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## 1 Introduction

The National Roundtable on Sustainable Consumption and Production (SCP) to be held on the 14<sup>th</sup> November 2009 in Beijing, China is the 3<sup>rd</sup> Chinese roundtable under the Marrakech process, of which China continues to play an integral role. The previous roundtables were seen by participants and governments as the launching pad for long term commitments in the promotion of SCP in the country, acting as the initial step in the development and implementation of focused activities and further strategies<sup>1</sup>. Based on their economic weight and political importance, China has a significant influence within SCP and is playing a key role in the Asia-Pacific region. The regional “SCP Help Desk” institutional home is located in the China Standards and Certification Centre in Beijing, which fosters innovative practices on sustainable consumption and production in Asia and the Pacific; conducts SCP research and studies; plays the role of information broker to support national and regional SCP initiatives; disseminates best practices through training; and designs and implements demonstration projects in partnership with global, regional and national stakeholders<sup>2</sup>.

The first Chinese roundtable was held in 2006, with the outcome focused on the need to work on environmentally sustainable procurement and to provide support to China for the further development of the existing sustainable procurement legislation and technical support systems.

As a result, it was decided that the 2006 roundtable would be followed up by an expert workshop to design solutions that could help mainstream environmentally sustainable procurement in China. The workshop took place in June 2008 and included one plenary session and four thematic sessions on Green Public Procurement, Eco-labelling, Government Procurement and Environmental Protection Policy and International Approaches for Green Purchasing and Greening Supply Chain.

The Objectives of the 3<sup>rd</sup> roundtable are to:

- Contribute to a better understanding of the potential of Life Cycle Management (LCM) and its adoption in China’s national SCP agenda.
- Identify opportunities for creating synergies with the local EC funded SWITCH Programme.

The roundtable will build on the progress achieved in the last two meetings and it will focus on Life Cycle Management as a toolset to promote SCP. The roundtable aims to contribute to the adoption of LCA in China’s national SCP agenda, by bringing better understanding of the potential of the life-cycle approach and its' wider use (e.g. in public procurement).

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<sup>1</sup> SCP roundtables in China and India <http://www.unep.fr/shared/publications/pdf/DTIx0918xPA-RoundtableChinaIndia.pdf>

<sup>2</sup> The Marrakech process, Regions - Asia and the Pacific accessed 17/08/09 <http://esa.un.org/marrakechprocess/regionsasia.shtml>



## 2 Sustainable Consumption and Production.

Sustainable Consumption and Production (SCP) can be broadly defined as reducing our environmental impacts, while maintaining or improving economic outputs and standards of living<sup>3</sup>.

SCP is an integrated approach that encourages energy and resource efficiency, sustainable infrastructure, green jobs and to provide a better quality of life. It incorporates a broad multi stakeholder approach in order to achieve sustainable development objectives. SCP is fundamentally focused upon altering or changing our current production and consumption patterns to a more sustainable approach in order to realize the goals of reducing future economic, environmental and social costs, strengthening economic competitiveness and reducing poverty.

Sustainable Production (SP) refers to the creation of goods and services utilizing processes and systems that are: “non-polluting; conserving of energy and natural resources; economically efficient; safe and healthful for workers, communities, and consumers; and, socially and creatively rewarding for all working people.”<sup>4</sup>

Sustainable Consumption (SC) relates to maximizing opportunities for sustainable livelihoods resulting from a reduction in environmental impacts of producing, using and disposing of goods and services in order to satisfy basic requirements of life and the aspirations for improvement for both current and future generations (UN CSD International Work Programme, adopted in 1995).

China has been growing rapidly in the last two decades; however, this development needs to be addressed properly in order to be sustainable. Understanding that SCP is crucial in order to decouple economic growth from environmental degradation, the roundtable aims to build up China’s involvement in SCP. The following are the Vision, Mission and Principles of SCP for China.

### 2.1 Vision Mission and Principles of SCP in China

China is one of the world’s largest producers of goods and as such a major participant in the consumption of raw materials, and production and transport of goods. China is home to approximately one-fifth of the world's population (over 1.3 billion people) with forecasts that their domestic markets and production base will establish China as the world's single largest economy by 2030. China's rapid and foreseeable economic growth places it in the unique position of being able to redefine its manufacturing base and trading relationships in accordance with the core principles of sustainable development

<sup>3</sup> DEFRA UK accessed on 15<sup>th</sup> September 2009: <http://www.defra.gov.uk/Environment/business/scp/>

<sup>4</sup> Lowell Center for Sustainable Production <http://www.uml.edu/centers/LCSP/>



over a relatively short time frame<sup>5</sup>. Life Cycle Management has a large potential to effect change through addressing not only ecolabelling and sustainable procurement, but also the design and production phases of products in order to reduce the consumption of raw materials and to realize more efficient production approaches.

### 3 The Marrakech process

The Marrakech Process is a global multi-stakeholder process to support the implementation of SCP and to develop a Global Framework for Action on SCP, the so-called 10-Year Framework of Programmes on SCP (10YFP). The 10YFP will be reviewed by the Commission on Sustainable Development (CSD) during the 2010/11 two-year cycle.

The Process responds to the call of the Johannesburg Plan of Implementation (World Summit on Sustainable Development 2002) to support the regional and national initiatives to accelerate the shift towards SCP patterns, thus de-linking economic growth from environmental degradation.

