



**Seminar  
on  
“Greening the Garments Accessories & Packaging Industries”**

**under Bangladesh INSPIRED Project Component 2b  
SME Competitiveness Grant Scheme Project of BGAPMEA**

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**Organized by :**

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# Systematic methodology for an effective cleaner production program



## Step:1 Getting Started

- **Task-1** Cleaner production team
- **Task-2** List process step
- **Task-3** Select wasteful process



## Step:2 Analyzing Process

- **Task-4** Make process flow chart
- **Task-5** Make material & energy balance
- **Task-6** Assign cost to waste stream
- **Task-7** Review process for waste cause





## **Step:3 Generate cleaner production opportunities**

- **Task- 8 Develop cleaner production opportunities**
- **Task- 9 Select workable opportunities**



## **Step: 4 Selecting cleaner production Solution**

- **Task-10 Assess technical feasibility**
- **Task-11 Assess economic viability**
- **Task-12 Evaluate Environment Aspect**
- **Task-13 Select solution for implementation**





## Step:5 Implementing cleaner production Solutions

- **Task- 14 Prepare for implementation**
- **Task-15 Implementing cleaner production Solutions**
- **Task-16 Monitor & Evaluate Results**



## Step:6 Maintaining cleaner production

- **Task-17 Sustain cleaner production solution**
- **Tsk-18 Identify & select wasteful process steps**

# Waste and Waste Management

## ***What is Industrial Waste ?***

**Waste is defined by public advisory panel of Chemical Manufacturing association USA as:**

**“Any gas, liquid or solid residual material at a facility, whether hazardous or non hazardous, that is not used further in the production of commercial product or provisions of a service and which itself is not a commercial product”. Waste is:**

- **A wrong substance**
- **At a wrong place**
- **At a wrong time**
- **In a wrong quality**



## ***Sources of Industrial Waste***

- in manufacturing operations
- rejected raw materials or products released as effluent
- **Utility Operations**

## ***Approach of waste management***

- **Principles of EMS are:**
- **compliance**
- **pollution prevention**
- **continuous improvement**



## ***Elements of EMS:***

- **preparatory review:** industry to identify strengths, weaknesses, risks and opportunities as basis for establishing an EMS
- **Environmental Policy:** Policy is to be developed by top management & get commitment from all-top to down the levels
- **Organization and Personnel:** Management & worker are to be made responsible for EMS implementation
- **Environmental aspects & associated impacts:** Identifying evaluation process for products, services & maintain records



- **Environmental Management & Manual & documentation:** This is permanent record and may be revised as required
- **Environmental Objectives & targets:** There must be clear objectives and targets to achieve
- **Operational Control:** Appropriate control & verification process should cover all functions, activities and process
- **Environmental Management records:** Records must be maintained in distinguished formats for EMS





## ***Means of achieving cleaner production***

- **Product designs**
- **Good house keeping practices**
- **Equipment modification**
- **Process modification**
- **Raw materials substitution**
- **Innovative technology**
- **By products recovery from waste**
- **Recycling the waste**
- **Reuse of waste**



## **Advantages of cleaner production**

**A cleaner production can typically result in the following economic benefits and significant competitive edge:**

### **1. Raw materials consumption, hence cost reduction**

- **Materials/Chemical consumption is reduced**
- **Water consumption reduced**
- **Energy consumption reduced**
- **Raw material handling and storage cost reduced**

### **2. Waste treatment cost reduced**

- **Energy consumption in treating waste is reduced**
- **Chemical required for waste treatment is reduced**
- **Less manpower & equipment is required**
- **Improves process efficiency**



### **3. Process efficiency is Improved**

- **Product yield is improved**
- **Equipment availability**
- **Energy requirement is reduced**
- **House keeping is improved**
- **Pollution potentiality is reduced**
- **Reduction of waste disposal**

### **4. Waste disposal cost is reduced**

- **Quantity of waste generation is reduced**
- **Less storage space is required, hence more production floor space**
- **Wastes are segregated, hence less contamination**
- **Less solid waste disposal area is required**

# Green Banking-Equator Principles-a global issue

## Ideal Benefits of Green Banking:

- In Bangladesh industries and projects have been classified into four categories based on environmental impacts. They are **GREEN**, **ORANGE- A** category, **ORANGE-B** categories and **RED** category.
- DoE gives awards every year one in each category as under :




Category	Award classification	Award
1. Individual	1. Environmental conservation and pollution control 2. Environmental education & awareness 3. Environmental research & innovation	21 crt. Gold medal of 2 total weight, Tk. 50000 cheque, crest and certificate for each classification
2. Institutional	1. Environmental conservation and pollution control 2. Environmental education & awareness 3. Environmental research & innovation	21 crt. Gold medal of 2 total weight, Tk. 50000 cheque, crest and certificate for each classification



