SUSTAINABLE CONSUMPTION AND PRODUCTION POLICIES
A POLICY TOOLBOX FOR PRACTICAL USE

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The regional environment programme SWITCH-Asia promotes the adoption of Sustainable Consumption and Production (SCP) among Small and Medium sized Enterprises and consumer groups in Asia. As of August 2010, a total of 30 SWITCH-Asia projects are running in 15 different Asian countries.

SWITCH-Asia is employing a multi-stakeholder approach with strong and intensive working relationships with Small and Medium Sized Enterprises (SMEs), consumer “groups”, consumer organisations, retailers and/or intermediary networks involved in influencing consumer behaviour. There is a need for the SWITCH-Asia project implementers to set realistic long-term policy objectives and targets, suggest an appropriate mix of policy instruments and measure progress toward meeting their objectives.

Engaging policy makers and providing inputs to policy making are thus activities implemented by all of the SWITCH-Asia projects. However, most project partners do not have sufficient knowledge of the wide variety of policies and policy instruments available for promoting sustainable consumption and production.

The aim of this report is to provide an SCP policy tool box for SWITCH-Asia projects and stakeholders to enhance their knowledge on SCP policies and enable them to provide concrete input to SCP policy-making to ensure optimal and long lasting impacts of the SWITCH-Asia programme.

The report is divided into two main parts: Part 1 seeks to give the reader a good understanding of what is meant by SCP policies and policy instruments, i.e. what tools are available in the SCP policy tool box. To serve this purpose the section will present an SCP policy framework. Special emphasis is given to SCP policy areas and instruments with particular relevance to the SWITCH-Asia programme, and the conceptual descriptions are supplemented by a brief description of the latest policy development within this field as well as real-life examples of SCP policies from Asia and Europe.

Part 2 of the tool box seeks to assist the SWITCH-Asia projects in identifying policies and policy instruments that could increase the positive environmental and social impacts of their specific projects, e.g. by facilitating replication of the SCP concept relevant to the project. To do this, the section applies two different entry points.

First, it uses the SCP policy framework presented in Part 1 and identifies different elements of the framework relevant to each SWITCH-Asia project. This will give the reader a good understanding of what types of policies and policy instruments may be useful for increasing the positive environmental and social impacts of their specific projects.

Secondly, it provides a more specific “demand-driven” approach, which takes the point of departure of the SWITCH-Asia projects, the barriers existing for enhancing the positive impact of the specific projects and the opportunities for policy intervention to facilitate the SCP concepts employed by the projects. The section identifies typical SCP project-related policy objectives and provides examples of policy solutions to meet these objectives.

Lastly, the report contains 4 case studies, which describes different types of SCP policy instruments with real-life examples of SCP policies and instruments in Asia and Europe for four different types of instruments.
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1. INTRODUCTION

Sustainable Consumption and Production (SCP) is, by its very nature, a rather broad policy field and can potentially cover policies within many diverse fields such as environment, energy, climate, waste, transport, research and education, food and agriculture, urban and rural development, finance, economy, trade and social issues. Furthermore, SCP may be interpreted quite differently in different regions of the world. Thus, to reach a common understanding of what is meant by SCP policies, a scoping and structuring of the policy field of SCP is useful and desirable.

For this purpose an SCP Policy Framework is presented. The aim of the Framework is to provide a logical structure for presenting the pamphlet of SCP policies and policy instruments available – or in other words the toolbox of SCP Policies. Specific emphasis is given to those policies and instruments most relevant to SWITCH-Asia projects and related stakeholders.

1.2 PRESENTING THE SCP POLICY FRAMEWORK

Figure 1 below presents a framework for policies on Sustainable Consumption and Production (SCP). The objective of the framework is to provide an overview of different types of SCP policies relevant to SWITCH-Asia projects. The framework reflects recent developments in SCP policy-making and is largely based on the content and structure of relevant European and Asian political documents. The framework is split into three overall clusters:

- The top level (•) focuses on economy wide strategies, action plans, targets and indicators and on the national institutional framework for supporting and promoting SCP. The two lower clusters (• and ●) provide the headline areas within key life-cycle stages and key production and consumption clusters respectively. The yellow box describes elements potentially found under each of the headline area in the blue and purple boxes. These include policies in the form of thematic strategies, action plans and programmes focussing specifically on a single life-cycle stage or to a single consumption cluster, and the instruments which have been adopted to implement these strategies, programmes and policies. The policy instruments include regulatory instruments and standards, economic instruments, information-based instruments and voluntary agreements (●).

- Policies aimed at alleviating poverty have not been singled out as a distinct policy field in the framework. Instead poverty alleviation is to be considered a strong cross-cutting element throughout the policy framework in line with one of the main aims of the SWITCH-Asia programme, which is to help Asian countries adopting more sustainable growth patterns through promoting SCP among SMEs in Asia. The Frame-
work reflects recent developments in SCP policymaking in different regions and is based on a draft Conceptual Framework of SCP Policies at the National Level developed by the European Topic Centre on Sustainable Consumption and Production (ETC/SCP) and the European Environment Agency (EEA) (ETC/SCP and EEA, not yet published), which has been further developed for this purpose. It also builds on the content of relevant political and scientific documents (e.g., national SCP action plans, UNEP RIM SCP policy review papers, national reporting of SCP policy progress to UNDESA, research papers, etc.).

All components of the policy framework are explained in detail below, together with a description of what types of policies and policy instruments are covered. Emphasis is given to SCP policy areas and instruments with particular relevance to the SWITCH-Asia programme, and the conceptual descriptions are supplemented by a brief description of the latest policy development within this field as well as real-life examples from Asia and Europe.
1.3 THE OVERALL NATIONAL POLICY FRAMEWORK ENCOURAGING SCP AND SUPPORTING IMPLEMENTATION OF SCP

The overall national policy framework constitutes the umbrella under which specific national SCP policies and instruments exist. It covers crosscutting economy-wide SCP related strategies, programmes and action plans, targets and indicators as well as the institutional framework supporting SCP, but does not include specific SCP policy instruments. The key elements of the overall national policy framework on SCP and their relationship are illustrated in figure 2. Strategies, programmes and action plans provide the overall strategic frame, whereas the institutional framework and processes regarding stakeholder engagement to support SCP make up the foundation necessary for implementation of SCP policies independent of their nature.

1.3.1 STRATEGIES, PROGRAMMES AND ACTION PLANS

This element of the SCP policy framework includes overarching economy-wide and crosscutting strategies, programmes and action plans aimed to promote SCP and introduced at the national level, and that affect all economic stakeholders. Examples include national SCP strategies and action plans, but also sustainable development strategies, environmental action plans, climate change strategies and protocols requiring integration of sustainability criteria in policy developments across policy domains. These overarching strategies, programmes and action plans are planning instruments most often containing a vision, strategic objectives, specific targets and concrete actions and designed with the aim to achieve broad goals, e.g. to make overall national production and consumption patterns more sustainable.

At the global level, the Marrakech Process and the UN Commission on Sustainable Development (CSD) constitute the must important framework for action on SCP. The UN CSD is the high-level forum for sustainable development within the United Nations system and the Commission is responsible for reviewing progress in the implementation of Agenda 21 (UN, 1992a), the Rio Declaration (UN, 1992b) and the Johannesburg Plan of Implementation (UN, 2002). The expected outcome of the UN CSD process (UNDESA, 2010a) related to SCP is the agreement for a global 10 Year Framework of Programme on SCP at the CSD-19 meeting in May 2011, as called for by the WSSD Johannesburg Plan of Action. The Marrakech Process (UNDESA, 2010b) is a global process with the overall objective to support the elaboration of this 10-Year Framework of Programmes (10YFP) on SCP. The EU Action Plan on Sustainable Consumption and Production and Sustainable Industrial Policy (EC, 2008) provides the overall EU policy framework dedicated to address environmental impacts from production and consumption. It seeks to improve the supply and stimulate demand for sustainable products and services. This includes the strengthening and extension of the Eco-design Directive, the EU Eco-label and Energy Label Directives, and Green Public Procurement as well as establishment of a retailer forum. At country level, at least 15 EU countries have adopted national SCP strategies either as stand-alone overarching SCP strategies or action plans (Czech Republic, Finland, Poland and
the UK) or as a key theme within national sustainable development strategies (Austria, Belgium, Denmark, Finland, France, Hungary, Italy, Malta, the Netherlands, Romania, Sweden) (ETC/RWM and EEA, 2007; EEA, 2010; Watson et al, 2009 and Adell et al, 2009). In addition, several countries are integrating SCP aspects into strategies, action plans and programmes under other themes, such as transport or agriculture.

In Asia, the “Green Growth” regional initiative embraced in March 2005 by delegates from countries in Asia and the Pacific provides an important framework for SCP (UNESCAP, 2010). The Green Growth approach seeks to harmonize the two imperatives of economic growth and environmental sustainability by promoting “fundamental changes in the way societies produce and consume”, as called for in the Johannesburg Plan of Implementation. Furthermore SCP action plans have been developed in some countries and are under development in others. China has a three pronged strategy that encompasses a circular economy, resource efficiency and environmental protection, Thailand has developed an SCP Action Plan and Indonesia is developing a national SCP programme. UNEP has developed a guidance document on how to plan, develop, implement and monitor national programmes on promoting SCP (UNEP, 2008a), which can be used for inspiration and guidance.

1.3.2 SCP TARGETS AND INDICATORS
This refers to quantitative SCP-relevant targets defined in the above strategies and action plans that stimulate action towards SCP, as well as key SCP indicators and indicator sets at the national level aimed at measuring progress in SCP. Examples of targets include national greenhouse gas emission reduction targets and targets on increasing the market share of eco-labeled products. Examples of indicators might include total national energy consumption, material consumption and rate of environmental taxes in % of GDP. Ambitious long term targets are important tools to encourage SCP since they can contribute to triggering action by creating markets and a fertile environment for investments and long-term strategic planning for different actors, not least businesses. Similarly, indicators are essential for measuring progress towards SCP, pointing to undesirable trends and challenges and identifying new emerging areas in need of policy response. No SCP targets have been set at the global level, although many Asian and European countries today have established targets that are relevant to SCP, including targets for greenhouse gas emission reductions, recycling rates and energy-efficiency.

On measuring progress towards SCP, UNEP has developed a guidance framework for SCP indicators for developing countries (UNEP, 2008b). In Europe, the European Environment Agency has devel-

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**BOX 1: EXAMPLES OF SCP STRATEGIES, PROGRAMMES AND ACTION PLANS**

**GETTING MORE AND BETTER FROM LESS – FINLAND’S NATIONAL PROGRAMME TO PROMOTE SCP**

Finland’s proposed programme to promote sustainable consumption and production was one of the first such national programmes to be drafted anywhere in the world. The programme was prepared by the KULTU Commit-tee appointed by the Ministry of the Environment and the Ministry of Trade and Industry. The committee’s 31 members included officials from various ministries as well as representatives from academia, business, and environment and consumer organisations. The key objectives of the programme are to increase the efficiency of the usage of materials and energy through all stages of product life-cycles, and to promote environmental education and the development and adoption of environmental technologies.

http://www.environment.fi/default.asp?contentid=149254&lan=en

**EU SCP ACTION PLAN**

The scope of the EU SCP/SIP Action Plan is largely aimed at improving the environmental performance of products and increasing the demand for more sustainable goods and production technologies. It includes a number of proposals for achieving this including a revision of the 2005 EU Eco-Design Directive for Energy-Using Products to extend the scope to energy related products, a strengthening and extension of the EU Eco-label and the Energy Label, a Communication on Green Public Procurement and the establishment of an EU Retail Forum to work on the promotion of sustainable consumption with retailers.

oped an SCP indicator framework to be used for reporting on SCP progress in Europe (ETC/SCP, 2010) and SCP also occupies one thematic area in Eurostat’s Sustainable Development Indicators (Eurostat, 2009).

In addition, a number of countries with national sustainable development strategies have established accompanying sets of sustainable development indicators, which often contains indicators relevant to SCP. Dedicated SCP indicator sets addressing SCP in a detailed manner have been introduced in Belgium, the Czech Republic, France and UK (ETC/RWM and EEA, 2007 and ETC/SCP and EEA, 2010). However, such indicator sets are still scarce.

**Box 2: Examples of SCP Targets and Indicators**

**German Targets on Resource and Energy Productivity**
As part of the German Federal Sustainable Development Strategy (2002), two ambitious SCP relevant targets were set. Both energy productivity and resource productivity should double by 2020 compared to 1990 and 1994 respectively.

http://www.bmu.de/english/international_environmental_policy/johannesburg_summit_2002_/doc/3403.php

**UK SCP Indicator Set**
The UK has established a comprehensive set of indicators to help measure progress in SCP. These include carbon dioxide emissions by end users, household energy use, carbon dioxide and air pollutants from different sectors, resource use, water consumption, waste, investments and more.


**Box 3: Examples of Current and Past SCP Relevant Institutions in Asia and Europe**

Examples of current and past SCP relevant institutions in Asia and Europe include amongst others:

- National ministries on environment, climate change or sustainable development,
- Asia-Pacific roundtable on SCP (http://www.aprscp.net),
- European roundtable on SCP (http://www.erscp-emsu2010.org),
- National Cleaner Production Centres (http://www.unido.org/index.php?id=o5133),
- SCPnet in the UK (http://www.scpnet.org.uk),
- Regional Helpdesk on SCP in Asia and the Pacific (http://www.scphelp.org),
- The European Environment Agency (http://www.eea.europa.eu/themes/households),
- The European Topic Centre on SCP (http://scp.eionet.europa.eu),
- The European Environment Information and Observation Network (EIONET) including its National Reference Centres on SCP (http://www.eionet.europa.eu),
- UNEP Regional Offices in Bangkok and Geneva (http://www.roap.unep.org and http://www.unep.ch/roe),
- UNESCAP (http://www.unescap.org/esd),
- Asian and European regions as well as the task forces under the Marrakech Process (http://www.unep.fr/scp/marrakech).

