese Cleaner Production Center
Thank you for your attention

CP is

a journey

not a destination