UNEP and UN DESA are the leading agencies of this global process, with an active participation of national governments, development agencies, business and industry, civil society and other stakeholders. The first meeting devoted to developing the 10 YFP took place in Marrakech, Morocco in June 2003, hence the name.

Knowing that SCP has different meanings and presents different challenges in each region of the world, the Marrakech Process has taken a participatory and bottom-up approach, conducted in four over-lapping phases.

1. Phase 1: *Organizing regional consultations* to promote awareness and identify priorities and needs for SCP (through regional expert meetings and national/regional roundtables)
2. Phase 2: *Building regional strategies* and implementation mechanisms with regional and national ownership, to be endorsed wherever possible by the relevant regional institutions.
3. Phase 3: *Implementing concrete projects and programmes* on the regional, national and local levels to develop and/or improve SCP tools and methodologies (with the Marrakech Task Forces and the Cooperation Dialogue as main mechanisms)
4. Phase 4: *Evaluating progress*, exchanging information and encouraging international cooperation and coordination. This is done through bi-annual international meetings.

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<sup>5</sup> International Institute for Sustainable Development - Sustainable Development and China  
[http://www.iisd.org/publications/pub\\_fr.aspx?id=1065](http://www.iisd.org/publications/pub_fr.aspx?id=1065)



The Marrakech Process is a dynamic process based on a multi-stakeholder platform which includes regular global and regional expert meetings, voluntary task forces, a development cooperation dialogue, a Business and Industry Forum as well as an NGO Forum, and other activities designed to promote progress on SCP and the elaboration of the 10YFP. For more information on the mechanisms of the Marrakech Process see: <http://www.unep.fr/pc/sustain/10year/home.htm>

One of the major goals of the Marrakech Process is to present a solid proposal on the 10-year framework of programmes (10YFP) at CSD18/19 (2010, 2011), where it will be negotiated by governments, with participation from all the Major Groups involved in the deliberations. Next year (2010) is the first year of the CSD cycle, the review year. The Secretary General's report will focus on a review of progress in the implementation of commitments, targets and goals related to the sustainable development themes under consideration, including the 10-year framework of programmes on sustainable consumption and production.

The following year (2011) is the policy year. The Secretary General's report will focus on decisions on how to overcome constraints, obstacles and barriers to the implementation process. Negotiations on the 10YFP will begin in February 2011 at an inter-sessional preparatory meeting and conclude in April/May at the CSD<sup>6</sup>.

The Marrakech Process provides a unique opportunity at the international level to develop a coordinated, global framework of programmes (10YFP) in a systematic and integrated manner.

The main objective of the 10YFP is to be a framework for action on SCP that countries and other stakeholders can endorse to accelerate the shift towards sustainable consumption and production patterns, thus promoting social and economic development within the carrying capacity of ecosystems. For more information on the 10YFP please see [http://esa.un.org/marrakechprocess/pdf/Draft10yfpniputtoCSDv2\\_281008.pdf](http://esa.un.org/marrakechprocess/pdf/Draft10yfpniputtoCSDv2_281008.pdf)

## 4 European Developments

### 4.1 Sustainable Development

#### 4.1.1 EU Sustainable Development Strategy (EU SDS)

The European Council of June 2006 adopted an ambitious and comprehensive renewed SDS for an enlarged EU. It builds on the Gothenburg strategy of 2001 and is the result of an extensive review process that started in 2004.

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<sup>6</sup> Marrakech Process Webpage, accessed on 17<sup>th</sup> August 2009  
<http://esa.un.org/marrakechprocess/roadmapcsd.shtml>



The renewed EU SDS sets out a single, coherent strategy on how the EU will more effectively live up to its long-standing commitment to meet the challenges of sustainable development. It recognises the need to gradually change our current unsustainable consumption and production patterns and move towards a better integrated approach to policy-making. It reaffirms the need for global solidarity and recognises the importance of strengthening our work with partners outside the EU, including those rapidly developing countries which will have a significant impact on global sustainable development<sup>7</sup>.

The overall aim of the EU Sustainable Development Strategy is to identify and develop actions to enable the EU to achieve a continuous long-term improvement of quality of life through the creation of sustainable communities able to manage and use resources efficiently, able to tap the ecological and social innovation potential of the economy and in the end able to ensure prosperity, environmental protection and social cohesion.

In July 2009 the Commission adopted the 2009 Review of EU SDS. It underlines that in recent years the EU has mainstreamed sustainable development into a broad range of its policies. In particular, the EU has taken the lead in the fight against climate change and the promotion of a low-carbon economy. At the same time, unsustainable trends persist in many areas and the efforts need to be intensified. The review takes stock of EU policy measures in the areas covered by the EU SDS and launches a reflection on the future of the EU SDS and its relation to the Lisbon strategy<sup>8</sup>.

The review will be complemented by Eurostat's bi-annual monitoring report on sustainable development which will be published later in 2009.

To access the EU SDS, please see <http://ec.europa.eu/sustainable/>

#### 4.1.2 The Sustainable Consumption and Production Action Plan

On 16 July 2008 the European Commission presented the Sustainable Consumption and Production and Sustainable Industrial Policy (SCP/SIP) Action Plan. It includes a series of proposals on sustainable consumption and production that will contribute to improving the environmental performance of products and increase the demand for more sustainable goods and production technologies. It also seeks to encourage EU industry to take advantage of opportunities to innovate. The Council endorsed the Action Plan in its conclusions adopted on 4 December 2008.