**1.3.3 Institutional Framework and Stakeholder Engagement to Support SCP**

An institutional framework and proper capacity building within these institutions are key prerequisites for successful policy-making independent of which approach is chosen, which thematic areas are targeted and which policy instruments are selected. The institutional framework for SCP includes public organisations, working groups, networks, task forces, etc. working on SCP at the national and regional level. These will have been set up to facilitate and promote SCP policies and actions from a variety of stakeholders, including the business sector. In Asia, National Cleaner Production Centers (NCPCs) have been established in Cambodia, China, India, Korea, Sri Lanka and Vietnam.

Stakeholder engagement is an important tool for governments in developing new policies in any policy field. However, the active involvement of businesses, academia, NGOs and other stakeholders becomes even more valuable in such a wide and cross-cutting policy field as SCP. In some countries stakeholder engagement processes are highly formalised with several hearing or consultation stages, workshops, etc., whereas in others stakeholder engagement takes place more on an ad-hoc basis.

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1 Eurostat is the statistical office of the European Union. Its task is to provide the European Union with statistics at European level that enable comparisons between countries and regions.
Within each element of life-cycle stages (extraction, production, market, use and end-of-life) and within production-consumption areas (food and drink, housing, mobility, tourism and clothing) various kinds of measures may be taken by government to promote greater sustainability. These can be categorised as follows (see text box 5 for more information):

1. **Thematic strategies, programmes and action plans related to that life-cycle stage or production-consumption area**

2. **Regulatory instruments and standards**

3. **Economic instruments**

4. **Information-based instruments**

5. **Voluntary agreements**

Elements 2 to 5 can be described as policy instruments, i.e. the means to implement the objectives within the strategies and policies in element 1. See text box 4 and 5 for more detail. Please note that the above list of categories of policies and policy instruments is not exhaustive, but presents the categories of policy instruments that are considered to be most relevant in relation to SWITCH-Asia projects and the SWITCH-Asia programme as such. Examples of other categories not included in this policy tool box include research as well as infrastructure investments and urban planning.

The four case studies at the end of this toolbox provide a more comprehensive insight into the implementation of SCP policy instruments. Each case study examines one type of instrument, together with an implementation from Europe and one from Asia. The first uses environmental taxes to explore the use of economic instruments. The second uses eco-labels to explore the use of information based instruments. The third examines Green Public Procurement in Japan and the UK. The fourth looks directly at voluntary agreements between businesses.
BOX 5: TYPES OF POLICIES AND POLICY INSTRUMENTS IN FOCUS

Each of the components section 1.5 SCP policies and instruments in key life-cycle stages of production and consumption and 1.6 SCP policies and instruments in key production-consumption clusters of high environmental impact focus on the following elements including policies and policy instruments:

THEMATIC STRATEGIES, PROGRAMMES AND ACTION PLANS

These include strategic policy documents aimed at providing the overall basis for policy action within a specific policy area by describing the vision, strategic objectives, specific targets and concrete action. Examples include waste management strategies or an action plan on cleaner production. The key relevance to businesses, including SMEs, of such strategic policy documents are often targets, which may create new markets and thus provide an important basis for strategic planning.

REGULATORY INSTRUMENTS AND STANDARDS

These include elements such as product and substance bans, emissions limits, production process standards, minimum product standards and building codes aimed at determining which products, services, substances and production methods should be allowed. The application of SCP related regulation may be of high importance to businesses since they could potentially destroy and create markets (e.g. bans of certain products will often create new markets).

ECONOMIC INSTRUMENTS

These include instruments such as fees and charges, taxes and subsidies, cap and trade schemes, feed-in tariffs, tradable permits, deposit-refund systems, etc. Examples include energy taxes, water taxes and subsidies for development or feed-in tariffs for renewable energy installations. Economic instruments could serve different aims from internalising external costs to promoting specific technologies. The use of economic instruments can greatly influence the market conditions for businesses, including SMEs, by increasing or reducing supply and/or demand for specific products and services.

INFORMATION-BASED INSTRUMENTS

These include instruments such as eco-labeling, consumer guidelines, consumer campaigns, websites and portals, education on SCP and training seminars for authorities and/or the private sector all aimed at raising awareness about SCP. The impact of information-based instruments on businesses is often less direct and more long-term. Yet, such instruments can be a key driver in creating new markets and business opportunities over time (e.g. organic products).

VOLUNTARY AGREEMENTS

These are often developed by partnership between government and business and are aimed at achieving environmental benefits in an efficient manner by involving business directly. This category also includes stake-holder engagement in the broader sense. Examples include voluntary reporting initiatives, setting of voluntary targets for product improvements and emissions reductions, voluntary certification schemes, etc. Voluntary agreements can influence SMEs either directly if they become involved in such or indirectly if their clients engage in such agreements.
Research has shown that specific policy instruments can have a positive effect when applied as single instruments promoting. However, well-designed mixes of different complementary instruments such as regulatory-, economic- and information-based instruments as well as voluntary agreements and network facilitation have been shown to be more effective at encouraging and enabling SCP (Berg, 2007; Jackson and Michaelis, 2003; Rubik et al, 2009; Sustainable Consumption Roundtable, 2006). Figure 3 provides an overview with examples of policy instruments for each category and illustrates that these can be applied as single instruments or in combination to address a specific policy needs. The figure will be used in the following sections to provide examples of concrete policies and policy instruments available aimed at specific product life-cycle stages or production-consumption clusters.

Figure 3: Overview of different kinds of policies and instruments divided into different categories

**POLICY CHALLENGE**

- **Strategies and action plans**
  - Examples: SCP action plans, sustainable development strategies, environmental action plans.

- **Regulatory instruments**
  - Examples: Regulatory requirements for energy performance of buildings, EU Eco-design Directive.

- **Economic instruments**
  - Examples: Energy and fuel taxes, emission-based car taxes, water fees, subsidies for renewable energy systems and energy-saving in buildings, white certificates, traffic congestion charges, deposit-refund schemes.

- **Information-based instruments**
  - Examples: Guidelines and portals, campaigns, the European Eco-label, the EU Organic food label and the Energy Label.

- **Voluntary agreements**
  - Examples: Public-private partnerships, the EMAS registration system, the EU Retail Forum and the European Pollutant Emissions Register.
In many cases policies are designed to address specific stages in the economy seen from the perspective of the life-cycle of materials and product groups. These stages comprise: the extraction of resources; production (including delivery of services); the market place; use; and end-of-life (i.e. waste management). As described above, the focus in this tool box is on 1) Thematic strategies, action plans and programmes, 2) Regulatory instruments and standards, 3) Economic instruments, 4) Information-based instruments and 5) Voluntary agreements related to that ‘life-cycle stage’ of the economy. 

In the following sections, policies and instruments that can be adopted at each ‘life-cycle stage’ of the economy are described in more detail, and a brief description of latest policy developed within the field is provided alongside real-life policy examples.

### 1.5.1 EXTRACTION, USE AND MANAGEMENT OF RAW MATERIALS

Policies and policy instruments relevant at this life-cycle stage are those targeted at minimising the environmental impacts from the extraction, use and management of raw materials. Examples of such policies include national raw materials strategies, renewable materials strategies, water management strategies and taxes on raw materials. The overall strategic framework for addressing use of raw materials in EU is provided by the Thematic Strategy on the Sustainable Use of Natural Resources launched in 2005 with the objective to reduce the environmental impacts associated with resource use and to do so in a growing economy. At the international level, the International Panel on Sustainable Resource Management was established in 2007 to contribute to tackling the growing use of materials and resources by providing independent scientific assessment of the environmental impacts caused by the use of resources over the full life-cycle, and advise governments and organisations on ways to reduce these impacts.

### BOX 6: SINGAPORE NATIONAL WATER RESOURCE DEVELOPMENT STRATEGY

The comprehensive strategy included economic, information and regulatory instruments, alongside institutional reform and the integration of land use planning to manage Singapore’s scarce water resources. It placed tax on water to limit its use, and tax exemption and subsidies for water saving projects, while aiming to reduce per capita domestic water consumption to 155 litres/day by 2012. (World Bank, 2006)
Examples of specific policies and policy instruments within the field of extraction, use and management of raw materials are presented in figure 4 below.

**1.5.2 LEANER AND CLEANER PRODUCTION AND THE ENVIRONMENTAL TECHNOLOGIES SECTOR**

This refers to policies aimed at greening production and promoting environmental technologies and include policies promoting application of cleaner production, use of environmental management systems in business, greening of supply chains, corporate social responsibility, environmental accounting and reporting as well as environmental technologies, including renewable energy. Examples include national cleaner production strategies, the EU Environmental Management and Audit Scheme (EMAS), life-cycle assessment (LCA) programmes, environmental technology action plans and industrial ecology initiatives.

In EU, the Environmental Technology Action Plan is a key policy in supporting more eco-efficient technologies in Europe. Several European countries have established programmes to promote environmental technologies, for example the UKs New Technologies Demonstrate Pro-
gramme (NTDP) and the Technology Research & Innovation Fund (TRIF), and the Irish Environmental Technologies programme.

Several initiatives have also been introduced at the national level to facilitate the use of environmental management systems in business and the public sector. National action plans on Corporate Social Responsibility have been developed for some European countries, such as Denmark (Danish Government, 2008).

Examples of specific policies and policy instruments within the field of leaner and cleaner production and the environmental technologies sector are presented below.

**Figure 5: Examples of policies and policy instruments within the field of leaner and cleaner production and the environmental technologies sector**

**Leaner and Cleaner Production and the Environmental Technologies Sector**

- **Strategies and action plans**
  - Cleaner production strategy
  - Environmental Technologies Action Plan
  - Sectoral environmental strategies

- **Regulatory instruments**
  - Sustainability reporting obligations for public and/or private institutions

- **Economic instruments**
  - Feed-in tariffs and subsidies for green technologies
  - Eco-innovation fund
  - Multi-sectoral or sector-specific charges, taxes, emission trading
  - Ecological tax reform targeted at industry
  - Phasing out of environmentally harmful subsidies for industry / agriculture
  - White Certificates
  - Citizen-based investment schemes for renewable energy

- **Information-based instruments**
  - Guidelines for corporate green purchasing

- **Voluntary agreements**
  - Voluntary environmental certification systems (e.g. EMAS/ISO14001, organic)
  - Industrial symbiosis initiatives
  - Sectoral voluntary agreements
  - Cleaner production / environmental savings / eco-innovation awards
  - eco-innovation knowledge networks

**Box 7: Danish Law on the Promotion of Renewable Energy**

The law contains a number of initiatives all aimed at promoting the production of energy based on renewable energy sources. Such initiatives include: compensation for loss of property value due to erection of windmills, opportunities to invest in windmills erected for local citizens, subsidies for windmills, subsidies for solar cells, wave energy and other renewable energy, etc. ([https://www.retsinformation.dk/Forms/R0710.aspx?id=122961](https://www.retsinformation.dk/Forms/R0710.aspx?id=122961))
1.5.3 BETTER PRODUCTS AND SERVICES AND THE MARKET PLACE

This element covers policies and related policy instruments aimed at promoting the supply and sale of greener/more sustainable products and services. Examples include Integrated Product Policy (IPP) strategies, eco-design policies, eco-label programmes, policies addressing the retail sector and policies supporting fair trade. Some recent policy developments in EU include the revision of the Eco-design directive (EC, 2009) to include not only energy using products, but a broader group of energy-related products like windows, and the establishment of an EU retailer’s forum (EC, 2010). The latter has been set up with the aim to exchange best practices on sustainability in the European retail sector and to identify opportunities and barriers that may further or hinder the achievement of sustainable consumption and production. Examples of specific policies and policy instruments within the field of better products and services and the market place are presented below.

Figure 6: Examples of policies and policy instruments within the field of better products and services and the market place

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BOX 8: CHINA MINIMUM ENERGY PERFORMANCE STANDARDS (MEPS)

Together with international assistance, China has implemented a series of MEPS to help increase energy efficiency in home appliances and ease the growing demand for domestic electricity. These standards cover a range of consumer goods including refrigerators, air conditioners and washing machines, and are projected to save a cumulative 1143 TWh by 2020, or 9% of the predicted cumulative consumption to that year. (Clasp, 2007)
1.5.4 SMARTER CONSUMPTION
(HOUSEHOLD CONSUMPTION
AND PUBLIC CONSUMPTION)

This includes policies and related instruments aimed at exerting direct influence on the decision-making of private consumers and policies aimed at changing or adjusting the “framework conditions”, as well as policies on more sustainable procurement by the public sector. Examples include consumer policies, Green Public Procurement (GPP)/Sustainable Public Procurement (SPP) policies, consumer campaigns, and green taxes aimed at consumers.

Most policies aimed at promoting more sustainable household consumption have been using soft policy instruments, such as campaigns, eco-labels and other information-based instruments, whereas regulatory measures and extensive use of economic instruments to reduce impacts from private consumption are politically sensitive and consequently rare. Prominent exceptions include increasing taxes on supply of water, electricity and other energy services to households and measures introduced for traffic management including increasing fuel taxes increased parking restrictions and a few examples of road pricing (City of London and Stockholm).

On public consumption several policy initiatives are being developed. At the EU level, guidelines for national GPP action plans have been developed, green criteria for an increasing number of product categories developed and voluntary targets established. In 2003, the European Commission recommended to EU Member States to adopt national action plans on GPP by the end of 2006. To date, 20 Member States have adopted a national action plan or equivalent (Belgium, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, and UK).

BOX 9: IMPLEMENTATION GUIDANCE ON PUBLIC PROCUREMENT
OF ENERGY SAVING PRODUCT IN CHINA

The guidance for implementation of public procurement policies on energy saving products is designed to increase the energy saving effect, develop government model effect, expand the market of energy saving products and promote development of energy saving technology by favouring products that are classified as energy saving on the official “Public Procurement List of Energy Saving Products”.

(http://www.public-procurement.cn/english/case%20studies.html)
Examples of specific policies and policy instruments within the field of smarter consumption (household consumption and public consumption) are presented below.

