Green Industry: Best Practice Examples

TIPS ANNUAL FORUM 2017
Industrialisation and Sustainable Growth
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UNIDO MANDATE
Inclusive and Sustainable Industrial Development (ISID)

- Advancing Economic Competitiveness
  - Advancing economic and industrial growth
- Creating Shared Prosperity
  - Advancing poverty eradication and inclusiveness
- Safeguarding the Environment
  - Advancing environmentally sustainable growth
Green Industry Policy Framework

Enabling Green Industry Framework
- Policy & Strategy
- Capacity Building

GIP index

E-learning

Greening of Industries
- Resource Productivity (materials, water & energy)
- Pollution Prevention (waste & emissions)
- Responsible Chemicals’ Solutions

Creating Green Industries
- Renewable and Efficient Energy
- Materials Recovery (3RS) & Recycling
- Pollution Control (POPs, e-waste)

Environmental Services
Green Industry - Benefits

**Economic**
*More Innovation and Growth; Increased Resilience…*
- Increase resource productivity
- Bring down production costs
- Foster technology development and innovation
- Improve competitiveness
- Open up new markets
- Develop new businesses

**Social**
*More Employment, Rising Incomes and Empowerment…*
- Create new jobs and make existing jobs more secure
- Reduce poverty
- Develop new skills and capacity
- Improve occupational health and safety conditions
- Safeguard health and safety of communities
- Lower risks to consumers

**Environmental**
*More Efficient Resource Use; Less Waste and Pollution…*
- Reduce environmental pollution
- Counteract resource depletion
- Prevent degradation of ecosystems
- Mitigate climate change
- Combat water scarcity
Green Industry Policy Framework

1. POLICY TOOLS AND INSTRUMENTS
2. POLICY ADVICE
3. TRAINING AND CAPACITY BUILDING
POLICY TOOLS AND INSTRUMENTS

Green Industry Policy Matrix

SOFT
- Corporate Social Responsibility
- Eco-labelling
- Subsidies
- Environmental Taxes
- Liability

EXTENDED PRODUCER RESPONSIBILITY
- Extended Producer Responsibility
- Trade Agreements
- Fees and User Charges

HARD
- Industry awareness and capacity building
- Voluntary Agreements
- Greening the supply chain
- Research and Development
- Industry Standards EMS

SOFT
- Education and Training
- Information tools
- Monitoring
- Technology Diffusion
- Eco-parks Clusters Networks

HARD
- Norms and Standards
- Government Strategies

Source: UNIDO, 2011: Policies for supporting green industry
POLICY TOOLS AND INSTRUMENTS

Phases of Green Industrial Policy Cycle

1. High level vision
2. Stocktaking
3. Prioritizing intervention areas
4. Policy domains & instruments
5. Policy pathway design & impact assessment
6. Implementation

SCCP, CB, M&E, GM

Legitimation & Implementation
Planning & Assessment

SCCP...... Stakeholder [analysis], Coordination, Consultation and Participation
CB......... Capacity Building
M&E....... Monitoring and Evaluation
GM......... Gender mainstreaming

Source: UNIDO 2016
PAGE assists countries in developing, adopting and implementing inclusive green economy (IGE) policies and strategies.

UNIDO’s contribution to PAGE focuses on industrial policy advice and its implementation through industry engagement, industry-related training and its building of public-private partnerships.
POLICY ADVICE
UNIDO/PAGE

Peru and Burkina Faso:
- Green Industrial Assessment
- Stakeholder Consultations
- Green Industry Formulation

Mauritius and Mongolia:
- Industrial Waste Assessment
- Stakeholder Consultations

China
- Normative Function – Demonstrating Green Industry Potential: GIP Index
POLICY ADVICE

Green Industry Progress (GIP) Index

- Focused on the manufacturing sector
- Pilot phase in Jiangsu Province
- Methodology will be replicated in other provinces in China
- Includes environmental, economic and social indicators
- Basis for future GIP indexes for other countries as well as for global index
## POLICY ADVICE - GIP Index

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POLICY ADVICE - GIP Index

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1. Manufacture Value added per capita
2. Energy consumption intensity in industry
3. Water Withdrawal intensity in industry
4. Hazard waste generation intensity in industry
5. COD effluent intensity in industry
6. CO2 emission intensity in industry
7. SO2 emission intensity in industry
8. TSP emission intensity in industry
9. Employee in manufacturing as % of total employee
TRAINING AND CAPACITY BUILDING

UNIDO Institute:
• China
• Bahrain
• Hungary

PAGE Academy:
• Turin
• Burkina Faso
• Mongolia

PAGE Global Academy in Turin, 3-14 October 2016

PAGE National Academy in Burkina Faso, 14-16 December 2016
TRAINING AND CAPACITY BUILDING: E-learning

