# 1 Chapter 1: SCP, Industrial Development and Energy

## 1.1 Introduction

Sustainable consumption and production requires a fundamental rethinking of the way societies produce, use and dispose of products. The resource-intensive consumption and production patterns of the developed countries cannot be replicated worldwide because, as some calculations suggest, it would require the resources of three planets to sustain these patterns.<sup>1</sup> Developing countries on average have far lower levels of per capita income and consumption than developed countries, but as a group they are growing rapidly. With existing technologies and consumption patterns, global energy demand could double by 2050 due to the combination of population growth and economic growth. As developing countries industrialize, they have the opportunity to avoid the worst pollution problems faced by earlier industrializers, but only if they are able to adopt cleaner and more efficient technologies. Energy and resource inefficiencies impose not just an environmental but an economic burden.

Industries, including energy industries, consume up to 50% of total primary energy, and this consumption is forecast to grow at 2.4-3.2% per year through 2030 in developing countries and 1.2% in developed countries.<sup>2</sup> Energy-intensive industries have greatly increased environmental pressure. Thus there is an urgent need for de-linking industrial production from environmental degradation through, among other things, investment in energy efficient technologies.

Supply chain management has been identified as a way to improve the environmental performance of industries, by requiring suppliers to provide products and services meeting certain environmental standards. Through their global and regional supply chains, multinational corporations can support small and medium sized enterprises (SMEs), particularly in developing countries, in accessing adequate information, advanced technologies, improved management techniques and finance, to help them in their transition to more sustainable production systems.

A number of national and regional sectoral SCP initiatives have been developed since the 1990s and many of them address issues related to industry and energy. Notably, European Union (EU) environmental directives encompass a wide range of policies and programmes, from regulatory frameworks, integrated pollution controls, product standards, and environmental management systems, to eco-design and energy efficiency. The European Commission will develop a Green Book on SCP by 2007 and a revised Action Plan on SCP by 2008; meanwhile, five EU countries have already developed national initiatives. Africa has identified energy and industrial development, together with water, sanitation and habitat as the regional priorities on SCP, and the African Roundtable on SCP (ARSCP) has launched

<sup>&</sup>lt;sup>1</sup> Living Planet Report, WWF, 2004.

<sup>&</sup>lt;sup>2</sup> International Energy Outlook 2006, U.S. Energy Information Administration.

pilot projects for the plastics industry and lifecycle assessment training. In Asia and Pacific, cleaner production initiatives have been promoted across many industrial sectors. In Latin America and the Caribbean, priorities include promotion of sustainable products and services and Corporate Social Responsibility (CSR). In North America, examples of programmes and initiatives include the ecoEnergy Efficiency Initiative, in Canada, and voluntary initiatives such as the "Energy Star" eco-labeling scheme in the United States.

### 1.2 Current status

#### Cleaner, more energy-efficient and more material-efficient industrial production

To encourage cleaner, more energy-efficient industrial production, governments have employed a variety of policies and market-based measures. Energy performance standards for industrial motors have been widely adopted in both developed and developing countries, and have proven to be one of the most cost-effective methods for increasing energy efficiency in industries and reducing GHG emissions. Cogeneration of electricity and process heat in industrial plants and parks can increase overall energy efficiency significantly by avoiding waste heat loss and transmission loss and improving power reliability, security and quality. Demand-side management (DSM) programmes have been implemented in many developed countries for over 25 years, but are still limited in developing countries due to the lack of regulatory and institutional support. Negotiated agreements between government and industry for energy efficiency and GHG emission reduction have typically resulted in small improvements on business-asusual. The participation and results vary according to the level of voluntariness. Another approach in many countries is the development of energy service companies (ESCOs). ESCOs are promoting energy efficiency through developing, financing and implementing performance-based projects, particularly in countries with more liberalized or privatized electric utilities.

To encourage more material-efficient industrial production, typical market-based measures have included taxes and fees to raise the cost of unwanted waste outputs; strict enforcement of liability rules related to pollution or hazardous materials; subsidies to stimulate cleaner technology development and adoption; renewable portfolio standards for energy sectors; and trading schemes, including of emission permits and renewable energy credits.