1.5.5 END-OF-LIFE MANAGEMENT

This component covers policies aimed at waste prevention and promoting sustainable waste management practices. Examples include waste management plans, landfill taxes and extended producer responsibility schemes.

The most predominant actions in this area concern end-of-life and waste management, including recycling. Regulatory and economic measures are commonly employed to ensure that different waste types are appropriately handled. Waste prevention has seen fewer and generally softer initiatives, employing mainly information based tools to reduce waste generated from both for individual households and businesses.

In the European Union, the Thematic Strategy on the Prevention and Recycling of waste launched in 2005, make up the overarching policy document.
Emerging policy issues within this field include addressing food waste throughout the life-cycle and application of the cradle-to-cradle concept. This will then link end-of-life policies more directly to policies on resources i.e. ‘closing the loop’ between waste and resource.

**BOX 10: EU LANDFILL DIRECTIVE**

This EU directive was introduced “to prevent or reduce as far as possible negative effects on the environment […] from the landfilling of waste, during the whole life-cycle of the landfill”. It used binding targets for the amount of bio-degradable waste going to landfill. Member states are compelled to devise legislation to ensure meeting these targets.

(http://ec.europa.eu/environment/waste/landfill_index.htm)

Examples of specific policies and policy instruments within the field of end-of-life management are presented below.

*Figure 8: Examples of policies and policy instruments within the field of End-of-life management*

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2 Cradle-to-cradle is a holistic economic, industrial and social framework that seeks to create systems that are not just efficient but essentially waste free. The concept in its broadest sense is not limited to industrial design and manufacturing, it can be applied to many different aspects of human civilization such as urban environments, buildings, economics and social systems.
### 1.6 SCP POLICIES AND INSTRUMENTS IN KEY PRODUCTION-CONSUMPTION CLUSTERS OF HIGH ENVIRONMENTAL IMPACT

#### Key Production Consumption Clusters of Highest Environmental Impact

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food and drink</td>
<td>(including the agriculture sector)</td>
</tr>
<tr>
<td>Housing</td>
<td>(including the construction sector, appliances and ICT)</td>
</tr>
<tr>
<td>Mobility</td>
<td>(including transport and infrastructure)</td>
</tr>
<tr>
<td>Tourism</td>
<td>(including hotels and restaurants)</td>
</tr>
<tr>
<td>Clothing</td>
<td>(including textile production)</td>
</tr>
</tbody>
</table>

#### 1.6.1 Food and Drink

Policies and policy instruments relevant to this cluster include those aimed at reducing the environmental impacts from food and drinks. For example, by addressing more sustainable agriculture, food manufacturing and food consumption as well as policies aimed at reducing food waste. Examples include agricultural, environmental strategies and organic farming strategies. Consumption of food and drinks contribute significantly to the overall environmental impacts of production and consumption in all regions of the world. Studies (e.g. JRC and ETC NAMEA) estimate that roughly 20-30% of key environmental pressures and impacts in Europe, including global warming and acidification, can be ascribed to eating and drinking.

Environmental impacts are caused during all stages along the food product chain, but agricultural production and to a lesser extent industrial processing are responsible for the most significant pressures and impacts caused by eating and drinking (EEA 2005; ETC/SCP, 2009; Foster et al 2006). Environmental impacts of different types of food and drink vary considerably. Beef, butter and cheese have higher environmental footprints, especially carbon and material footprints, while vegetables, cereal products, potatoes and fruits have much lower footprints.
In the Nordic countries many grocery shops have a possibility to apply for Nordic Swan – an environmental label awarded to best performing shops. Nowadays, it is not only large stores that apply, but even medium and small scale shops. For example, in October 2008 300th shop has been awarded the Nordic Eco-label and it is a relatively small shop in Southern Sweden (Nordic Ecolabeling, 2008). To receive the Nordic Eco-label, stores must have a certain selection of organic and environmentally sound products and must further reduce their impacts on the environment, by for example improving energy efficiency of their operations, reducing and sorting waste and other measures.

The figure below provides an overview with examples of policy instruments used to reduce environmental impacts from food and drinks.

**Figure 9: Examples of policies and policy instruments within the field of Food and drink**
1.6.2 HOUSING
This category covers policies and policy instruments aimed at more sustainable use of construction materials, promotion of low energy and zero energy housing, reduction of electricity use for appliances, green ICT and prevention of construction waste. Examples include sustainable construction strategies, housing policies and strategies on reducing energy consumption in buildings. Housing, including energy consumption during the lifetime of buildings – for space heating, water heating and use of electric appliances in the buildings – is a key cause of environmental impacts, making up roughly 25-30% of overall environmental pressures, including greenhouse gas emissions and use of raw materials. The majority of these environmental pressures are caused by energy use during the use phase of houses. The figure below provides an overview with examples of policy instruments used to reduce environmental impacts from housing.

**BOX 12: PUNE ECO-HOUSING PROGRAMME – INDIA**

The Pune Eco-housing Programme has four major components: solar and wind energy, recycling of solids and wastewater, rainwater harvesting, and construction materials. The programme aims to establish guidelines for eco-construction, develop financing mechanisms for eco-housing, and establish showcases of eco-housing projects to serve as case studies for contractors who are interested in eco-friendly construction. The Pune Municipal Corporation (PMC) has established eco-housing assessment criteria which serve as tools for architects, contractors, financial institutions and building owners to measure the environmental sustainability of their buildings. Eco-housing certificates are being issued, which result in reduced taxes and effectively promote further eco-housing development.

These activities have also increased the interest of Indian contractors in improving environmental aspects of new construction. (Marrakech Task Force on Sustainable Buildings and Construction). ([Link: http://gec.jp/gec/EN/Activities/2006/Eco-Towns/Pune.pdf])

![Figure 10: Examples of policies and policy instruments within the field of Housing](image-url)

**SUSTAINABLE HOUSING**

- **Strategies and action plans**
  - National sustainable construction strategy
  - National housing strategy
  - National energy efficiency action plan

- **Regulatory instruments**
  - Regulation on energy performance requirements for new buildings
  - Regulation on energy performance requirements for renovation of existing buildings
  - Energy requirements for frames and windows in new buildings
  - Requirements for separate measurements of energy consumption for larger buildings
  - Mandatory energy audits
  - Subsidies for zero-emission housing
  - Grants for insulation, energy efficiency investments or renewable energy
  - White certificates
  - Environmental charges on water and energy
  - Differentiation in real estate taxes based on buildings energy efficiency profile
  - Eco-loan at zero rates
  - Grants for ability metering in households

- **Economic instruments**
  - Behaviour change campaigns to promote energy and water savings
  - Energy label for buildings
  - Guidance for citizens on energy savings
  - Fuel mix disclosure on energy bills

- **Information-based instruments**
  - Voluntary agreements with construction sector on commitments to reduce amounts of construction and demolition waste and improve energy-efficiency, etc.
  - Public-private partnership for reduced energy consumption in buildings

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*Sustainable Consumption and Production Policies – A Policy Toolbox for practical use*
1.6.3 MOBILITY
This category covers policies and policy instruments aimed at promoting more sustainable modes of transportation, at reducing transport demand, and at improving the eco-efficiency of transportation. Examples include transport policies and non-motorised mobility (cycling, walking) strategies. Mobility contribute significantly to overall environmental pressures – not least greenhouse gas emissions and air pollutants – in all regions of the world and the impacts are increasing as people are moving further and faster than ever before. The figure below provides an overview with examples of policy instruments used to reduce environmental impacts from mobility.

**BOX 13: FRENCH ‘BONUS-MALUS’ SYSTEM FOR THE PURCHASE OF PRIVATE CARS**

The bonus-malus system is a financial instrument targeting the reduction of greenhouse gas emissions through stimulating the consumer to buy less polluting cars by granting a financial reward (bonus) and at the same time penalizing financially (malus) the purchase of high-emission vehicles. The amount of the bonus or malus depends on the amount of CO2/km emitted by the vehicle. This will be:

- **Bonus:** €200-1,000 for vehicles emitting a maximum of 130g CO2/km and €5,000 for those emitting no more than 60g CO2/km. It will be higher still for even greener vehicles.
- **Malus:** €200-2,600 for those emitting over 160g CO2/km and even more for the least green vehicles.

The system will be progressively tightened by lowering the thresholds of eligibility for the bonus and imposition of the malus at a pace allowing manufacturers to adapt their production: 5g of CO2/km every two years. ([www.bonus-ecologique.com](http://www.bonus-ecologique.com), [www.bonus-ecologique.fr](http://www.bonus-ecologique.fr))

**Figure 11: Examples of policies and policy instruments within the field of Mobility**

**SUSTAINABLE MOBILITY**

- **Strategies and action plans**
  - National transport policy
  - National non-motorised mobility (cycling, walking) strategies
  - Climate strategies
  - Urban planning policies

- **Regulatory instruments**
  - Integration of environmental criteria in land use planning policies
  - Fuel efficiency and emission standards for vehicles
  - Public procurement on fuel-efficient cars
  - Speed limits
  - Campaigns to promote cycling, public transport or car sharing
  - Emissions/energy labeling on cars
  - Education for consumers on sustainable personal transport
  - Education for designers and town planners
  - Public-private partnerships for improvement of public transport
  - Promotion of working from home schemes

- **Economic instruments**
  - Vehicle registration fees
  - Feebates (differentiated fees based on fuel-efficiency)
  - Fuel taxes
  - Subsidies to public transportation
  - Subsidies or tax exemption of electric or hybrid vehicles
  - Grants for switching to alternative vehicle fuels and/or to replace inefficient cars
  - Remove subsidies for road and air transport

- **Information-based instruments**
  - Fuel efficiency and emission standards for vehicles
  - Public procurement on fuel-efficient cars
  - Speed limits
  - Campaigns to promote cycling, public transport or car sharing
  - Emissions/energy labeling on cars
  - Education for consumers on sustainable personal transport
  - Education for designers and town planners
  - Public-private partnerships for improvement of public transport
  - Promotion of working from home schemes

- **Voluntary agreements**
  - Voluntary agreements with car manufacturing sector on fuel-efficiency targets
  - Mandatory carbon footprint, labeling for air-travel
1.6.4 TOURISM
This category covers policies and policy instruments aimed at promoting more sustainable tourism both within and outside the specific country and region. Examples include sustainable tourism action plans and labeling schemes for hotels and eco-tourism. Environmental impacts from tourism include impacts from travelling to destinations, building of tourism facilities like hotels, second homes or tourism infrastructure, and activities at the destinations.

Examples of specific policies and policy instruments within the field of extraction, use and management of raw materials are presented below.

BOX 14: CAMBODIAN SUSTAINABLE TOURISM STRATEGY

The Cambodian Sustainable Tourism Strategy has as its overall objective that the development of tourism in the country should happen in a sustainable manner and contribute to reducing poverty. One initiative in this strategy is aimed at developing eco-tourism in the north-eastern part of the country. (http://www.veilleinfotourisme.fr/79494058/o/fiche__pagelibre/&RH=1178110141256&RF=REX)

Figure 12: Examples of policies and policy instruments within the field of Tourism

<table>
<thead>
<tr>
<th>Strategies and action plans</th>
<th>Regulatory instruments</th>
<th>Economic instruments</th>
<th>Information-based instruments</th>
<th>Voluntary agreements</th>
</tr>
</thead>
<tbody>
<tr>
<td>National sustainable tourism action plan</td>
<td>Limiting access to especially vulnerable areas</td>
<td>Grants for eco-friendly hotels</td>
<td>Eco-tourism labeling scheme for hotels, campsites, restaurants, etc.</td>
<td>Public-private partnerships on sustainable tourism</td>
</tr>
<tr>
<td>Establishment of national parks to protect wildlife</td>
<td>Tourism tax earmarked for nature protection</td>
<td>Information on clean beaches, e.g. Blue Flag</td>
<td>Promotion of EMS for the accommodation sector</td>
<td></td>
</tr>
<tr>
<td>Charges at tourist sites, e.g. national parks, ear-marked for nature protection</td>
<td>Awareness raising for tourists</td>
<td>Mandatory carbon footprint, labeling for air-travel</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SUSTAINABLE TOURISM
1.6.5 CLOTHING
This covers policies and instruments aimed at promoting more sustainable production and use of clothing, including in the textile sector. Examples include sustainable textile action plans, eco-labels for textiles, information campaigns, etc. While the environmental impacts from clothing are normally less than for eating and drinking, housing, mobility and tourism, they are by no means insignificant. In textile producing countries environmental impacts – especially water use and pollution from pesticide use – from this sector can be very large.

Examples of specific policies and policy instruments within the field of extraction, use and management of raw materials are presented below.

**BOX 15: UK SUSTAINABLE CLOTHING ACTION PLAN**

Launched in Sept 2007, the Sustainable Clothing Roadmap aims to improve the sustainability of clothing, by gathering evidence on the environmental, social and economic impacts, and working with a wide range of stakeholders across the clothing supply chain to build on existing interventions and add value to work already underway. (http://www.defra.gov.uk/environment/business/products/roadmaps/clothing/documents/clothing-action-plan-feb10.pdf)

Figure 13: Examples of policies and policy instruments within the field of Clothing

**SUSTAINABLE TEXTILES**

- **Strategies and action plans**
  - National sustainable clothing action plan

- **Regulatory instruments**
  - Mandatory sustainability reporting for major companies in the textile sector

- **Economic instruments**
  - Subsidies for production of organic cotton
  - Charges on pesticide use in cotton production

- **Information-based instruments**
  - Organic cotton labeling
  - Fair trade cotton labeling
  - Awareness raising of consumers on sustainable textiles

- **Voluntary agreements**
  - Public-private partnerships on sustainable textiles
  - Voluntary commitments on supply chain management in the textiles sector
  - Voluntary commitments from retailers on sales of organic cotton / sustainable textiles

Sustainable Consumption and Production Policies – A Policy Toolbox for practical use
2. SCP POLICIES AND INSTRUMENTS
FOR SWITCH-ASIA PROJECTS

2.1 INTRODUCTION

The first Chapter of this SCP Policy Toolbox outlined a framework for SCP policies. This served to clearly define what we understand by SCP policies, how within SCP policy making we distinguish between policies and instruments, and how these can be applied at different life-cycle stages of products and within key production-consumption clusters of high environmental impact. This serves to illustrate which policies can encourage and drive actions towards sustainable consumption and production.