<sup>7</sup> 2009 Review of the European Union Strategy for Sustainable Development <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52009DC0400:EN:NOT>

<sup>8</sup> Sustainable Development (EC) <http://ec.europa.eu/environment/eussd/>



A range of policies at EU and national level already foster resource efficient and eco-friendly products and raise consumer awareness. The proposals complement these policy instruments and provide measures where gaps exist<sup>9</sup>.

These proposals are an integral part of the European Union's renewed Sustainable Development Strategy (EU SDS) which reinforces the EU's long-standing commitment to meet the challenges of sustainable development and builds on initiatives and instruments at EU and international level such as the United Nations' Marrakech Process<sup>10</sup>.

For more information on sustainable development within the EC, access [http://ec.europa.eu/environment/eussd/escp\\_en.htm](http://ec.europa.eu/environment/eussd/escp_en.htm)

#### ***4.2 The European Platform on LCA***

The European platform on LCA (EPLCA) is a project of the European Commission, carried out by the Commission's Joint Research Centre, Institute for Environment and Sustainability (JRC-IES) in collaboration with DG Environment, Directorate for Sustainable Development and Integration<sup>11</sup>.

Established in 2005, the European Platform has the mandate to promote the availability, exchange, and use of quality-assured life cycle data, methods and studies in policy and in business<sup>12</sup>. The purpose of the platform is to improve credibility, acceptance and the practice of Life Cycle Assessment (LCA) in business and public authorities, by providing reference data and recommended methods for LCA studies. The European Platform supports the basis for coherent and quality-assured life cycle data, methods, and studies in the implementation of the Thematic Strategies on the Prevention and Recycling of Waste, the Sustainable Use of Natural Resources, and the Sustainable Consumption and Production Action Plan (SCP).

The main deliverables of the project are:

- The European Reference Life Cycle Database (ELCD) with European scope inventory data sets (which provides Life Cycle Inventory data representative for the European market for key materials, energy carriers, transport, and waste management).
- An internationally coordinated and harmonized ILCD Handbook of technical guidance documents for LCA

<sup>9</sup> The Sustainable Consumption and Production Action Plan

[http://ec.europa.eu/environment/eussd/escp\\_en.htm](http://ec.europa.eu/environment/eussd/escp_en.htm)

<sup>10</sup> Sustainable Development (EC) [http://ec.europa.eu/environment/eussd/escp\\_en.htm](http://ec.europa.eu/environment/eussd/escp_en.htm)

<sup>11</sup> The European platform on LCA (EC JRC) <http://lca.jrc.ec.europa.eu/>

<sup>12</sup> The EPLCA flyer, accessed 13 October 2009: <http://lct.jrc.ec.europa.eu/eplca/doc/Flyer-European-Platform-on-LCA%20-%20Oct%201st-re.pdf>



- LCA information hub to ease the access to data and methods and to facilitate knowledge exchange, comprising among others also a global LCA Resources Directory with software, database and service providers

The European Platform’s activities and deliverables build on five guiding principles:

1. Best attainable stakeholder consensus
2. Starting from existing LCA practice and knowledge
3. Scientific robustness
4. Practical and affordable
5. Long-term support

For more information on the European Platform for LCA, please see <http://lct.jrc.ec.europa.eu/eplca>

### 4.3 *The SWITCH-Asia programme*

In line with the EC Regional Strategy Paper for assistance to Asia (2007-2013), the SWITCH-Asia programme aims to promote the adoption of Sustainable Consumption and Production (SCP) among Small and Medium sized Enterprises (SMEs) and consumer groups in Asia. The programme contributes directly and indirectly to poverty alleviation by improving the living conditions of poor households in the surroundings and downstream of sub-urban SMEs by reducing water pollution (particularly improving conditions of women who traditionally have to source drinking water), solid waste, and air pollution.

SWITCH also contributes to increased employment and incomes by increased production that meets international environmental standards and higher competitiveness, e.g. through resource savings and better access to supply chains of international companies. In addition, adoption of SCP will help in improving the conditions of both female and male labourers promoting reasonable salaries, decent working conditions and protection of children rights (social corporate responsibility).

The SWITCH programme seeks to enhance the uptake of SCP by working simultaneously on the production and consumption sides, employing a multi-stakeholder approach with strong and intensive working relationships with SMEs, building upon existing structures and networks, and by scaling up results achieved in earlier projects. Projects will have to actively disseminate their results and facilitate exchange of good practices<sup>13</sup>.

Under the Switch Asia programme, activities should aim to:

- Promote the use of environmentally friendly technologies and practices;

<sup>13</sup>European Commission “What is SWITCH” website: [http://ec.europa.eu/europeaid/where/asia/regional-cooperation/environment/switch\\_en.htm](http://ec.europa.eu/europeaid/where/asia/regional-cooperation/environment/switch_en.htm) accessed October 2009.



- Promote a change in consumption of less environmentally damaging products and services;
- Reinforce and implement legal environment and safety instruments;
- Develop and apply effective economic instruments that enhance sustainable consumption and production.

SWITCH awards grants to EU-Asia partnerships of non-profit making organisations interested in pursuing sustainable development, such as chambers of commerce, industrial and professional associations, regulatory bodies (regional and local authorities), research organisations and development agencies. These organisations must demonstrate an ability to reach out to large numbers of SMEs or consumer groups. Proposals where intermediaries such as business associations, industry associations, retailers, and chambers of commerce will play an active role in the partnerships are especially welcome.