Policies for Greening Industry: A Training Course

- Greening Industries
  - Resource Productivity (materials, water & energy)
  - Renewable and Efficient Energy
  - Environmental Regulation
  - Responsible chemicals’ and hazardous waste management

- Greening Services
  - Eco-design
  - Materials Recovery (3Rs) and Remanufacturing
  - Eco-Industrial Parks
  - Environmental services

Corporate Social Responsibility (CSR)
Green Industry Publications

http://www.unido.org/greenindustry.html
Green Industry Examples
Resource Efficient and Cleaner Production (RECP)

Continuous application of preventive environmental strategies to processes, products and services to increase efficiency and reduce risks to humans and the environment

- RECP addresses three sustainability dimensions:
  - Economic – production efficiency
  - Environmental – natural resource conservation and protection
  - Social – supporting communities and lowering risks

Global Network for RECP (RECPnet)

- Brings together RECP service providers on a global and regional level to catalyze the effective and widespread application of RECP in developing and transition economies
- Offers specialized, high-quality technical and advisory services to industries, creating synergies between members and improving capacities
Eco-Industrial Park (EIP)

Industrial Park

- RECP
- Low Carbon Technology
- Green Chemistry
- Renewable Energy
- Energy efficiency

Park level: shared/exchange of
- Resources
- Infrastructure
- Supply
- Services

Shared/exchange of
- Waste to Energy
- Wastewater Treatment

Sustainable City

- Corporate Social Responsibility
Eco-Industrial Park on-going projects

Target beneficiaries:
17 industrial parks
200 companies

China:
1 Industrial park,
10 Companies

Colombia:
2 Industrial parks
20 Companies

India:
5 Industrial parks
40 Companies

South Africa:
2 Industrial parks
40 Companies

Peru:
2 Industrial parks
20 Companies

Morocco:
1 Industrial park
10 Companies

Viet Nam:
4 Industrial parks
60 Companies

China:
1 Industrial park,
10 Companies

Morocco:
1 Industrial park
10 Companies

South Africa:
2 Industrial parks
40 Companies

Peru:
2 Industrial parks
20 Companies

Viet Nam:
4 Industrial parks
60 Companies
Promoting Organic Waste-to-Energy Technologies in SMMEs: Accelerating biogas market development

Capacity Building and Technology Support System - guidelines to assist the biogas industry to integrate and optimize its performance throughout the organic waste value chain

Biogas Market Development and Regulatory Framework – development of biogas industry quality standards under the South Africa Bureau of Standards

Technology Demonstration - focus on various agro-industries’ waste-streams including co-digestion, possible biogas/digestate uses and markets, and prospects for gas upgrading through scrubbing and compression.

At least installed total capacity: 3MW

GHG emission reduction: 680,000 tCO2eq.

Scaling up - national investment strategy for integrated biogas will be developed to support the establishment of a replication mechanism
**Objective:** To promote the widespread use of energy efficient low-carbon transport (LCT), contributing to low-carbon cities in South Africa.

1. Design, installation and tracking of **PV-based charging stations** for Electric Vehicles;
2. Development of national **standards** for EV charging stations.

**Policy and Regulatory Framework**

1. National **policy framework** to promote LCT, focusing on E-mobility and Non-motorized transport
2. Support programmes: **financial incentives**, non-grant instruments, financing schemes, etc.
3. Institutional **capacity** strengthened, **awareness** raised.

**Pilot Projects with Cities**

1. Policy framework to **promote Non-Motorized Transport (NMT) and Public Transport** in the selected cities prepared;
2. Strengthened **Institutional capacity** in the selected cities, and awareness raised;
3. **Shared Experiences** with other cities – inside and outside of South Africa
South Africa Industrial Energy Efficiency Project (2010-2016)

Development Objective: To increase industrial energy efficiency in South Africa in order to contribute to national efforts to improve energy security and electricity supply continuity while seeking that GDP growth is not constrained by energy shortages and rising prices.

Project Methodologies Introduced:
- Energy Management Systems (EnMS)
- Energy Systems Optimization (ESO)
- ISO 50001 (now the SANS/ISO 50001) Energy Management Systems Standards

Some Quantitative Results:
- 39 SAN/ISO 50001 Lead Auditors & Training Centre Providers trained and certified (this is the vast proportion of the national Auditor pool) – 24% Female
- 175 individual EnMS/ESO courses conducted (User & Expert Level) – with 3,573 participants receiving training and 156 EnMS/ESO Expert-Level nationals graduating and available to S. African industry. ESO Expert 10% Female / EnMS Expert 12% Female
- 485 S. Africa enterprises directly supported: (i) 227 ESO Energy Audits; (ii) 181 ESO Assessments; and (iii) 73 EnMS Enterprises Supported
Thank You!

Claudia Linke-Heep
Coordinator, Green Industry programme
http://www.unido.org/greenindustry.html