This section uses two different approaches to illustrate how policy measures and instruments can be used to support and promote their particular activities. Both of these approaches take a point of departure in SWITCH-Asia projects themselves. This allows projects to combine the latest developments in SCP policy instruments with specific characteristics relevant to both the project and its cultural, political and economic setting to arrive at a set of instruments that will help develop, sustain and propagate the project and its practices. The first approach (chapter 2.2.1) links SWITCH-Asia projects to different specific policy fields of the SCP policy framework presented in chapter 1. It does that by identifying the life-cycle stages and production-consumption clusters that a given project operates within. However, this method does not reveal the full range of policy options that can be employed to support and enhance that project. Thus, the second approach presents policy options from an objectives-based perspective. This takes the perspective of SWITCH-Asia projects, and particularly SMEs, by defining a selection of generic policy objectives, culled from the SWITCH-Asia projects themselves, and presenting policy options that can help meet these objectives.
2.2 THE LINK BETWEEN SCP POLICY FIELDS AND SWITCH-ASIA PROJECTS

The SWITCH-Asia programme is designed to promote sustainable consumption and production in small and medium sized enterprises in Asia. Fifteen projects commenced in 2008, with a further fifteen in 2009, meaning that at the time of preparation of this report (August 2010), a total of 30 SWITCH-Asia projects were running in 15 different Asian countries. Some of these projects have a focus on a particular sector, whereas others are cross-cutting. Although the full scope of SCP covers the entire life-cycle of products, from material extraction through production, sale, use and waste disposal, the majority of the SWITCH-Asia projects to date work with businesses in the production phase (see table 1 below), with far fewer directly concerned with consumer behaviour or end of life treatment. Some projects will be seeking to influence national policy making, while others will focus on regional issues.

The approach presented in this section directly applies the policy framework introduced in chapter 1 to the projects. Each SWITCH-Asia project is positioned within the framework, and is linked to one or more life-cycle stages and production-consumption clusters. To identify the most relevant policy instruments, projects should consult the table below supplemented with their own specific knowledge of their project and return to the indicated sections of the framework described in chapter 1 to find real world examples of SCP policy instruments that have been applied in similar circumstances.

Table 1 below presents linkages between projects and the SCP policy framework.

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Country</th>
<th>Year</th>
<th>Life-cycle stage*</th>
<th>Priority area*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Re-tie: Reduction of environmental Threats and increase of exportability of Bangladeshi leather products</td>
<td>Bangladesh</td>
<td>2008</td>
<td>🔴🔴🔴</td>
<td></td>
</tr>
<tr>
<td>Establishing a Sustainable Production System for Rattan Products</td>
<td>Cambodia, Laos, Vietnam</td>
<td>2008</td>
<td>🔴🔴🔴</td>
<td></td>
</tr>
<tr>
<td>Electric Motor Systems Energy-Saving Challenge – China</td>
<td>China</td>
<td>2008</td>
<td>🔴🔴🔴</td>
<td></td>
</tr>
<tr>
<td>Improving Environmental and Safety Per-formance in Electrical and Electronics Industry in China (ecoefficiency, occupa-tional health &amp; safety and CSR.)</td>
<td>China</td>
<td>2008</td>
<td>🔴🔴🔴</td>
<td></td>
</tr>
<tr>
<td>Train the Trainers in Construction Sector</td>
<td>China</td>
<td>2008</td>
<td>🔴🔴🔴</td>
<td></td>
</tr>
<tr>
<td>SuPP-Urb: Sustainable Public Procurement in Urban Administrations in China</td>
<td>China</td>
<td>2008</td>
<td>🔴🔴🔴</td>
<td></td>
</tr>
<tr>
<td>Sustainable and Responsible Trade Promoted to Wood Processing SMEs through Forest and Trade Networks</td>
<td>China, India, Vietnam</td>
<td>2008</td>
<td>🔴🔴🔴</td>
<td></td>
</tr>
<tr>
<td>Sustainable Textiles for Sustainable Development</td>
<td>India</td>
<td>2008</td>
<td>🔴🔴🔴</td>
<td></td>
</tr>
<tr>
<td>Green Products Development and Labeling in Mongolia</td>
<td>Mongolia</td>
<td>2008</td>
<td>🔴🔴🔴</td>
<td></td>
</tr>
<tr>
<td>SCI-Pak: Sustainable and Cleaner Production in the Manufacturing Industries of Pakistan</td>
<td>Pakistan</td>
<td>2008</td>
<td>🔴🔴🔴</td>
<td></td>
</tr>
</tbody>
</table>

*Legend:  = Extraction |  = Production |  = Market |  = Use |  = End-of-life
 = Food and Drink |  = Housing |  = Mobility |  = Tourism |  = Clothing
<table>
<thead>
<tr>
<th>Project Title</th>
<th>Country</th>
<th>Year</th>
<th>Life-cycle stage*</th>
<th>Priority area*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainable Production in the Food &amp; Beverage Industry in Sri Lanka</td>
<td>Sri Lanka</td>
<td>2008</td>
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</tr>
<tr>
<td>Enhancing Environmental Performance in Key Sri Lankan Export Sectors</td>
<td>Sri Lanka</td>
<td>2008</td>
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<tr>
<td>MEET-BIS: Mainstreaming Energy Efficiency Through Business Innovation Support</td>
<td>Vietnam</td>
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</tr>
<tr>
<td>Helping Vietnamese SMEs Adapt and Adopt Corporate Social Responsibility (CSR) for Improved Linkages with Global Supply Chains in Sustainable Production</td>
<td>Vietnam</td>
<td>2008</td>
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</tr>
<tr>
<td>Jute: An Eco-friendly Alternative For A Sustainable Future</td>
<td>Bangladesh, India</td>
<td>2009</td>
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</tr>
<tr>
<td>SPIN-VCL: Sustainable Product Innovation in Vietnam, Cambodia and Laos</td>
<td>Cambodia, Laos, Vietnam</td>
<td>2009</td>
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</tr>
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<td>Establishment of the ASEAN Energy Manager Accreditation Scheme</td>
<td>Association of South-east Asian Nations</td>
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<td>Sustainable Revival of Livelihoods in Post-disaster Sichuan: enhancing Ecofriendly Propoor Bamboo Production Supply Chains to Support the Reconstruction Effort</td>
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<td>Sustainable Building Interior Renovation and Decoration Initiative in China</td>
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<tr>
<td>Implementing Industrial Symbiosis and Environmental Management System in Tjanjin Binhai New Area</td>
<td>China</td>
<td>2009</td>
<td><img src="false" alt="Extraction" /> <img src="false" alt="Production" /> <img src="false" alt="Market" /> <img src="false" alt="Use" /> <img src="false" alt="End-of-life" /></td>
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<tr>
<td>China Higher Efficiency Power and Distribution Transformers promotion Project</td>
<td>China</td>
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<tr>
<td>Establishing E-Waste Channels to Enhance Environment Friendly Recycling</td>
<td>India</td>
<td>2009</td>
<td><img src="false" alt="Extraction" /> <img src="false" alt="Production" /> <img src="true" alt="Market" /> <img src="false" alt="Use" /> <img src="false" alt="End-of-life" /></td>
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<tr>
<td>Pro-Sustain: Promoting Fair Trade And Sustainable Consumption In India</td>
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<td>2009</td>
<td><img src="false" alt="Extraction" /> <img src="false" alt="Production" /> <img src="false" alt="Market" /> <img src="true" alt="Use" /> <img src="false" alt="End-of-life" /></td>
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<tr>
<td>Encouraging and Implementing Sustainable Production and Consumption of Eco-friendly Batik in Indonesia and Malaysia</td>
<td>Indonesia, Malaysia</td>
<td>2009</td>
<td><img src="false" alt="Extraction" /> <img src="false" alt="Production" /> <img src="false" alt="Market" /> <img src="true" alt="Use" /> <img src="false" alt="End-of-life" /></td>
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<td>Sustainable Production (SP) of the Biomass Industries in Malaysia: Optimising Economic Potential and Moving Towards Higher Value Chain</td>
<td>Malaysia</td>
<td>2009</td>
<td><img src="false" alt="Extraction" /> <img src="false" alt="Production" /> <img src="false" alt="Market" /> <img src="true" alt="Use" /> <img src="false" alt="End-of-life" /></td>
<td><img src="false" alt="Food and Drink" /> <img src="false" alt="Housing" /> <img src="false" alt="Mobility" /> <img src="false" alt="Tourism" /> <img src="false" alt="Clothing" /></td>
</tr>
<tr>
<td>Urban Eco: Creating Greenphilippines Islands of Sustainability: environmental improvement of industrial development</td>
<td>Philippines</td>
<td>2009</td>
<td><img src="false" alt="Extraction" /> <img src="false" alt="Production" /> <img src="false" alt="Market" /> <img src="false" alt="Use" /> <img src="false" alt="End-of-life" /></td>
<td><img src="false" alt="Food and Drink" /> <img src="false" alt="Housing" /> <img src="false" alt="Mobility" /> <img src="false" alt="Tourism" /> <img src="false" alt="Clothing" /></td>
</tr>
<tr>
<td>SMART CEBU: SMEs For Environmental Accountability, Responsibility and Transparency</td>
<td>Philippines</td>
<td>2009</td>
<td><img src="false" alt="Extraction" /> <img src="false" alt="Production" /> <img src="false" alt="Market" /> <img src="true" alt="Use" /> <img src="false" alt="End-of-life" /></td>
<td><img src="false" alt="Food and Drink" /> <img src="false" alt="Housing" /> <img src="false" alt="Mobility" /> <img src="false" alt="Tourism" /> <img src="false" alt="Clothing" /></td>
</tr>
<tr>
<td>Zero Carbon Resorts (ZCR) - Building Energy Autonomous Resorts Creating Appropriate Technology Solutions</td>
<td>Philippines</td>
<td>2009</td>
<td><img src="false" alt="Extraction" /> <img src="false" alt="Production" /> <img src="false" alt="Market" /> <img src="true" alt="Use" /> <img src="false" alt="End-of-life" /></td>
<td><img src="false" alt="Food and Drink" /> <img src="false" alt="Housing" /> <img src="false" alt="Mobility" /> <img src="false" alt="Tourism" /> <img src="false" alt="Clothing" /></td>
</tr>
<tr>
<td>Greening Sri Lankan Hotels</td>
<td>Sri Lanka</td>
<td>2009</td>
<td><img src="false" alt="Extraction" /> <img src="false" alt="Production" /> <img src="false" alt="Market" /> <img src="true" alt="Use" /> <img src="false" alt="End-of-life" /></td>
<td><img src="false" alt="Food and Drink" /> <img src="false" alt="Housing" /> <img src="false" alt="Mobility" /> <img src="false" alt="Tourism" /> <img src="false" alt="Clothing" /></td>
</tr>
</tbody>
</table>
The following example clarifies how projects can use the above table in combination with the information about policy instruments in chapter 1 and project-specific knowledge to identify policy instruments that offer support to their particular activities and can thus contribute to replicating their specific project concept.

2.2.1 PROJECT EXAMPLE: “TRAIN THE TRAINERS”, TRAIN CHINESE CONSTRUCTION SECTOR SMES IN ENERGY SAVING TECHNIQUES AND TECHNOLOGIES

Concrete policy instruments can be discovered by examining the projects focus areas. The table above indicates that the project “Train the Trainers”, Train Chinese Construction Sector SMEs in Energy Saving Techniques and Technologies is involved with the life-cycle stage of production and the production-consumption priority area of housing. Thus, the policy instruments presented in chapter 1 within these elements of the SCP policy framework can be potentially useful for increasing the replication potential and positive impacts of this project. The project can then use knowledge about their specific project to derive promising policy options (see figure 14).

Thus, an example of a policy mix that could be effective in supporting the objective of the “Train the Trainers” project could include the following policy instruments:

- Regulations on energy-performance requirements for new buildings
- Campaigns and guidelines for citizens on energy savings
- Grants for insulation and energy-efficiency investments
- Environmental charges on energy in households
- Energy label for buildings
- Public/private partnership on development of technologies to reduce energy use in buildings

Regulations will reduce energy use in new buildings if implemented effectively. Campaigns and guidelines may educate citizens on energy savings, while grants, charges and labels will create economic incentives for investments in energy-efficiency improvements for existing buildings as well as energy savings using a carrot/stick approach. The public private partnership may lead to new and/or cheaper technologies for reducing energy use in buildings. These policy instruments could be part of a sustainable housing strategy.
Figure 14: Policies and policy instruments that are potentially useful for the project “Train the Trainers”, Train Chinese Construction Sector SMEs in Energy Saving Techniques and Technologies

Consideration of project specifics and social, economic, political and cultural context.

TRAIN THE TRAINERS, TRAIN CHINESE CONSTRUCTION SECTOR SMES IN ENERGY SAVING TECHNIQUES AND TECHNOLOGIES

**Strategies and action plans**
- Sustainable construction strategy
- Housing strategy
- Energy efficiency action plan
- Cleaner Production Strategy

**Regulatory instruments**
- Regulation on energy performance requirements for new buildings
- Regulation on energy performance requirements for renovation of existing buildings
- Energy requirements for frames and windows in new buildings
- Requirements for separate measurements of energy consumption for larger buildings
- Mandatory energy audits
- Energy efficiency requirements for housing in GPP strategy

**Economic instruments**
- Subsidies for low/zero-emission housing
- Grants for insulation, energy efficiency investments or renewable energy
- White certificates
- Environmental charges on water and energy
- Differentiation in real-estate taxes based on buildings’ energy efficiency profile
- Eco-loan at zero rates
- Grants for utility metering in households
- ESCOs

**Information-based instruments**
- Behaviour change campaigns to promote energy and water savings
- Energy label for buildings
- Guidance for citizens on energy savings
- Fuel mix / emissions disclosure on energy bills
- Training seminars for construction sector
- Guidelines for public purchaser regarding energy efficient housing

**Voluntary agreements**
- Voluntary agreements with construction sector on commitments to reduce amounts of construction and demolition waste and improve energy efficiency, etc.
- Public-private partnership for reduced energy consumption and material use in buildings
- Voluntary certification systems for construction sector
2.3 SCP POLICIES AND INSTRUMENTS FROM A DEMAND-BASED PERSPECTIVE

A demand-based perspective allows projects to identify a wider range of relevant SCP policies and instruments. This is because the success of a project can be affected not only by policy instruments that are directed at the particular life-cycle phase that the project operates within (for SWITCH-Asia projects, this is often the production phase) but also by policy instruments directed at other life-cycle phases (for example, policies directed at the market and use phase of the life-cycle).