For more information, access the SWITCH-Asia website at <http://www.switch-asia.eu/>

## 5 2006 and 2008 China Roundtables on SCP

Both UNEP and UN DESA have been promoting and supporting the development of national strategies on SCP and coordinating the international cooperation of the 10YFP where each region identified its needs and priorities in terms of SCP. So far, in China two National Roundtables have been held. The next National Roundtable will be held in 2009.

Four priority areas were identified as key challenges to be addressed at the Chinese Roundtables on SCP in 2006:

- Promoting green/sustainable public procurement
- Improving the eco-efficiency of the seven most polluting and energy and resource consuming industry sectors
- Improving waste management focusing on waste prevention and minimization, re-using and re-cycling
- Promoting sustainable construction and building<sup>14</sup>.

The first Chinese Roundtable held in 2006, provided the foundations on the key challenges to be addressed at the Chinese Roundtables on SCP, and identified the following four priority areas to be discussed:

- Improving the existing legislation and elaborating standards to promote green /sustainable public procurement

<sup>14</sup> National Roundtables, Chinese Roundtables on SCP Beijing, China, <http://www.unep.fr/scp/marrakech/consultations/national/06china.htm>, accessed September 2009.



- Promoting cleaner production, resource pricing reform, and adopting environmental standards for industrial policies to improving the eco-efficiency of the seven most polluting and energy and resource consuming industry sectors
- Avoiding secondary pollution during reusing and recycling activities to improve waste management
- Promoting sustainable construction and building.

Policy recommendations that resulted from the 2006 Chinese Roundtable included:

- The establishment of an adequate and applicable set of legal, economic, voluntary instruments and environmental management tools to improve eco-efficiency of production processes, products and services throughout their life cycle.
- Improve, where necessary, legislative instruments, identifying appropriate policies and tools for their implementation, as well as ensure the implementation of the existing ones. Legislative instruments could be combined with the ongoing process of circular economy law making.
- Work on the creation of appropriate standards and criteria for certification and labeling of products and services.
- Improve awareness and knowledge on SCP among government, business, consumers, civil society and education system and specifically improve awareness on eco-labeling among consumers.
- Consider market instruments also in the context of global trade.
- Increase ‘North-South’ and ‘South-South’ cooperation.
- Encourage technology development and transfer, as well as technology adaptation, acquisition and diffusion also through public-private partnerships<sup>15</sup>.

The complete report can be accessed at:

<http://www.unep.fr/shared/publications/pdf/DTIx0918xPA-RoundtableChinaIndia.pdf>

The second Chinese Roundtable held in 2008 identified key barriers to green public procurement in China, policy recommendations, and future follow up actions to ensure China is in a better position to achieve its long-term objectives of building a resource-saving and environmentally-friendly society.

The 2008 Chinese Roundtable identified four priority action areas:

- Strengthening regulation and policy system
- Fostering market for green products/services
- Training and capacity building for procurers on regulation, operational procedure
- Establishing information platform to connect suppliers and procurers and for knowledge sharing.

The complete report can be accessed at:

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<sup>15</sup> SCP Roundtables in China and India: An overview of Sustainable Consumption and Production challenges and opportunities <http://www.unep.fr/shared/publications/pdf/DTIx0918xPA-RoundtableChinaIndia.pdf>



## 6 2009 China Roundtable on Sustainable Consumption and Production

UNEP together with the European Commission are organizing the 2009 China Roundtable on Sustainable Consumption and Production, which intends to follow the vision and priorities identified by the previous two roundtables. It will be built on the previously achieved outcomes but also extended into the wider SCP realm, i.e. not only the SC side (ecolabelling and sustainable procurement), but also the SP side (eco-design and cleaner production), in order to promote the life cycle management of products. The vision, key focus areas and expected outcomes for the roundtable have been identified as the following:

### 6.1 Vision, Key Focus and Expected outcomes of the roundtable

#### 6.1.1 Vision:

This roundtable will raise the profile of LCM as a critical toolset for all stakeholders in China, especially for policymakers. It intends to explore the need in Chinese policy-making and demonstrate the potentials of LCM for policy-making as well as business strategy, and calls for policy support for the adoption of LCM approaches in China.

#### 6.1.2 Key focus areas:

The roundtable is designed to strengthen China's involvement in Sustainable Consumption and Production through an exchange of information and expertise on: the following:

1. SCP policy-making: challenges and needs  
(presentations in policy session on status quo of international and Chinese SCP policy-making, challenge and need, e.g. UNEP's activities, EC SCP Communication, Chinese policy-making etc.)
2. Introduction to Life Cycle Management (LCM)  
(presentations in methodology session on how LCM will support SCP policy and SCP implementation; where the policy support is needed for the adoption of LCM; by Sonia Wang and JRC's talks)
3. LCM for Sustainable Production  
(presentations in SP session on Ecodesign and Cleaner Production, e.g. EC EuP, EC/Chinese RoHS, WEEE and Chinese companies' practice)
4. LCM for Sustainable Consumption  
(presentations in SC session on Ecolabelling and Sustainable procurement, e.g.



*French EPD, Chinese Type I eco-label and Type III declarations (PCRs and EPDs), sustainable procurement, retailers?)*

### 6.1.3 Expected outcomes:

The expected outcomes of the roundtable are:

- A better understanding of China's efforts to implement LCM tools and a better understanding on how to support these processes.
- A core group of 'multipliers' – intermediaries that work with key stakeholders - trained on Life Cycle Management, to disseminate Life Cycle thinking in the country.
- To initiate a core group of companies to set-up and act as a Chinese Life Cycle Management network to interact with the international business community.
- Policy recommendations on ways to introduce Life Cycle Management tools into policy making in China.
- Identified opportunities for creating synergies with the EC funded SWITCH programme.