Other policy options include information strategies, such as public disclosure of industry environmental performance; eco-labeling schemes and other consumer information tools, which can provide clear guidance on sustainable products for consumers, such as the EU "flower" eco-label; organization of cleaner production competitions with high profile awards; and adoption of accounting methods which explicitly measure the environmental and social costs of production, in order to better inform managerial decision-making. For example, the Eco-Management and Audit Scheme (EMAS) in Europe is a management tool used by companies to evaluate, report and improve their environmental performance in production.

In terms of institutional capacity, 24 National Cleaner Production Centers (NCPCs) have been established since 1994 in developing countries and countries with economies in transition, supported through a network by UNIDO and UNEP. NCPCs promote and support cleaner production strategies in enterprises and government policies, aiming to transfer know-how as well as technology. In Africa, for example, NCPCs acting as a delivery mechanism have provided in-plant demonstrations and assessments, training, information dissemination and policy advice to governments, industries and NGOs.

Transfer of clean technology (including hardware, know-how and knowledge) to energy-intensive industrial sectors in developing countries is one key approach to facilitating their shift to SCP. In emerging economies, like China, India, Brazil, Mexico and South Africa, there exists high potential for sustainability improvements given their current low levels of energy-efficiency and the rapid growth in energy demand. Such a shift could be facilitated through international cooperation, foreign direct investment and global supply chains, which combined can widen the channels for those sectors to access up-to-date information, technology and investment opportunities. However, some barriers continue to impede this transfer, notably restrictive trade policies, other restrictions on competition which "lock in" obsolete technologies, and limited absorptive capacity of some recipients. Some sectors and companies are also less amenable to the influence of foreign technology and competitive pressures. Bilateral and multilateral collaboration between developed and developing countries are central to the R&D, demonstration and diffusion of clean technology in developing countries. More international support is needed to speed this process.

#### Corporate environmental and social responsibility and accountability (CSR)

To date, CSR has largely been framed in developed countries. Through global supply chains, international trade and investment, CSR practices are gradually being transferred to companies in developing countries. In many middle - and low-income countries, such as China, India, the Philippines and Brazil, CSR movements and initiatives have emerged. CSR commitments and reporting are largely the result of shareholder engagement. The main vehicles for CSR commitment and reporting are the UN Global Compact and the Global Reporting Initiative (GRI). The Global Compact today includes more than 3000 companies and stakeholders from approximately 100 countries, while nearly 1000 organizations from around the world are using the GRI Guidelines as the basis for reporting. In high income countries, CSR reporting is increasing rapidly and follows largely voluntary guidelines; but in middle and low-income countries, CSR reporting generally remains low so far.

Institutional investors and customers are a growing source of demand for strengthened corporate sustainability programmes. The former are increasingly active in pressing their portfolio companies to measure their carbon footprints and implement plans to shrink them through, e.g., the Institutional Investors Group on Climate Change.

In developing countries, the companies in the supply chains of multinational companies need more support to build capacity in sustainable business models and management approaches. In this respect, the main duty of government is to provide the enabling environment for CSR, including competition policy, basic investment, enterprise and regulatory frameworks, and provision of access to information and public participation in decision-making. A new guidance standard on Social Responsibility, designated as ISO 26000, is planned to be published in October 2008. It will reflect the needs of organizations in both private and public sectors, and take into account all stakeholders including industry, government, consumers, labor, NGOs, among others, with geographic and gender balance.

#### Small and medium sized enterprises (SMEs)

Most of the private sector entities in the world are SMEs and SMEs generally account for a sizeable share of private sector employment. SMEs can contribute significantly to pollution and industrial accidents, but typically have few incentives to reduce those impacts. Many SMEs face numerous barriers in transitioning to more sustainable business models, including lack of information, financial and technical resources and institutional bias from complex regulations. But at the same time it can be easier for small companies to change/convert to more sustainable activities than for large and quite complex companies.