To help projects identify policies and instruments that will be of most use, a range of top-level generic SCP policy objectives have been compiled:

- Promote Sustainable Production/Business Practices
- Promote Sustainable Product Design and Innovation
- Increasing demand for sustainable products and materials
- Promote export and International penetration
- Increase recycling of waste
- Improvement of monitoring and enforcement of regulations
- Improving sustainable infrastructure
- Increasing flow of capital toward sustainable products and materials within financial markets

These objectives reflect SWITCH-Asia project objectives and indeed are drawn from the projects themselves although are not project specific. The assumption is that those responsible for projects will be able to identify themselves with one or more of these objectives as an entry point to which policy instrument they should be recommending for governments to adopt.

The following sections present and explain the policy objectives identified and suggest possible policy instruments for meeting the corresponding objective. It should be kept in mind that there is as such no “one size fits all” and as illustrated throughout this toolbox, individual policies do not work in a vacuum, but within a policy framework. The impacts of different instruments depend not only on the details of their implementation, but also on existing or additional supporting policies as well as the social, economic, political and cultural background in which they are set. The latter is a key factor determining the acceptability and effectiveness of different types of policy instruments, such as regulatory instruments, economic instruments and voluntary agreements. While research shows that a mix of different complementary policy instruments tend to be more effective at encouraging and enabling SCP (ASCEE, 2008; Berg, 2007; Jackson and Michaelis, 2003; Sustainable Consumption Roundtable, 2006), the “policy mix” that can be employed to achieve a given policy goal will vary significantly from setting to setting. It has been noted in Europe that, for example, Green Public Procurement policies, eco-labeling initiatives and eco-design standards tend to reinforce each other, providing a potent driver for change.

2.3.1 PROMOTE SUSTAINABLE PRODUCTION/BUSINESS PRACTICES

and “Establishing a Sustainable Production System for Rattan Products in Cambodia, Laos and Vietnam”.

It deals with the changing of how businesses operate toward more sustainable practices in order to reduce the overall environmental impacts of delivering a certain goods or service and covers the life-cycle stages of extraction, production and market. It can amongst others include cleaner production methods, increasing energy-efficiency in production, improved process management and sustainable procurement. This objective applies not only for typical product/production-oriented businesses, but also equally to service (e.g. hotels, retail, etc.) sectors as well as those involved in the extraction of raw materials. Instruments that can be used to further this objective include:

**TABLE 2: EXAMPLES OF POLICIES AND POLICY INSTRUMENTS TO PROMOTE SUSTAINABLE PRODUCTION / BUSINESS PRACTICES**

| STRATEGIES AND ACTION PLANS | • Cleaner production strategy  
| • SCP action plan  
| • Environmental technology action plan  
| • Environmental strategies for specific business sectors |
| REGULATORY INSTRUMENTS | • Mandatory environmental / sustainability reporting for large companies and public institutions  
| • Water and air emissions limits  
| • Integrated pollution prevention and control  
| • Bans on damaging substances and practices |
| ECONOMIC INSTRUMENTS | • Feed-in tariffs for green technologies  
| • Cleaner production / eco-innovation funds  
| • Taxes and fees on raw materials – to encourage resource efficiency  
| • Water and air emissions fees  
| • Waste fees  
| • Phase out of environmentally harmful subsidies  
| • Business focused ecological-tax reform |
| INFORMATION-BASED INSTRUMENTS | • Education and training of personnel (including designers, process managers, energy managers, procurers) in cleaner production  
| • Training of environmental management officers in public institutions and private companies on environmental management systems  
| • Guidelines for sustainable corporate procurement  
| • Supply-chain labeling |
| VOLUNTARY AGREEMENTS | • Voluntary agreements on industry wide standards and targets for environmental improvements  
| • Networks, workshops, guidelines, etc. to promote environmental management systems certification schemes (e.g. EMAS/ISO14001)  
| • Networks, workshops, guidelines, etc. to assist companies and sustainable supply chain management  
| • Industrial Symbiosis initiatives  
| • Cleaner production / eco-innovation knowledge centres  
| • Cleaner production / eco-innovation awards |
2.3.2 PROMOTE SUSTAINABLE PRODUCT DESIGN AND INNOVATION

A lack of innovation often goes hand in hand with inertia to change within any given practice, and means that it can be difficult to promote and execute the development of sustainable products and materials. This objective seeks to promote the development of new goods and services that have a better environmental profile over the full life-cycle (resource extraction, production, market, use and end-of-life) than its current alternatives. Examples of SWITCH-Asia projects with this as a primary objective include “Sustainable Product Innovation in Vietnam, Cambodia and Laos”, “Mainstreaming Energy Efficiency Through Business Innovation Support (MEET-BIS) - Vietnam” and “Electric Motor Systems Energy-Saving Challenge – China”. Tools that address this seek to create an environment that is more receptive to new methods, tools, products and materials and include eco-design, product service systems and other approaches. Instruments that can be used to further this objective include:

<table>
<thead>
<tr>
<th>TABLE 3: EXAMPLES OF POLICIES AND POLICY INSTRUMENTS TO PROMOTE SUSTAINABLE PRODUCT DESIGN AND INNOVATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STATEGIES AND ACTION PLANS</strong></td>
</tr>
<tr>
<td>• Integrated product policy</td>
</tr>
<tr>
<td>• Environmental technology action plan</td>
</tr>
<tr>
<td>• SCP action plan</td>
</tr>
<tr>
<td><strong>REGULATORY INSTRUMENTS</strong></td>
</tr>
<tr>
<td>• Eco-design regulations</td>
</tr>
<tr>
<td>• Minimum energy performance standards for products (preferably progressive)</td>
</tr>
<tr>
<td>• Bans on environmentally damaging materials and products</td>
</tr>
<tr>
<td>• Extended producer responsibility, e.g. take-back obligations or deposit/refund schemes</td>
</tr>
<tr>
<td>• Green Public Procurement regulation</td>
</tr>
<tr>
<td><strong>ECONOMIC INSTRUMENTS</strong></td>
</tr>
<tr>
<td>• Differentiated VAT based on environmental performance of products</td>
</tr>
<tr>
<td>• Eco-innovation funds</td>
</tr>
<tr>
<td>• Charges on environmentally damaging materials and products</td>
</tr>
<tr>
<td>• Corporate tax reduction for sustainable enterprises</td>
</tr>
<tr>
<td>• Preferential tax status for sustainable start-ups and business models</td>
</tr>
<tr>
<td><strong>INFORMATION-BASED INSTRUMENTS</strong></td>
</tr>
<tr>
<td>• Develop and implement sustainable product labels and procedures in line with international requirements, e.g. eco-labels</td>
</tr>
<tr>
<td>• Introduce international labels in the country, e.g. European eco-label, energy label, organic label, Fair Trade label</td>
</tr>
<tr>
<td>• Development of guidelines and tools on sustainable product design</td>
</tr>
<tr>
<td>• Education and training of business representatives on sustainable product design</td>
</tr>
<tr>
<td><strong>VOLUNTARY AGREEMENTS</strong></td>
</tr>
<tr>
<td>• Voluntary and progressive product performance standards</td>
</tr>
<tr>
<td>• Public/private partnerships, networks, seminars, etc. on eco-innovation</td>
</tr>
<tr>
<td>• Product-oriented environmental awards</td>
</tr>
<tr>
<td>• Voluntary certification systems (e.g. FSC certified wood)</td>
</tr>
</tbody>
</table>
2.3.3 INCREASING DEMAND FOR SUSTAINABLE PRODUCTS AND MATERIALS

This objective is common to many SWITCH-Asia projects that are both sustainable production and sustainable consumption oriented. It is particularly relevant for those that focus on a particular sustainable material or product group. SCP policy instruments addressing this objective seek to make sustainable products and materials more attractive either by creating an incentive for that product/material, by raising awareness of the benefits of the product, inhibiting the use of less sustainable alternatives or by other means.

Examples of projects that could have this as a main objective include “Jute: an eco-friendly alternative for a sustainable future in Bangladesh and India”, “Green Products Development and Labeling in Mongolia”, “Encouraging and Implementing Sustainable Production and Consumption of Eco-Friendly Batik in Indonesia and Malaysia”, “Sustainable and Responsible Trade Promoted to Wood Processing SMEs through Forest and Trade Networks in China, India and Vietnam”, “Sustainable Revival of Livelihoods in Post-disaster Sichuan: Enhancing Ecofriendly Pro-poor Bamboo Production Supply Chains to Support the Reconstruction Effort” and “Higher Efficiency Power and Distribution Transformers Promotion”. Driving up the demand for sustainable products provides demand conditions that normal market mechanisms will seek to fulfil.
The following policy instruments can be used to achieve this objective. They can be applied individually or in concert. None of these instruments are context independent; it is essential that projects themselves identify which of the instruments listed below are most likely to have the greatest effect within the context of that project. Policy instruments that can be used to further this objective include:

**TABLE 4: EXAMPLES OF POLICIES AND POLICY INSTRUMENTS TO INCREASE DEMAND FOR SUSTAINABLE PRODUCTS AND MATERIALS**

| Strategies and Action Plans | • SCP Action Plans  
|                           | • Integrated Product Policy  
|                           | • Sustainable Development Strategies  
|                           | • Green/Sustainable Public Procurement Strategies  
|                           | • Consumer Policy  
| Regulations Instruments | • Substance bans and phase out  
|                           | • Product bans  
|                           | • Extended producer responsibility schemes; e.g. take-back obligations  
|                           | • Green Public Procurement standards  
|                           | • Advertisement standards  
| Economic Instruments | • Tax on raw materials  
|                           | • Consumption taxes and charges (on emissions, e.g. CO2 or resources used by products e.g. water, fuel and energy)  
|                           | • Subsidies / co-financing systems for sustainable goods  
|                           | • Charges on unsustainable products  
|                           | • Differentiated VAT based on environmental performance of products  
| Information-based Instruments | • Eco-labeling, Energy labeling, Organic labeling, Fair Trade labeling  
|                           | • Sustainable consumption education  
|                           | • Sustainable consumption campaigns  
|                           | • Portals and guidelines for environmentally friendly purchasing for citizens  
|                           | • Guidelines for sustainable product design and sustainable professional procurement  
|                           | • Training, seminars and conferences for public and private purchasers on sustainable procurement  
| Voluntary Agreements | • Voluntary certification systems (e.g. FSC certified wood)  
|                           | • Environmental/stewardship awards  
|                           | • Knowledge centres on sustainable products, materials and production  

*Sustainable Consumption and Production Policies – A Policy Toolbox for practical use*
2.3.4  PROMOTE EXPORT AND INTERNATIONAL PENETRATION

Several SWITCH-Asia projects, including “Helping Vietnamese SMEs Adapt & Adopt CSR for Improved Linkages with Global Supply Chains in Sustainable Production”, “Establishing a Sustainable Production System for Rattan Products in Cambodia, Laos and Vietnam”, “Enhancing Environmental Performance in Key Sri Lankan Export Sectors” and “Re-Tie Bangladesh: Reduction of environmental threats and increase of exportability of Bangladeshi leather products” aim to increase and enhance the linkages between local businesses that producing sustainable products, and the global marketplace. This often goes hand in hand with the objective of promoting sustainable products and materials, but is distinct in that it addresses the needs and requirements of the international marketplace. Instruments that can be used to further this objective include:

### TABLE 5: EXAMPLES OF POLICIES AND POLICY INSTRUMENTS TO PROMOTE EXPORT AND INTERNATIONAL PENETRATION

| STRATEGIES AND ACTION PLANS | • SCP Action Plan  
<table>
<thead>
<tr>
<th></th>
<th>• Trade strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>REGULATORY INSTRUMENTS</td>
<td>• Implementation of international standards in national regulation (Emission standards, Product Performance Standards, CSR, EMS, etc.)</td>
</tr>
</tbody>
</table>
| ECONOMIC INSTRUMENTS       | • Differentiated tax on materials and products based on environmental performance  
|                            | • Subsidies for sustainable products  
|                            | • Differentiated export tax based on environmental performance |
| INFORMATION-BASED INSTRUMENTS | • Introduce and implement international labels in the country, e.g. European eco-label, energy label, organic label, Fair Trade label  
|                               | • International marketing  
|                               | • Training of company representatives on eco-design |
| VOLUNTARY AGREEMENTS       | • Promotion of and support to voluntary environmental certification systems (e.g. EMAS/ISO14001)  
|                            | • Sustainability reporting |
2.3.5 INCREASE RECYCLING OF WASTE
Recycling plays a vital role in closing the production/consumption loop and ensuring that valuable resources are not lost in disposal while simultaneously minimising the environmental impacts from waste management. Actions in this domain seek to make recycling the preferred waste disposal option. While the act of recycling takes place at the end of the product life-cycle, initiatives along the life-cycle can influence the effectiveness of the final recycling process. This objective is particularly important for the SWITCH-Asia project on “Establishing E-Waste Channels to Enhance Environment Friendly Recycling”, but is also relevant for projects aiming to improve or promote sustainable products and/or materials. Instruments that can be used to further this objective include:

**TABLE 6: EXAMPLES OF POLICIES AND POLICY INSTRUMENTS TO INCREASE RECYCLING OF WASTE**

| STRATEGIES AND ACTION PLANS | • National waste strategy  
| • Recycling Strategy  
| • SCP action plan  
| • Eco-design strategy |
| REGULATORY INSTRUMENTS | • Ban of untreated waste to landfill  
| • Ban on waste that can be otherwise be recovered/recycled  
| • Reuse obligations (for WEEE for example)  
| • Ban on certain substances in products (e.g. mercury)  
| • Extended producer responsibility (e.g. take back schemes)  
| • Recyclable material standards |
| ECONOMIC INSTRUMENTS | • Waste tax for landfilled waste  
| • Waste tax for incinerated waste  
| • Subsidies for recycling/reuse  
| • Deposit and return systems |
| INFORMATION-BASED INSTRUMENTS | • Guidelines and campaigns on waste separation  
| • Education on recycling of waste  
| • Eco-design guidelines |
| VOLUNTARY AGREEMENTS | • Voluntary take-back initiatives  
| • Voluntary design standards  
| • Networks, seminars, guidelines, etc. on waste management |
2.3.6 IMPROVEMENT OF MONITORING AND ENFORCEMENT OF REGULATIONS

Monitoring and enforcement of environmental regulations is essential to foster growth in the green sector and promote SCP. Many SWITCH-Asia projects, including “Encouraging and Implementing Sustainable Production and Consumption of Eco-Friendly Batik in Indonesia and Malaysia” for example, explicitly state the need for better enforcement of regulations as major success criteria. Properly enforcing regulations ensures a level playing for actors and businesses, helps create confidence in future markets for sustainable products and helps generate and propagate sustainable norms within businesses and wider society. None of the instruments we have described above can directly ensure their enforcement; rather, enforcement comes under the umbrella of capacity building within regulatory authorities. However, it is possible to make it easier for businesses to comply with regulations by:

- Simplifying regulations: making it easier for businesses to understand what they must comply with;
- Minimising administrative burdens: minimising the costs of meeting those regulations;
- Knowledge sharing and capacity building workshops and networks: to inform and educate businesses about alternatives to restricted materials, practices and products.