The following provides background information of four key focus areas and topics to be addressed during the roundtable.

## 6.2 SCP policy-making: challenge and need

China is the major manufacturing hub and most populous country in the world with ongoing fast urbanization. As a consequence, China is suffering from continuous resource/energy shortages and environmental degradation which has been undermining long-term economic growth and social stability. This has been widely perceived by the Chinese government as the major problems with Sustainable Development of China and many believe that switching to Sustainable Consumption and Production patterns is the most urgent requirement.

To this end, many policies have been developed and implemented in the last decade. Going back to the "10th Five-Year Plan" period (2000-2005), the environmental protection targets of the period had not been met with a 27.8% increase in SO<sub>2</sub> emissions and a 2.1% reduction of COD as compared with that of 2000, while the targets should have been a 10% reduction.<sup>16</sup> Furthermore, it was anticipated that the population of China would grow at 4% during the "11th Five-Year Plan" period with rapid urbanization and more than 40% growth of GDP. It led to more strict and quantified energy efficiency and environmental protection targets in the National Eleventh Five-year Plan (2006-2010), which is the current general policy guideline at the national level. Among many other SCP-related policy targets, the National Eleventh Five-year Plans explicitly requires a

<sup>16</sup> *The National Eleventh Five-Year Plan for Environmental Protection (2006-2010)*, State Council of the People's Republic of China, November 22, 2007.



20% reduction of energy consumption per GDP, 10% reduction of annual SO<sub>2</sub> and COD emissions by 2010 as compared with that of 2005.

For the first time, these targets were named as “obligation indicators” of Chinese government. The Plan identifies the responsibilities and tasks of the government and environmental protection departments. It guides and mobilizes enterprises and civil society, and encourages a resource-efficient and environment-friendly society.

Guided by the national policy targets, China intensified energy conservation and pollution reduction efforts. In 2008, 42.3 billion Yuan from the central treasury was spent to support construction on major energy conservation projects, development of the circular economy, strengthening of China’s energy conservation and environmental protection capacity. Energy was saved by the construction and transportation sectors and public agencies. Tax policy reduction for energy and water conservation and pollution reducing equipment were promulgated.<sup>17</sup>

As one of the legislative efforts, the Chinese Circular Economy Law was passed in 2008 and came into force in January 2009. The Circular Economy refers to reducing, reusing, and recycling activities performed in the process of production, circulation, and consumption of products. Amongst others, the law requires the government to:

- Monitor energy consumption and pollution emissions in high consumption and pollution industries
- Promote recycling and increase energy-saving and waste-reutilization standards
- Develop policies to invest capital funds in environmentally friendly industries

This law is formulated for the purposes of promoting the development of the circular economy, improving resource utilization efficiency, protecting and improving the environment and realizing sustainable development.<sup>18</sup> The government will allocate funds to promote innovation in recycling technologies and will provide tax breaks to encourage enterprises to use energy-efficient technologies and equipment.

However, it is always a huge challenge to meet these policy targets. In 2006 and 2007, China failed twice to reduce energy consumption and emissions as planned. Only 2008 saw positive progress. Based on the Report on China’s Economic and Social Development Plan, the Chinese economy grew steadily and rapidly. “China’s GDP topped 30 trillion yuan in 2008, a year-on-year increase of 9.0 percent and more than five percentage points higher than the average world economic growth rate. Economic performance continued to improve. National revenue reached 6.13 trillion Yuan in 2008,

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<sup>17</sup> *Report on the Implementation of the 2008 Plan for National Economic and Social Development and on the 2009 Draft Plan for National Economic and Social Development*, [http://china.org.cn/government/NPC\\_CPPCC\\_2009/2009-03/13/content\\_17440359.htm](http://china.org.cn/government/NPC_CPPCC_2009/2009-03/13/content_17440359.htm), National Development and Reform Commission, 2009

<sup>18</sup> *The Circular Economy Law*, <http://www.chinaenvironmentallaw.com/wp-content/uploads/2008/09/circular-economy-law-cn-en-final.pdf>, 4<sup>th</sup> Meeting of the Standing Committee of the 11<sup>th</sup> National People’s Congress on August 29, 2008.



up 19.5 percent year on year. Energy consumption per unit of GDP continued to decline in 2008, down 4.59 percent.”<sup>19</sup>

In contrast, since many enterprises are facing difficulties and are not operating at full capacity, investment in technical upgrades and pollution reduction has reduced. This leads to a decline in their energy efficiency and ineffective operation of their pollution control equipment. To ensure economic and social development in 2009, China will focus on increasing domestic demand to ensure a keep a steady and fairly rapid economic growth. The report concludes that in the last two years of the Eleventh Five-Year Plan period, there will be great pressure exerted in order to achieve energy conservation and pollution reduction targets.

Therefore, one of key focus areas of the upcoming roundtable is to explore the challenges and needs in SCP policy-making, such as:

- Motivations for SCP policy-making,
- Obstacles in SCP implementation, such as how to balance conflicting targets between economic development and environmental protection, or between energy conservation and pollution reduction.
- Lessons learnt from international SCP policy-making

### **6.3 Introduction to Life Cycle Management (LCM)**

LCM is the production and consumption of all goods and services that result in global resource/energy depletion and environmental degradation. The current patterns of production and consumption of all products, determined by enormous decision makers along products’ life-cycles, such as designers, producers, service providers, consumers and researchers, are unsustainable in general. Therefore, SCP calls for switching the pattern of production and consumption to a more sustainable approach. In order to achieve this goal at the macro level, it is a must to change various decision makers by supporting their well-informed decisions in daily practice.