Engaging SMEs in the SCP agenda is essential. Policy and institutional support can help SMEs to gain access to both domestic and international supply chains. Policy options include: design and creation of SME-supportive legal and regulatory frameworks; facilitation of SME access to bank credit for investment in productive capacity and working capital and, in particular, in more energy and resource efficient technologies; managerial capacity building and differentiation between needs of different types of SMEs, for example, by sectors and size (informal to formal sector - Micro Es, SEs and MEs); common provision of certification and testing facilities for SMEs, as well as market information and promotion services, such as through trade fairs and international trade missions. For example, Mexico's Programme of Industrial Integration (PII, since 1997), by establishing Centers for Suppliers Development, has help ed SMEs identify supply chain opportunities, upgrade their capabilities, and identify and access technical support, training and financing opportunities.<sup>3</sup>

SMEs in developing countries can also benefit from strengthened aid-for-trade initiatives with more access to information and technical assistance to facilitate the transition to cleaner production processes and improved product designs. Apart from reducing pollution, this will also ensure that their products are able to meet the quality standards and other environmental requirements for export to the markets governed by environmental directives or strong consumer preferences for "sustainable products".

Besides governmental support, industry associations, which understand specific needs of their members, can play important roles in favor of SMEs development. Extension programmes with outreach to women entrepreneurs should also be considered since they own and operate a significant proportion of SMEs particularly in informal sectors.

Policy and institutional support can assist SMEs in securing labels and certifications for sustainable products recognized in international markets. In the EU, for example, there are specific reductions for the SMEs in the fee structure for the application to use the "flower" eco-label.

<sup>&</sup>lt;sup>3</sup> SME Cluster and Network Development in Developing Countries: the Experience of UNIDO, 1999 http://www.intracen.org/execforum/ef1999/indust\_1.pdf

## 1.3 Challenges

Related to cleaner, more energy-efficient and material-efficient industrial production, the challenges include:

- De-linking industrial development and environmental degradation by:
  - (i) promoting energy efficiency and switching to lower-emission energy sources,
  - (ii) reforming environmentally harmful subsidies, including those which favor inefficient industrial use of energy, notably fossil fuels, and
  - (iii) promoting technology transfer for technological leapfrogging;
- Maximizing cost-savings and competitiveness gains from material-efficient production;
- Finding the right mix of regulatory measures, market-based instruments and information sharing to realize significant energy efficiency improvements in industry.

Related to CSR, the challenges are:

- Ensuring that CSR is considered a means to help domestic enterprises gain access to international markets and not a cost burden which reduces their international competitiveness;
- Achieving greater consistency if not harmonization among international CSR standards and norms, to reduce compliance burdens, especially on SMEs;
- Ways to inform consumers better, helping them to make informed purchasing and lifestyle choices.

Related to SMEs, the main challenges are

- Establishing trade facilitation support systems, including for product certification and with particular attention to support for "sustainable products";
- Strengthening National Cleaner Production Centres to offer technical, managerial and marketing support to SMEs seeking to introduce sustainable production methods and to manufacture sustainable products that are competitive in international markets;
- Facilitating access to credit and encouraging public-private partnerships to support the shift to more sustainable production practices.

## 1.4 Key questions:

Based on the above discussion on achievements and challenges, some key questions to be discussed among the participants in the working group on SCP and industrial development (27 June, Group 1) are suggested below:

- 1. What are the key elements that industry would like to see reflected in the 10YFP?
- 2. What are the key priorities in integrating SCP policies into national and regional industrial development plans, and strengthening the dialogue between policy-makers, industries and the research community?
- 3. What are the key actions and policies needed in the short term to advance the SCP agenda in industry, especially with respect to energy use and conservation?
- 4. How to harmonize CSR practices and enhance technical and managerial know-how transfer along global supply chains? What measures can be taken to strengthen communications and partnerships on CSR issues between developed and developing economies?
- 5. How can business and industry support the development and implementation of the 10YFP? Which type of cooperation could be proposed to support SCP at the national and regional levels and or the Marrakech Task Forces?