2.3.7 IMPROVING SUSTAINABLE INFRASTRUCTURE

The overall environmental performance of businesses and products can often depend heavily on the surrounding infrastructure. The development of sustainable infrastructure, like renewable energy facilities and better waste management facilities, influences the environmental impact of both businesses and consumers. While the development of sustainable infrastructure can itself be described as an instrument that can help achieve some of the objectives above, obstacles to such development can potentially be overcome by employing some of the following instruments. This objective is particularly relevant for the “Implementing Industrial Symbiosis And Environmental Management Systems in Tianjin Binhai New Area” and “Zero Carbon Resorts – Building Energy Autonomous Resorts Creating Appropriate Technology Solutions” SWITCH-Asia project. Instruments that can be used to further this objective include:

<table>
<thead>
<tr>
<th>TABLE 7: EXAMPLES OF POLICIES AND POLICY INSTRUMENTS TO PROMOTE SUSTAINABLE INFRASTRUCTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRATEGIES AND ACTION PLANS</td>
</tr>
<tr>
<td>• National renewable energy strategy</td>
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<tr>
<td>• National waste strategy</td>
</tr>
<tr>
<td>• SCP action plan</td>
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<tr>
<td>REGULATORY INSTRUMENTS</td>
</tr>
<tr>
<td>• Favourable planning process for sustainable infrastructure.</td>
</tr>
<tr>
<td>• Mandatory integration of renewable energy installations and</td>
</tr>
<tr>
<td>waste management facilities in local city planning</td>
</tr>
<tr>
<td>ECONOMIC INSTRUMENTS</td>
</tr>
<tr>
<td>• Feed-in tariffs for renewable energy installations</td>
</tr>
<tr>
<td>• Subsidy program for production of renewable energy</td>
</tr>
<tr>
<td>• Consumption taxes to generate funds (see case study)</td>
</tr>
</tbody>
</table>
2.3.8 INCREASING FLOW OF CAPITAL TOWARD SUSTAINABLE PRODUCTS AND MATERIALS WITHIN FINANCIAL MARKETS

Capital is vital to new ventures, including ventures focusing on eco-design of products and/or sustainable production processes. Governments can promote SCP and support launch of new sustainable businesses through establishing attractive environments for investment in sustainable businesses or specific business initiatives on to increase production of sustainable products or to aid innovation and sustainable product development. Such an environment could potentially contribute to replication of SWITCH-Asia project concepts, which in most cases involve SMEs working on sustainable product design and/or sustainable production. The following instruments seek to create incentives for investments in sustainable businesses.

<table>
<thead>
<tr>
<th>Table 8: Examples of Policies and Policy Instruments to Increase Recycling of Waste</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategies and Action Plans</strong></td>
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<tr>
<td></td>
</tr>
<tr>
<td><strong>Regulatory Instruments</strong></td>
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<tr>
<td></td>
</tr>
<tr>
<td><strong>Economic Instruments</strong></td>
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<tr>
<td></td>
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<tr>
<td><strong>Information-Based Instruments</strong></td>
</tr>
<tr>
<td><strong>Voluntary Agreements</strong></td>
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</table>
CASE STUDY 1: ECO-LABELING

Europe: Nordic Swan

Asia: Thai Green label

**TYPE:** Information-based instrument

**USE IN FRAMEWORK:** Primarily employed in the production-market-consumption life-cycle phases, but can impact throughout the production consumption life-cycle, including extraction and end-of-life by changing consumer habits.

eco-labeling is a type of information-based instrument that allows both public and private consumers to favour products that conform to a set of predefined environmental criteria. As such, producers can use the environmental credentials of their operations or individual products as a competitive advantage, which in turn provides an incentive to produce green products. Eco-labels are usually applied to individual finished products, but can also be used for services, installations or even entire companies. There is a multitude of national, regional and international standards for eco-labeling covering different types of products and services. The International Standards Organisation ISO 14020 family of standards covers environmental labeling, and describes three discreet types of environmental labels:

- **TYPE I** – a multi-attribute label developed by a third party: These tend to be award labels that show that a product conforms to a predefined environmental standard. Examples of such are the two case studies presented here.
- **TYPE II** – a single-attribute label developed by the producer: These are producer’s own claims that, although independently verified, are not part of a larger labeling scheme. An example of such is where businesses claim that their product packaging, or even the product itself, is made from X% recycled material.
- **TYPE III** – an eco-label whose awarding is based on a full life-cycle assessment: These tend to provide quantitative information about the product to allow comparison between labeled products. An example of such are the quantitative climate labels currently under development in several countries including the UK and France (ISO 14020).
The majority of environmental labels are of the Type I or Type II variety, the former benefiting from wider recognition while the latter favoured by larger businesses to promote specific environmental attributes of a product. Efforts are being made to develop Type III labels to communicate the climate change impacts of products.

**STRENGTHS:**
- Provide environmental control and reward environmental leadership and raise environmental awareness without resorting to regulation;
- Demand driven, democratic method of environmental control (success is dependent on the willingness of consumers to value the environment).

**WEAKNESSES:**
- Success is dependent on a willing and knowledgeable market for environmental products, and in many cases one that will pay a premium for those products;
- Net impacts of the entire product group can remain relatively stable;
- Eco-labeled products rarely move beyond the niche phase to become market leaders;
- Difficult to make environmental improvements beyond those specified by the label – thus do not always reflect wider environmental concerns.

**INSTITUTIONAL PRE-CONDITIONS:**
- Open and transparent criteria, methodology and certification procedure, co-authored by businesses, that can be independently verified;
- Broad-based support from businesses and accessible entry;
- Support from public information and marketing campaigns;
- A consumer class sufficiently knowledgeable and wealthy (for products, where the environmental alternative is most expensive) to favour such products;
- Green purchasing initiatives can be useful in strengthening eco-labeling initiatives.

**EUROPE : THE NORDIC SWAN**

**CONTEXT, MOTIVATIONS AND BACKGROUND**

The Nordic Swan Ecolabel is the official eco-label of the Nordic countries and was established in 1989 by the Nordic Council of Ministers. The Nordic Ecolabel’s mission is to contribute to reducing the consumer burden on the environment. By using eco-labeling, it aims to guide consumers and purchasers in their desire to shop with a “green” conscience, and thus contribute to a better society while, at the same time, it also aims to encourage manufacturers to develop environmentally-friendly products and services.

**MEANS OF IMPLEMENTATION**

The Nordic Ecolabel is a voluntary scheme for businesses. It is an ISO Type 1 Ecolabeling system and the organisation is a third-party control body. The label evaluates a (non-food) product’s impact on the environment throughout the whole life-cycle. The scheme spans Denmark, Norway, Sweden, Finland and Iceland, and is managed by a board with representatives from each country. In addition, each Nordic country has local offices with the responsibility for criteria development, control visits, licensing and marketing. In Denmark the Nordic Ecolabel is administered by Ecolabeling Denmark at Danish Standards Foundation, in Sweden by Ecolabeling Sweden AB, in Finland by Finnish Standards, in Norway by the Foundation for Ecolabeling, and in Iceland by the Environment Agency that operates under the direction of the Ministry for the Environment.
Criteria have been developed in 70 product groups. Companies who have products within these groups and who meet the criteria can apply for a Nordic Ecolabel license, which allows them to place the Nordic Swan label on the product packaging. These criteria are reviewed every 3-5 years to ensure that they are up to date with current technology and production practices.

The scheme is funded directly by the producers of labeled products. The initial application costs are €2000 + hours worked (< €2000), while subsequent renewal of this registration, which must take place when the criteria are updated, costs €1000 + hours worked (< €1000). SMEs and companies based in developing countries receive a cumulative 25% discount. Once the label is in place, the license fee for use is set as a percentage of the sales value. Depending on type of business / product labeled and turnover, this percentage varies between 0.05% and 0.3% for labelled business.

The Swan Eco-label is promoted with a heavy internet presence. On the main website (below), producers and consumers can find clear and transparent information about the label, how it is managed and organised, as well as costs, and the product category criteria. This is important for fostering trust among consumers.

RESULTS
Around 90% of Danish consumers recognise the Nordic Swan Eco-label, while around 70% have a good understanding of its meaning. In all, around 5,000 products and services have been certified to use the label in the 70 non-food-ware product classes, from baking paper to windows. It’s high recognition and level of trust by consumers positions the Nordic Swan as one of the most successful Eco-labeling projects to date. This success is borne from both a trusted institutional framework for the development of eco-labels and a consumer demand for products that pose fewer environmental problems.

It is, however, difficult to attribute and quantify specific environmental benefits from eco-labeling, as any eventual benefit – from the avoidance of pesticide use during production to energy savings during use – are subject to multiple qualifiers, including real changes in consumer behaviour and the effects of other initiatives that also seek to change consumer behaviour.

FURTHER DEVELOPMENTS
The process of developing and refining product criteria is ongoing. The Nordic Swan Ecolabel website is the main portal for information on upcoming and ongoing criteria consultations. In particular, it is possible to submit requests for criteria development if a product is not covered by existing criteria (http://www.nordic-ecolabel.org/Criteria/SuggestNewProductGroups.aspx).

REFERENCES
Nordic Swan Ecolabel
www.ecolabel.nu

Danish Implementation of Nordic Swan Ecolabel
Miljømærkning Danmark
Kollegivej 6
2920 Charlottenlund
T: +45 72 30 04 50
Email: info@ecolabel.dk
www.ecolabel.dk

ASIA : THAI GREEN LABEL

CONTEXT, MOTIVATIONS AND BACKGROUND.
The Thai Green Label Scheme is a Type-1 eco-labeling scheme initiated by the Thailand Business Council for Sustainable Development (TBC-SD) in October 1993 and formally launched in August 1994 by the Thailand Environment Institute (TEI), a non-profit, non-governmental organisation, in association with the Ministry of Industry. The main objectives of the label are to provide consumers with information that can
help guide their buying decisions, creating an incentive for manufacturers to develop and supply more environmentally sound products and thus reducing the environmental burden of products through their life-cycle.

MEANS OF IMPLEMENTATION

TEI and the Thai Industrial Standards Institute (TISI) share secretariat duties, while the Thai Green Label Board comprises members from a wide range of relevant public and private institutions to ensure neutrality, objectivity and a balance of interests.

Like many other Eco-labeling initiatives, The Thai Green Label Scheme applies to products and services but does not cover foods, drinks, and pharmaceuticals. The process of developing criteria for different product groups under the Thai Green Label was based on four principles:
1. a life-cycle approach to assessment;
2. solving issues of high political priority;
3. the criteria should be attainable through reasonable production process modification and;
4. that appropriate test methods are available.

This pragmatic approach balances the need for change with the acknowledgement of practical limitations. A dedicated technical sub-committee, in which both TEI and TISI play a role, develops the product criteria and test methods. Each product group has its own technical sub-committee, with members drawn from institutes, industry and environmental groups. The developed criteria are revisited and revised every two years to ensure that they remain relevant.

The Thai Green Label currently has bilateral mutual recognition agreements (MRA) with Eco-labeling programs in six countries: Taiwan, Japan, Korea, New Zealand, Australia and China, which broadens its regional impact.

Applicants to the Thai Green Label scheme pay a 1000 baht (€24) application fee, plus a 5000 baht (€122) licence fee, valid for two years. The Thai Green Label website provides a transparent account of the management structure, costs, and criteria that products must fulfil to qualify.

RESULTS

Criteria have been developed for 42 separate non-food product categories and, as of 2008, over 160 products and 32 companies had been certified. Considering the length of time this scheme has been in operation, and compared to the Nordic Swan example above, it must be acknowledged that the Thai Green Label has been, at best, only partially successful.

While the Thai Green Label scheme seems to have all the necessary institutional aspects in place, it still has only a minimal influence on Thai businesses, in that there is little incentive to produce products that will qualify with the eco-label when consumers are unmoved. This highlights the importance of consumer education and awareness to the success of labeling schemes.

Further developments. The process of developing and refining product criteria is ongoing. Resources for preparing a criteria proposal can be found on the Thai Green Label Website [http://www.tei.or.th/greenlabel/GL_Application.htm]. This proposal must then passed by the board and a technical sub-committee convened to process the criteria, which is then put to the board for final approval.