Life Cycle Assessment (which has been proposed as an analytical method since the early 1990s), is an approach by which the environmental performance and impacts along products life cycle are modelled and analysed. LCA is incorporated in international standards (i.e. ISO14040s) and widely practised in business and policy analysis. It is regarded as “the best framework for assessing the potential environmental impacts of products currently available”<sup>20</sup> and a “science-based approach for developing production and consumption policies to improve the products and services provided”<sup>21</sup>.

<sup>19</sup> *Report on the Implementation of the 2008 Plan for National Economic and Social Development and on the 2009 Draft Plan for National Economic and Social Development*, [http://china.org.cn/government/NPC\\_CPPCC\\_2009/2009-03/13/content\\_17440359.htm](http://china.org.cn/government/NPC_CPPCC_2009/2009-03/13/content_17440359.htm), National Development and Reform Commission, 2009

<sup>20</sup> *European Commission, Communication on Integrated Product Policy, 2003*

<sup>21</sup> *United Nations, Plan of Implementation, World Summit on Sustainable Development, 2002*



Based on life cycle thinking and assessment and combined with specific roles of decision makers, many operational methods have been proposed and practiced around the world, such as eco-design for designers, cleaner production for producers, eco-labels for customers' sustainable procurement, and so on. These methods introduce life cycle thinking and LCA into daily practice to enable continuous environmental improvement and to shape the methodology of Life Cycle Management.

LCM is a business management toolset that can be used by all types of businesses (and other organizations) to improve their products and thus the sustainability performance of the companies and associated value chains. LCM is a method that can be used equally by both large and small firms with the purpose to ensure more sustainable value chain management. It can be used to target, organize, analyze and manage product-related information and activities towards continuous improvement along the life cycle.

LCM is about making life cycle thinking and product sustainability operational for businesses that are aiming for continuous improvement. These are businesses that are striving towards reducing their footprints and minimizing their environmental and socio-economic burdens while maximizing economic and social values.

Several different strategies have been used by companies to implement LCM in their operations. Among these concepts and tools are (eco-) design methods, green procurement, Life Cycle Assessment (LCA), Life Cycle Costing (LCC), eco- and energy labeling, environmental product declarations, ecological and carbon footprint analyses, environmental performance indicators, and social sustainability assessments and approaches, in addition to organizational strategies that are essential for actual implementation.

Just as each situation is unique, so too must be the path that will be followed, underlining the need for assembling a flexible toolset and the means to select the right tools. For more information on LCM and an overview of potential tools, please refer to the UNEP Life Cycle Management publications at:

[http://lcinitiative.unep.fr/default.asp?site=lcinit&page\\_id=F14E0563-6C63-4372-B82F-6F6B5786CCE3](http://lcinitiative.unep.fr/default.asp?site=lcinit&page_id=F14E0563-6C63-4372-B82F-6F6B5786CCE3)

The life cycle thinking, assessment and management calls for supply chain involvement. The supply chain considers the interactions between businesses and their customers and suppliers. The areas at each end of the supply chain offer vast opportunities for improving environmental, social and business performance. The greatest opportunities are obtained by extending the focus as far as possible upstream towards the raw materials used, downstream towards the consumer and then back again as the product and waste material are recycled. In all sectors, traditional competitive differentiators (quality and costs) have become increasingly similar across numerous suppliers. One approach in order for corporations to differentiate themselves, whilst at the same time reducing costs and improving levels of service, is to consider environmental and social factors (and not just economic) relating to their supply chain. Corporations can really only



achieve sustainable value chain management if they are also able to enhance sustainability with their supply chains.

In this key focus area of the coming roundtable, concepts and methods of LCT, LCA and LCM will be introduced and the global trend will be highlighted, such as

- Global life cycle initiative,
- European LCA platform for SCP

## **6.4 LCM for Sustainable Production**

### **6.4.1 Clean Production**

The concept of Cleaner Production was introduced by UNEP in 1989. It is defined as “the continuous application of an integrated preventive environmental strategy to processes, products, and services to increase overall efficiency, and reduce risks to humans and the environment”.<sup>22</sup>

China has been highlighting and implementing Cleaner Production since the early 1990s. The Cleaner Production Promotion Law was adopted on June 29, 2002 and made effective on January 1, 2003. “This Law is enacted in order to promote cleaner production, increase the efficiency of the utilization rate of resources, reduce and avoid the generation of pollutants, protect and improve environments, ensure the health of human beings and promote the sustainable development of the economy and society.”<sup>23</sup>

Cleaner production was introduced in China in 1989, initially via development aid projects. In 1989, the Law of Environmental Protection, Article 25: Applies to new enterprises or existing enterprises renovating their technology. These enterprises should use equipment and processes, which have high levels of resource efficiency, to reduce use and generate less waste.

The introduction of cleaner production methodology, training of personnel, and implementation of demonstration projects at the enterprise level was undertaken between 1992 and 1997.