## Equator Principles (EP)- Statement of Principles of EP

**EPFIs will only provide loans to projects that conform to Principles 1-9 below:**

- **Principle 1: Review and Categorization**
- **Principle 2: Social and Environmental Assessment**
- **Principle 3: Applicable Social and Environmental Standards**
- **Principle 4: Action Plan and Management System**
- **Principle 5: Consultation and Disclosure**
- **Principle 6: Grievance Mechanism**
- **Principle 7: Independent Review**

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- **Principle 8: Covenants For Category A and B projects, the borrower will covenant in financing documentation:**
    - a) to comply with all relevant host country social and environmental laws, regulations and permits
    - b) to comply with the environmental requirements during the construction and operation of the project;
    - c) to provide periodic reports in a format agreed with EPFIs prepared by in-house staff or third party experts
  - **Principle 9: Independent Monitoring and Reporting.**
  - **Principle 10: EPFI Reporting**



## ***What is Cleaner Production?***

**Cleaner Production is an integrated approach which focuses on making the most efficient use of inputs such as energy, water, gas and other raw materials thus minimizing waste and pollution at the source.**

## ***International Organization for Standardization (ISO-14000):***

**It covers the following areas:**

- **Environmental Management System:**
- **Life cycle assessment:**
- **Environmental design:**
- **Environmental Communication:**
- **Environmental Performance Evaluation:**
- **Monitoring System Performance:**



## ***Examples of companies leading the way in green initiatives***

### ***Unilever: Washing Away Waste***

**It was able to reduce the amount of corrugate by 45%.**

- 1. Remove:** Eliminate, where possible, unnecessary packaging layers. Wishbone salad dressing was able to save 2,100 metric tons of corrugate each year.
- 2. Reduce:** Shrink packages to the optimal size and weight for their contents.
- 3. Reuse:** Reuse packaging from the materials Unilever receives at its factories.
- 4. Renew:** Maximize the proportion of packaging from renewable resources.
- 5. Recycle:**






## ***Estee Lauder: Pretty in Green***

**It recycles about 55% of everything that comes out of the factory- chipboard are from 100% recycled material.**

## ***Keeping Score- the Wal-Mart Way***

**In September 2006, the retailer announced that it was beginning to encourage 60,000 of its suppliers to reduce packaging. The goal was to cut packaging by 5% by 2013, as well as prevent 667,000 metric tons of carbon-dioxide from entering the atmosphere. The initiative was designed to save \$11 billion. In November 2006, Wal-Mart introduced its Sustainable Packaging Scorecard system to 2,000 private label suppliers.**

# Recommendations- Suggested Measures

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- i) Awareness Building**
  - ii) Green Building for Factory**
  - iii) Installation of Effluent Treatment Plant (ETP)**
  - iv) Industrial Estate for GAP Sector to avail the advantages of CEPT**
  - v) Rethink > Reduce > Recycle > Reuse = FR4 Principle**
  - vi) To encourage companies to invest in efficient waste management systems**
  - vii) Factories having principal activity is waste processing including re-cycling will pay no corporate tax say for the first 5 years of their operations irrespective of location**
  - viii) Establishing economy EPT plants under the ttz Bremerhaven, Germany technological assistance.**



**IX) Use of Environmental Technologies and Methods.**

**X) Development of Environmental Database.**

**XI) Green Packaging: Waste Not, Want Not**

**While helping the environment eco-friendly packaging reaps additional rewards:**

- 1. Saving money.** Reducing excess packaging results in lighter and smaller shipments that cost less to transport.
- 2. Maintaining business.** Switching to green materials can help meet or anticipate customer demands for eco-friendly suppliers.
- 3. Attracting consumers.** Many shoppers will choose an environmentally friendly product over a conventional package.

**XII) DOE must be technically strengthened by giving higher training abroad.**



**XIII) Free Consultancy service by the DoE**

**XIV) Govt. to arrange foreign fund**

**XV) Govt. to provide long term loan at a lower rate of interest.**

**XVI) Govt. to provide land, energy and other infrastructural facilities.**

**XVII) Foreign donors to assist technically and financially.**

**XVIII) Assistance from the Ministry of Industries.**

**XIX) Assistance from the Ministry of Environment & Forests.**

**XX) Assistance from the Ministry of Finance.**

**XXI) Assistance by the buyers as a stake holder of the Garments Accessories and Packaging Sector.**



## CONCLUDING REMARKS

- **The biggest change agent, or at least the most influential, have been the buyers and from the buyers**
- **The message is loud and clear:**  
*“we want more environmentally compliant sourcing”.*
- **Economic effluent treatment plant (ETP).**



**Thank you all**