REFERENCES

More information can be found at www.tei.or.th/greenlabel
CASE STUDY 2:
GREEN PUBLIC PROCUREMENT

Europe:
UK Government Sustainable Procurement Action Plan

Asia:
Green Purchasing Law (Japan)

Green Public Procurement (GPP) is a regulatory instrument in which public institutions engage in a procurement strategy that favours goods and services that are, by a specific measure, classified as environmentally superior. Because government procurement accounts for a significant portion of all procurement (for example, in 2002 the EU’s public procurement market was worth €1.5 trillion, or 16% of EU GDP), GPP can provide a large, reliable market for environmentally superior goods and services, which in turn can stimulate the development and proliferation of environmentally superior products and services and reduce the costs of the same. GPP has also been found to bring long-term economic savings, particularly where products consume a large amount of resources over their lifetime (particularly energy consuming devices), and can furthermore contribute to changing norms (behaviour, habits and attitudes) by raising awareness and through the public bodies leading by example. Thus, GPP can be an important tool in fostering and maintaining environmentally friendly products and reducing the environmental impacts of production and consumption within a country, and can be deployed in coordination with, and offer support to, an eco-labeling initiative.

STRENGTHS:
- Substantial financial support for sustainable production;
- Minimal regulation required;
- Shows state commitment to environmental values;
- Spreads environmental values and experiences through state employees.

WEAKNESSES:
- Increases the administrative burden of state procurement, can increase the costs of state procurement;
- Can be counter to existing legal procurement framework.

INSTITUTIONAL PRECONDITIONS:
- Transparent public purchasing conventions;
- Legal procurement framework which allows procurers to favour products and services with reduced environmental impacts;
- Clear criteria for environmentally superior products (cooperation with labeling initiatives and standard setting authorities);
- Supply capacity to meet demand for environmentally superior products.
CONTEXT, MOTIVATION AND BACKGROUND

In 2006, the business-led Sustainable Procurement taskforce reported that the UK Government should use its considerable buying power to support progress toward the sustainable development goals that were described in the UK sustainable development strategy “Securing the Future”. The result was the 2007 Sustainable Procurement Action Plan (SPAP). The Sustainable Development strategy recognised the importance of GPP, firstly because the scale of the public sector spend on goods, services, works and utilities (around 13% of GDP in the UK in 2004) is capable of stimulating the market for more sustainable goods and services. Secondly, because government leadership can help shift the consumption patterns of business and consumers onto a more sustainable path.

Specifically, the SPAP aimed to place the UK among the European leaders in sustainable procurement by 2009, to achieve a low carbon and more resource efficient public sector.

Means of implementation

The SPAP aimed to achieve its objectives through a mixture of policies, performance frameworks and procurement practices, as well as working with the supply-chain to provide the innovative eco-technologies and solutions that will be needed. In light of this, the SPAP contains eight key action areas that together effect £60 billion of government expenditure. The impacts and effectiveness of these actions are under the scrutiny of the Sustainable Development Commission. The eight key action areas are:

1. A comprehensive Spending Review; revised public service agreements will reflect the principles of sustainable development.
2. Priorities and future plans; a sustainable procurement policy framework clarifies sustainable procurement policy priorities.
3. Strengthening leadership; key staff to have performance objectives and incentives linked to performance objectives for delivering efficiency savings.
4. Budgeting and accounting practice; departments will review budgeting arrangements and performance frameworks to ensure any barriers to choosing sustainable solutions are resolved.
5. Building Departmental capacity; ensuring the government procurement professionals have the necessary competencies to support sustainable procurement.
6. Raising standards; improving departmental compliance to agreed mandatory standards and implementing these in existing and new procurement contracts.
7. Market engagement and capturing innovation; Government departments will work together to strengthen their strategic engagement with key sectors to ensure key suppliers have plans in place to lower their carbon footprint and that of their supply-chains.
8. Scrutiny and reporting; strengthening the SD commission’s “watchdog” role.

A further £90 billion falls within local government, education and health service budgets. These government sectors must prepare reports on how they will support the aims of the SPAP.

RESULTS

The Sustainable Development Commission reported in 2010 that the government had made considerable progress in the areas of energy efficiency (up by 7.9%), water use (down 19.9%), recycling (up to 48.4%), waste (down 13.7%) and CO2 emissions reductions (down 10% for offices and 17% for vehicles) (3). In terms of the administrative measures called for in the SPAP, good progress has also been made, although some departments have been slower to act than others. The diagram above provides an overview of the progress made toward specific SPAP commitments: Permanent Under Secretary (PUS) objectives; Staff objectives; Sustainable Development Action Plans (SDAP); Quick Wins; Supplier...
Engagement; and the adoption of the Sustainable Procurement Task Force Flexible Framework (SPFF). It shows significant improvements have been made between 2006 and 2009.

**FURTHER DEVELOPMENTS**

The recent change in government in the UK has allowed a review of the progress and direction of the SPAP. Four Quick wins have been identified: First, to reduce central government CO2 emissions by 10% in the first 12 months in office; second, reduce waste across government departments by changing behaviour and improving management; third, joint, shared and centralised procurement, together with reuse of equipment to increase efficiency; fourth, to place sustainability at the core of staff appraisal and development processes. Further, the Sustainable Development Commission proposed three longer term goals: first, to work with the full supply chain; second, increased transparency of spending on water, waste and travel; develop a more full understanding of the influence of government actions, and coordinate these with policy initiatives (3).

**REFERENCES**

Sustainable Development Commission www.sd-commission.org.uk
55 Whitehall, London SW1A 2HH
0300 068 6305
enquiries@sd-commission.org.uk


**ASIA: GREEN PURCHASING LAW (JAPAN)**

**CONTEXT, MOTIVATION AND BACKGROUND**

The Law Concerning the Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities, also known as the “Green Purchasing Law”, was enacted on May 31, 2000 and generally implemented on April 1, 2001. The main operational objectives of the law are to promote Goods and Services that contribute to reducing environmental loads (i.e. Eco-Friendly goods and services) by promoting greener purchasing by public organizations and by providing information on eco-friendly goods and services toward the goal of establishing an environmentally friendly and sustainable society. More specifically, it aims to encourage suppliers (businesses/private firms) to develop products that contribute to reducing environmental impacts, which will promote environmental awareness among businesses on corporate activity and influence suppliers through market mechanisms from the demand side.

The ultimate aim is to establish a sustainable society with a lower environmental impact, and to contribute to a sound and culturally fulfilling lifestyle for current and future citizens.

**MEANS OF IMPLEMENTATION**

The first step in the process was the establishment of the basic policy for the procurement of
eco-friendly goods, which includes direction for promoting green procurement and specifying which products and services are subject to the GPP policy along with evaluation criteria. From this, each Ministry, independent administrative institutions and local government produce and publicise a procurement policy that incorporates the principles of the Green Purchasing Law, then reports on the progress made toward this goal. The policy calls for yearly disclosure of institutional GPP levels and achievements, and targets, both as a means to prompt business to fulfil the demand and to adjust policy and priorities as necessary. Targets are left to individual ministries, independent administrative institutions and local governments.

While there is a requirement for government institutions to enact GPP policies and targets to promote GPP, the local governments, cities, towns and villages are not currently obliged to do so. However, focus has recently shifted to local government, which has so far lagged behind National bodies in implementing the mechanisms in the Green Purchasing Law. This is an important governmental sector to address because it has a budget about three times larger than national Ministerial and Agency budgets.

It is important to note that the Green Purchasing law explicitly states that green purchasing should not lead to an increase in overall budget. In addition to GPP, the law also calls for the State to encourage businesses and citizens awareness of the need for these measures and for the need to increase demand for eco-friendly goods.

Japan already had a Type-I Eco-labeling scheme in place (1989) and a Green Purchasing Network (1996, which promotes the concept and practice of Green Purchasing in Japan, currently with 3,036 member organisations including businesses, local governments, consumer groups, environmental NGOs, and cooperative associations) in place prior to the introduction of the Green Purchasing Law. These initiatives provided practical help, but their presence also meant that the concepts of green procurement were already partially embedded in society.

RESULTS
Currently 246 items in 19 categories have been specified and had green public procurement criteria developed for them, which include specific criteria and factors for consideration. However, it is highlighted that institutions should strive to purchase goods and services contributing to the reduction of environmental impact to the greatest extent possible, taking into account a variety of environmental factors over the entire product life-cycle, and not merely purchase the goods meeting the evaluation criteria in accordance with the basic philosophy of green purchasing. This means that the implementation of GPP in Japan is flexible and strives to achieve the greatest possible environmental benefit.

A 2009 survey indicated that 85.5% of towns and 64.4% of villages said that they are systematically implementing the initiatives. It is estimated that the GPP initiatives saved approximately 89,500 tons of CO2 in 2006, and the initiative has, for example, helped drive the paper industry toward recycled copier and printer paper.

FURTHER DEVELOPMENTS
The mechanisms of the Green Purchasing Law from an iterative process, in that criteria are, in theory, updated annually, as should policy and targets based on achievements. While entities that should comply with the Green Purchasing Law are required to publish their procurement strategies, there is no central repository for these strategies.

REFERENCES
Ministry of the Environment Government of Japan, Godochosha No. 5, 1-2-2 Kasumigaseki, Chiyoda-ku, Tokyo 100-8975, Japan.
Tel: +81-(0)3-3581-3351
Email : gpl@env.go.jp


Basic Policy on Promoting Green Purchasing:


4 A full list of entities that are required to participate can be found at http://www.env.go.jp/en/laws/policy/green/3.pdf
CASE STUDY 3: VOLUNTARY AGREEMENTS

Europe:
CECED voluntary agreements on Energy efficiency (washing machines).

Asia:
Asia Pro-eco II – Voluntary approaches for Urban Environmental Management in China

**Type:** Voluntary agreement

**Use in Framework:** Primarily implemented among actors in the production life-cycle phase, although can also take place among actors in the extraction phase and has potential to take place among retailers in the market phase.

Voluntary Agreements (VAs) aim to encourage single companies, groups of companies or specific sectors to improve their environmental performance, often beyond existing regulatory standards. VAs allow industry and business to commit to environmentally beneficial actions and changes within a framework agreement and on a voluntary basis without the need to enact legislation. Furthermore, VAs are agreed between a number of businesses (or business associations) and a public administration body, either at local or national level. They can be employed to tackle problems associated with specific industry sectors or tackle broader impacts, such as energy efficiency, or to solve a specific environmental problem within a geographic area, like pollution of a specific water course.

VAs use and build upon the knowledge held within businesses to foster process and product innovation toward environmentally better solutions. While businesses agree to improve their environmental attributes, public administrations often facilitate this process by providing training of personnel, subsidies/redemptions or administrative and analytical help in forming action plans and strategies that can take individual businesses or sectors forward. This cooperative, participatory nature of the process means that VAs can be successful in bringing about change that would be difficult to achieve though using regulatory instruments, particularly where there is a weak regulatory infrastructure.
**STRENGTHS:**
- Cooperative and inclusive;
- Flexible implementation (allowing continual improvement);
- Incorporates industry knowledge and concerns;
- Supports industry in meeting targets;
- Pooling, rather than competing, expertise;
- Helps change industry concepts about the environment.

**WEAKNESSES:**
- Difficult to enforce targets;
- Potentially vulnerable to changing conditions and/or business priorities;
- Potential for freeloaded businesses to reap publicity benefits without making environmental improvements.

**INSTITUTIONAL PRECONDITIONS:**
- Business associations can play important role for wider agreements;
- Resources for incentives to increase participation.

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**EUROPE: CEDED’S VOLUNTARY AGREEMENTS ON ENERGY EFFICIENCY (WASHING MACHINES)**

**CONTEXT, MOTIVATION AND BACKGROUND**
The European Committee of Manufacturers of Domestic Equipment (CECED) represents European domestic equipment manufacturers. Within this role, it manages a number of voluntary agreements (VAs) for improving the energy efficiency of washing machines, dishwashers, refrigerators, freezers and dishwashers. The EU embraces these agreements as they have proved to deliver improvements – particularly in the case of energy efficiency – without the need for legislation. CECED represents 90% of the market in washing machine sales in Europe. Washing machines are responsible for a considerable fraction of domestic energy use in Europe.

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**DB WASHING MACHINES - EVOLUTION OF WASHING PERFORMANCE 1996 - 2003**

![Evolution of sales of labeled washing machines (energy class A to G; A most efficient) under the CEDED Commitments](image-url)
MEANS OF IMPLEMENTATION

The First Commitment was made in 1994 to reduce the average energy use/kg of washing by 20% by 2000, although this deadline was extended to December 2001. The second Commitment, covering the years 2002-2008 aimed to reduce the average energy use/kg of washing by 12.3% compared to 1999 levels.

The targets for achieving this were arrayed as hard, fleet and soft. The hard target was to halt the import and production of washing machines in the energy class “D” by the end of 2003 (energy classes are defined in relation to the European Energy Label, which has a scale of A-G). The fleet target was to achieve a production weighted average of 0.20 KWh/Kg of washing for the year 2008. The soft targets include: identifying and marketing high efficiency washing machines (0.17 KWh/kg); support rebate schemes to replace older machines; setting targets for and monitoring daring efficiency; provide information in product manuals about energy use; cooperate with detergent industry to develop and promote energy saving consumer behaviour; and develop a new standardised energy efficiency testing procedure that reflects current usage patterns.

The CECED voluntary agreements all use the energy classes defined under the European Energy Label for benchmarking and target setting. As this label is obligatory for all refrigerators, freezers and their combinations, washing machines, driers and their combinations, dishwashers, ovens, water heaters and hot-water storage appliances, lighting sources and air-conditioning appliances, the voluntary agreements do not require additional independent verification. The participants are responsible for ensuring that their machines meet the correct standard. Where participants in the agreement fail to meet targets or fail to remove products from the market that are in violation of the agreement, they are removed from the participant list and a press release produced publicising this fact. As such, the threat of bad publicity and disrupted industry relations is the primary means by which the CECED voluntary agreements are enforced.