In 1995, the Law of Prevention and Control of Atmospheric Pollution, Supervision and Management of the Prevention and Control of Atmospheric Pollution, Article 19 states: “Enterprises shall give priority to the adoption of clean production techniques that are

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<sup>22</sup> <http://www.unep.fr/scp/cp/understanding/>

<sup>23</sup> *Law of the People's Republic of China on the Promotion of Clean Production*, <http://www.chinaenvironmentallaw.com/wp-content/uploads/2008/03/clean-production-law.doc>, adopted June 29, 2002.



instrumental to highly efficient use of energy and to reducing the discharge of pollutants so as to decrease the generation of atmospheric pollutants.”<sup>24</sup>

In 1995, the Law of the Peoples Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste, Article 3 states: “In preventing and controlling environmental pollution by solid waste, the State follows the principles of reducing the quantity of solid waste generated and its harmfulness, fully and rationally utilizing solid waste, and making it innocuous through treatment, in order to promote Cleaner production and the development of a circular economy.”<sup>25</sup>

In 1996, the Law of the Peoples Republic of China on Water Pollution Prevention and Control, Article 22: Enterprises should adopt cleaner production technologies to achieve higher efficiency of resource use and to generate reduced levels of pollutants. Enterprises should strengthen housekeeping to reduce the generation of pollutants.

After 1997, China focuses on cleaner production policy-making. In 1998, The National Peoples' Congress, Energy Conservation Law of China, adopted on November 1997 and became effective in January 1998. “This law has been formulated with a view to facilitating energy savings throughout society, improving efficiency and economic benefits of energy use, protecting the environment, guaranteeing national economic and social development and meeting the needs of peoples’ livelihood.”<sup>26</sup> The law also provides for energy-saving labeling.

Even though Cleaner Production has been widely implemented in China for almost 20 years, few LCA studies can be found for cleaner production cases or standards development. This is set to be discussed in the upcoming roundtable, and how LCA and LCM will enhance China’s Cleaner Production practices in the future.

#### 6.4.2 *Ecodesign*

Ecodesign aims at integrating environmental aspects during the product’s design process as any other criterion<sup>27</sup>. It takes into consideration the environmental impacts of a product throughout its entire lifecycle and aims to reduce the impact at the design stage. For further information on Ecodesign, please see the UNEP Ecodesign factsheet at

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<sup>24</sup> *Law of the People's Republic of China on the Prevention and Control of Atmospheric Pollution*, <http://www1.china.org.cn/english/environment/34422.htm>, adopted on August 29, 1995 and amended on April 29, 2000.

<sup>25</sup> National Peoples' Congress, *Law of the Peoples Republic of China on Prevention and Control of Environmental Pollution by Solid Waste*, <http://www.288e.com/en/sort0182/sort0290/111090.html>, adopted on 1995 and amended on December 2004.

<sup>26</sup> National Peoples' Congress, *Energy Conservation Law of China*, <http://www.unescap.org/esd/energy/publications/compend/ceccpart4chapter4.htm>, adopted on November 1997 and effective on January 1998.

<sup>27</sup> Product Ecodesign and materials: Current Status and future prospects: [http://hal.archives-ouvertes.fr/docs/00/18/23/42/PDF/Paper\\_SAM\\_-\\_Mathieux-Brissaud-Zwolinski\\_-\\_Final.pdf](http://hal.archives-ouvertes.fr/docs/00/18/23/42/PDF/Paper_SAM_-_Mathieux-Brissaud-Zwolinski_-_Final.pdf)



<http://www.teachsustainability.com.au/resources/resource.2006-07-07.2375932281/unep-eco-design-factsheet/download>

The European Commission's environmental directives, such as RoHS, WEEE and EuP, have been inspiring and forstering global ecodesign activities. Ecodesign in China is still at an early stage. The main motivators for ecodesign come from the European environmental directives, especially in the electric and electronic industry. In Recent years, more and more local legislations and requirements have been found which inspired ecodesign. A good example is in the "Chinese code for waste electric and electronic equipment", a Chinese version of RoHS, the contents of six toxic substances are restrained under minimum limits, which can be fulfilled only by re-designing of products. In the "National standards on material recycling ratio of appliance", the minimum recycling ratio is defined for several house appliances, such as refrigerators and air conditioners. It calls for material selection during design. The technical criteria in China's Environmental Labelling program also impose specific requirements for different products. Most of requirements link with the product design.

However, the concept of ecodesign has been widely shared in China so far, even if few LCA studies can be found for ecodesign in China, partly due to lack of Chinese LCA databases. In order to promote ecodesign practice in China, the methodology and examples of ecodesign will be introduced in the upcoming roundtable and the obstacles are to be discussed.

## 6.5 LCM for Sustainable Consumption

### 6.5.1 Ecolabeling

The environmental label is a market economic instrument that focuses on the overall national targets of environmental protection, promotes green consumption and the sustainable development of society and economy, improving environmental quality and protecting consumers' health.

The environmental labels in China are primarily Type I Environmental Labels. Eco-labels (Type 1) are voluntary, participatory, market-based and transparent economic tools that aim to decrease environmental impacts and improve resource efficiency of products while enabling consumers to make informed decisions based on products' environmental credentials. Type I Environmental Labels referred to a certification of products and services according to requirements based on their life cycle. They are multiple criteria-based, third party certified programs awarding a license authorizing the use of environmental labels on products. These indicate the overall environmental preferability of a product within a particular product category based on life-cycle considerations.

In the last decade China has experienced continuous exploration and development that results in the need to further develop environmental labeling products.