RESULTS

See the graph above for a full indication of the change in the market for washing machines over the period 1996-2003. There has clearly been a significant move to more efficient machines over the period. The 20% energy reduction target in the first Commitment was exceeded. The average energy use/kg of washing dropped by 24% between 1994 and 2000. By 2002, over 60% of washing machines sold by CECED members belonged to energy class A, while by 2006, over 80% of all washing machine sales were in energy class A or above. It is difficult to assess tangible environmental improvements, as there is no data on the level of use of the new machines; and more efficient machines facilitate, and tend to lead to, a higher level of use. However, it can be said that the increased efficiency of the European stock of washing machines has led to water and energy savings over a similar level of use with older washing machines.

FURTHER DEVELOPMENTS

CECED have negotiated unilateral agreements in refrigerators and freezers, washing machines and wash-dryers, dishwashers and electrical storage water heaters. These commitments have been periodically updated to reflect the current state of the respective industry. The current agreement for refrigerators and freezers runs until the end of 2010, while the agreement on washing machines specified targets to be met in 2008. For information and notices about future commitment, please contact CECED at the address below.

REFERENCES

CECED
80, Boulevard Auguste Reyers
1030 Brussels
Belgium
Tel: +32-2-706.82.90
Fax: +32-2-706.82.89
E-mail: secretariat@ceced.eu
www.ceced.eu

Report on the penetration of Energy classes in the EU:
www.eceee.org/Energy_labeling/Report_energy_labeling
ASIA: ASIA PRO-ECO II - VOLUNTARY APPROACHES FOR URBAN ENVIRONMENTAL MANAGEMENT IN CHINA

CONTEXT, MOTIVATION AND BACKGROUND
As top-down policy in China has so far failed to tackle complex environmental problems at the local level, the Nanjing Environmental Bureau began to seek tried and tested alternatives. The Voluntary Agreements were initially designed to drive environmental improvement well above and beyond business as usual. However, the publication of the 11th 5-year plan for the period 2006-2010 set very ambitious targets (nation-wide reduction of energy intensity by 20%, and absolute pollution by 10%), which the VA’s were used to help achieve.

MEANS OF IMPLEMENTATION
The VA’s under the Asia Pro-eco II project focused on energy intensive companies in Nanjing, Xi’an and Kelamayi, covering steel, power generation, cement, refinery, brewing, car manufacture and petro-chemical sectors, and involved the Environmental Protection Bureaus (EPBs) of these three cities and two environmental institutes. The consortium (including the European partners) negotiated the VA’s between the three EPB and the participating companies. The initial 14 companies were large scale producers, but it is intended to expand the scheme to cover a larger number of SMEs.

The voluntary agreements implemented in this instance were based on Dutch Long Term Agreements (LTAs) and were particularly cooperative in nature. The local EPBs provided a range of supporting roles, including technical and process management training, helped businesses...
identify where efficiencies could be increased, simplifying permitting procedures and reduced emissions fees. In addition, local EPBs provided participating businesses with preferential access to local Environmental funds (which are financed by pollution fees) that can help subsidise management or technology improvements.

A great deal of emphasis was placed on process management as a means to increase efficiency. Each participating company instigated an Energy Saving and Emissions Reduction Action Team, which, together with third party experts, conducted Energy Potential and Pollution Reduction Scans on the businesses operations to identify potential savings and means of achieving them, both technical and managerial. Together with feasibility studies and cost benefit analysis, the SCAN process provided the basis for target setting, and a comprehensive and tailored action plan to achieve them (see picture).

RESULTS
The companies participating in Nanjing have mostly met their specified targets, and have both reduced pollutant emissions and increased energy efficiency, the latter by an average of around 5% (a saving of 17.8PJ in 2008, approximately 5000GWh), which will lead to long term savings on energy expenditure. Furthermore, the VAs have also been useful in fostering longer term change and increasing knowledge of environmental practices within the businesses involved.

FURTHER DEVELOPMENTS
Nanjing Environmental Protection Bureau is planning to extend the scope from the current big companies to SMEs. At the national level, the Ministry of Environmental Protection is investigating the potential for transferring experiences from the initial pilot programme to other Chinese cities. In addition, the National Development and Reform Commission may include voluntary approaches in China’s 12th National Five-Year Plan (2011-2015) as a means to help achieve energy saving and emission targets.

REFERENCES
Case study of Asia Pro-Eco II project
www.switch-asia.eu/fileadmin/content/images/News/CaseStudy_VoluntaryAgreements_final.pdf
Project website
www.va-china.com/index.htm
CASE STUDY 4: ENVIRONMENTAL-TAXES

**Europe:**
Danish Car Registration Tax

**Asia:**
Thailand Energy Conservation Tax

**TYPE:** Economic Instruments

**USE IN FRAMEWORK:** are used in **all key life-cycle stages** of the production and consumption life-cycle and include taxes, fees and charges, subsidies, tradeable permits and deposit-refund systems among others. Can be used to both drive behaviour change and generate revenue.

Environmental taxes – or eco-taxes as they are often referred to – are a means to provide incentives for consumers and companies to change behaviour in the direction of reduced environmental impacts. Environmental taxes help to realise simultaneously environmental, economic and social policy objectives by taking account of the hidden costs of production and consumption to people’s health and the environment, in a cost-effective way (EEA, 2006).

Environmental taxes can be applied to a wide range of goods and services and can be applied anywhere along the life-cycle of production and consumption, from raw materials to end-of-life management. Ultimately, the extra cost will get passed on to consumers, who can choose to limit spending on the product/service. Environmental taxes are often considered a cost-effective means of achieving environmental goals. However, the ability of environmental taxes to change behaviour is often dependent on a host of surrounding conditions, including the availability of alternatives (for example, in modes of transport, fuels, raw material inputs, disposal options) and, in final consumption, what part the taxed activity or product plays in cultural life.

The revenue generated by environmental taxes is sometimes used to either subsidise eco-efficient alternatives, or to finance other environmentally beneficial initiatives. Beyond the use of targeted green taxes, there is a growing discourse around the reorientation of tax, away from labour and toward material consumption.

**STRENGTHS:**
- Effects are directly related to quantity of consumption so transparent for consumers and producers;
- Can help new environmental technologies, products and services become relatively affordable and simultaneously can make damaging technologies, products and services prohibitively expensive;
- Can promote long-term resource efficiency;
- Can be integrated into existing tax codes and partially replace existing distorting taxes;
- Can help achieve environmental goals at lower costs than regulation;
WEAKNESSES:
- When applied to essential services, green taxes seldom change behaviour but become a revenue stream;
- Puts price on damaging behaviour, but does not itself limit it; can be socially divisive (more affluent can afford to pollute);
- Can lead to evasive action (for example, relocation of polluting activities);
- Can increase illicit behaviour and corruption;
- Can work against existing subsidies; Increased eco-taxes can reduce tax revenue base if behaviour is changed.

INSTITUTIONAL PRECONDITIONS:
- Robust and enforceable taxation infrastructure;
- Enforced property rights;
- Low levels of corruption;
- Reporting systems in place;
- Government capacity to support the above;
- For behaviour change to take place, alternatives to the undesired activity should be promoted.

EUROPE: DENMARK’S CAR TAX

CONTEXT, MOTIVATION AND BACKGROUND
Denmark’s environmental policies are informed by the Polluter Pays Principle and, as such, the use of environmental taxes is common. In 2007 environmental taxes accounted for about 12% of the total Danish tax revenue – or more than 5% of GDP giving it the highest relative green tax revenue in the OECD. Environmental taxes are seen, along with other market based policy instruments, as a dynamic and cost efficient supplement to environmental regulation. Denmark has, for a long time, had a significant tax levy on car registration (the tax payable on the registration of a new car) to limit the purchasing of motor vehicles. However, greenhouse gas emissions from Danish cars are continuing to rise and it was thus decided to introduce a differentiated tax based on the fuel efficiency of the vehicle to limit the purchase of fuel inefficient vehicles and promote the sales of more eco-efficient ones – a so-called “feebate” system.

MEANS OF IMPLEMENTATION
The levy on motor vehicle registration is 105% of the dutiable price (which includes value added tax @ 25%) under 79,000DKK (Euro 10,500), and 180% of the dutiable price over 79,000DKK. The levy, however, is differentiated based on the vehicle’s fuel efficiency. The levy is increased by 1,000DKK/km/litre (Euro 130/km/litre) for gasoline based vehicles driving less than 16km/litre of fuel and for diesel based vehicles driving less than 18km per litre of fuel. The levy is reduced by 4,000DKK/km/litre (Euro 530/km/litre) for gasoline based vehicles driving more than 16km per litre of fuel and for diesel based vehicles driving more than 18km per litre of fuel. This differentiated tax provides significant incentive to purchase cars that are fuel efficient. The Registration tax is only paid once on a car in its lifetime in Denmark. This means that second hand sales incorporate the cost of the tax.

Primary consequence of Danish Car Tax: Car ownership per 1000 people in the EU-27 in 2008 (source: European Car Manufacturers Association)

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6 Feebate systems promote one option over another by simultaneously imposing extra changes on the undesired activity and delivering rebates to the desired activity, in this case, making less efficient cars more expensive and more efficient cars cheaper.
In addition to this levy, a new annual consumer duty – the so-called “green ownership duty”, which is also differentiated based on fuel efficiency, has been introduced. As an example the consumer levy is DKK 760/year (Euro 100/year) for cars driving 18km/l, but DKK 2500/year (Euro 330/year) for cars driving 11km/l).

**RESULTS**

In 2007 environmental taxes accounted for about 12% of the total Danish tax revenue. The car tax itself has significantly limited the purchase of cars in Denmark and the differentiated tax has reduced the purchasing of larger, less full efficient cars.

In 2008 the EU average was 470 cars/1000 inhabitants, while Denmark had only 381 cars/1000 inhabitants – the lowest of the old EU15 countries, and only Bulgaria, Hungary, Slovakia and Romania having fewer (see diagram above). A smaller percentage of passenger km’s in Denmark are taken by car than the EU average (79% to 83%), and the average Dane travelled 9,950 km in 2006 in cars as opposed to the EU-15 average of 10,450 km (Eurostat, 2009: Panorama p. 103). The car tax has, however, resulted in Denmark having an older fleet of cars compared to other European countries, which suffer from lower fuel efficiency.

GHG emissions from Danish road transport, however, have increased from 11.1MtCO2 in 1997 to 13.3MtCO2 in 2007 (Eurostat – includes all emissions from road use, not just personal cars). This is a higher growth rate than experienced in both the EU-27 and comparable EU-15 countries over the same period.

**FURTHER DEVELOPMENTS**

The green car tax is regularly revised to reflect policy targets. Further developments, when they occur, can be found on the Danish tax office home page (see below).

**REFERENCES**

Danish Automobile Tax homepage
www.skm.dk/tal_statistik/skatter_og_afgifter/altombilen.html

Denmarks Statistics
www.dst.dk

**EUROSTAT**


European Environment Agency
www.eea.europa.eu/

www.eea.europa.eu/publications/eea_report_2006_1

European Manufacturers Automobile Association

**ASIA : THAILAND’S ENERGY CONSERVATION FUEL TAX**

**CONTEXT, MOTIVATION AND BACKGROUND**

The Energy Conservation Promotion Act came into effect in 1992 and aimed to increase energy efficiency across a broad range of energy using sectors: factories, buildings, machinery and equipment, as well as materials use that could contribute to better energy efficiency. A range of government support was offered to businesses to facilitate better energy management, all financed by the associated Energy Conservation Promotion Fund (ENCON fund). The fund was to
be financed by money collected by a tax on the consumption of energy – in this way energy consumption would itself fund the projects to improve efficiency.

MEANS OF IMPLEMENTATION
The Energy Conservation Promotion Act and associated fund is financed in part by tax levied on both imported and domestically produced or refined fuel, including gasoline, bioethanol, diesel and biodiesel. The level of this tax is decided by the National Energy Policy Council, under the guidance of the Fund Committee, the body charged with managing the ENCON fund. The fund was initially instituted in 1992 with 15 billion baht (300 million US$) from the Oil Fund (also financed by a tax on liquid fossil fuels), but all future working capital comes primarily from the Energy Conservation Fuel Tax.

The tax is applied to the refinery price, before wholesale. Initially set at 0.04 baht/litre, the contribution to the ENCON fund has fluctuated over time to a minimum of 0.01 baht/litre during the Asian economic crisis in 1997, and to a maximum of 0.75 Baht/litre in 2008. It is currently set at 0.25 Baht/litre, a very small fraction of the final retail price of between 35 and 40 Baht/ litre. As such, it clearly does not itself aim to change fuel consumption; it is purely an earmarked revenue stream for the ENCON fund.

As described above, the fund is originally and principally designed to provide financial support to factories and buildings to develop and implement energy conservation programs. The ENCON Fund can also be used to support agencies that wish to undertake energy conservation programmes, including activities on renewable energy projects, energy-related research and development, human resource development and training, and public awareness campaigns.

RESULTS
The Tax provides the Fund with around 100 million USD/year, which enables a wide range of energy saving initiatives to be executed. The initiatives include undertaking energy audits and creating comprehensive energy reduction plans and strategies; expertise that would otherwise be unavailable to Thai businesses, particularly SMEs. These initiatives in turn save businesses – as well as participating government agencies – energy and subsequently financial costs. The broad range of activities that the fund supports makes precisely quantifying the environmental benefits difficult. However, the implementation plan for the period 2000-2004 estimates that programmes initiated will together save 484 million litres of crude oil/year, and 7 billion kWh/year of energy generation, with associated avoided emissions.

FURTHER DEVELOPMENTS
The level of the Energy Conservation fuel Tax is periodically revised. The current level can be found on the Thai Fuel Price Structure internet site (below). Further information can be found on the Energy Policy and Planning office home page, which is where you will also find notification of changes to the tax and information on the projects it supports.

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Energy Conservation home page
www.eppo.go.th/encon/index.html

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