Environmental Labeling in China was founded in 1993 in response to the sustainable development philosophy put forward by the World Environmental and Development Conference in 1992.<sup>28</sup> The China Environmental Labeling Program was launched in 2003 by the Environmental United Certification Center, Co., Ltd. (CEC).

The Ministry of Environment Protection (MEP), i.e. State Environmental Protection Administration (SEPA) before 2008, is the Chinese governmental department that provides policy support, leads technology, and provides scientific standardizing to environmental labeling products. MEP issues the guidelines and requirements for environmental labeling certification in order to launch research of environmental labeling technology and policies, and to oversee certificated activities according to the regulations of environmental management. The China Certification Committee for Environmental Labeling product (CCEL) investigates the developing situation and tendency of environmental labels both domestically and overseas, and suggests the types and developing directions of the Chinese environmental labeling products. China's CEC enforces the requirements regarding improvement of techniques and quality of the certification granted by MEP; ensures that the label is honored, managed and supervised properly; and cooperates with CCEL in publicizing and honoring the Environmental Labeling.<sup>29</sup>

Technical requirements of the certification of environmental labeling products in China has gradually set up its overall framework with six pillars: issued by the state, with double advantages, management of the entire process, clear environmental performance, quantitative testing and matching with international practice. From 1994 to mid 2006, 12,000 products have been awarded the environmental label and assessments have been conducted for 800 enterprises.<sup>30</sup> In order to counterpart with the international environmental label dynamically, China's environmental label has put forward the technical requirements of certified products. China introduced the advanced international environmental standard of products, positioning the groundwork for the mutual recognition of environmental labels in the world.

Projects are currently underway with the assistance of UNEP in order to improve access to markets, promote trade, increase international competitiveness, increase reliability, and to promote environmental awareness and perceptions in developing countries. For further information on eco-labelling and current projects, please see:  
<http://www.unep.fr/scp/ecolabelling/>

Type III Environmental Declarations, also known as Environmental Product Declaration (EPD), are independently verified LCA results of products guided by predefined Product

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<sup>28</sup> Environmental Certification Center of SEPA China Environmental United Certification Center, *China Environmental Labeling Program*, [http://city.sendai.jp/kankyoku/kanri/icgps/pdf/special\\_1-4.pdf](http://city.sendai.jp/kankyoku/kanri/icgps/pdf/special_1-4.pdf), PowerPoint Presentation

<sup>29</sup> China Environmental United Certification Center Co., Ltd., *New Page of Environmental Labeling Program in China*, [http://www.sepacec.com/cecen/labelling/newpage/200406/t20040629\\_94151.htm](http://www.sepacec.com/cecen/labelling/newpage/200406/t20040629_94151.htm),

<sup>30</sup> Green Council, *China Environmental Labelling Program*, <http://www.greencouncil.org/eng/greenlabel/china.asp>



Category Rules (PCR). Unlike Type I ecolabels based on multiple criteria with life cycle thinking, type III declarations provide more quantitative environmental information which are comparable for sustainable procurement on the demand side and inspire continuous improvement on the supply side.

Two type III environmental declaration programs have been established recently in China by China Building Material Test and Certification Center (CTC) and Environmental United Certification Center, Co., Ltd. (CEC), which follow the principles and procedures set out in ISO 14025. Several products' PCRs have been drafted based on LCA studies and declarations will be verified and published in near future.

In the coming roundtable, the latest development of type I ecolabel and type III environmental declarations will be introduced. The way to apply them for sustainable procurement as well as for eco-design and cleaner production will also be discussed.

### 6.5.2 *Sustainable Procurement*

The European Commission defines Green procurement as “the consideration of environmental elements when procuring goods, services or works at all stages of the project and within the entire life-cycle of procured goods”<sup>31</sup>. It is a process of meeting organizational needs for goods, services, works and utilities that generates benefits for the organization as well as society and the economy, whilst ensuring a minimized impact on the environment<sup>32</sup>.

The Government Procurement Law (GPL) of the People's Republic of China was adopted in 2002 and went to effect in 2003. “The Law is enacted for purposes of regulating government procurement activities, improving efficiency in the use of government procurement funds, safeguarding the interests of the State and the public, protecting the legitimate rights and interests of the parties to government procurements and promoting honest and clean government.”<sup>33</sup>

Chinese Green Public Procurement takes effect in 2007. It awards environmentally-friendly products extra credits in government procurement bids. The environmentally-friendly products are certified and listed in a dozen product categories according to China Environmental Labelling program, a type I ecolabel program operated by the Environmental United Certification Center, Co., Ltd. (CEC) since 1993.

Chinese Green Public Procurement has remarkably stimulated many producers to fulfill the product criteria as required by certification program. The latest progress will be

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<sup>31</sup> Green versus sustainable public procurement  
[http://ec.europa.eu/environment/gpp/green\\_vs\\_sustainable.htm](http://ec.europa.eu/environment/gpp/green_vs_sustainable.htm)

<sup>32</sup> Capacity Building for Sustainable Public Procurement:  
[http://www.unep.fr/scp/marrakech/pdf/SP2pager\\_eu.pdf](http://www.unep.fr/scp/marrakech/pdf/SP2pager_eu.pdf)

<sup>33</sup> Chinese Government Official Webpage, *The Government Procurement Law of the People's Republic of China*, [http://english.gov.cn/laws/2005-10/08/content\\_75023.htm](http://english.gov.cn/laws/2005-10/08/content_75023.htm), June 29, 2002.



introduced and some obstacles, such as limited product categories, will be discussed in the coming roundtable.



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