Frieder Rubik, Gerd Scholl, Katja Biedenkopf, Harri Kalimo, Franziska Mohaupt, Ólöf Söebech, Eivind Stø, Pål Strandbakken, Bruno Turnheim

Innovative Approaches in European Sustainable Consumption Policies

Assessing the potential of various instruments for sustainable consumption practises and greening of the market (ASCEE)

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SIFO Statens institutt for forbruksforskning National Institute for Consumer Research

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Abstract

The report summarises the outcomes of the project “Assessing the potential of various instruments for sustainable consumption practices and greening of the market” (ASCEE). The scope of the ASCEE project was to consider the latest trends in policies supporting sustainable consumption and production (SCP), and to indicate key elements of policies supporting sustainable consumption. Our main research emphasis dealt with innovative instruments, approaches and practices to support sustainable consumption. The aim of ASCEE was to contribute to policy development

– to indicate promising innovative approaches and tools to foster sustainable consumption and
– to present some strategic recommendations on how to progress in this arena.

The structure of the report is as follows: the report describes the challenge of sustainable consumption in Chapter 1 and presents a short overview on selected European activities. The following Chapter 2 “Innovative approaches” reports on the three themes we distinguished, and presents our findings for the examined cases, supplemented by some additional empirical findings on innovative instruments worth reporting, but not in the same level of detail as the nine cases. Our central findings are presented in chapter 3 “Empirical Insights” which highlights our findings and key messages. Chapter 4 “Assessment of instruments” is dedicated to the topic of assessment of political instruments which forms an integral part of making sustainable consumption policy. It is followed by Chapter 5 “Policy Recommendations” which introduces our key recommendations addressed to policy-makers, public authorities and stakeholders. Finally, chapter 6 “Outlook” completes the report and hints at areas linked to sustainable consumption, but not dealt with in this report, and to important R&D topics.

Financial support

This report describes the outcomes of the project “Assessing the potential of various instruments for sustainable consumption practices and greening of the market” (ASCEE). ASCEE was a research specific support action for policy in the programme “Scientific Support to Policies” of the European Union's 6th Framework Research Programme (Contract No. 044191) carried out February 2007-November 2008.

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List of Abbreviations

Abbreviations	English name
ANPED	Northern Alliance for Sustainability
ASCEE	Assessing the potential of various instruments for sustainable consumption practices and greening of the market
BEUC	European Consumers' Organisation
BMBF	German Ministry for education and research
BMU	German Ministry for environment
CIP	Continuous improvement process
COM	European Commission
CRAG	Carbon Rationing Action Group
CSO	Civil Society Organisation
Defra	UK Department for Environment, Food and Rural Affairs
DG	Directorate General
DG SANCO	Directorate General Health and Consumers
DIY	Do-it-yourself
DTQ	Domestic Tradable Quotas
e.g.	For example
EAP	Environment Action Programme
EC	European Commission
EEA	European Environment Agency
EEB	European Environmental Bureau
EEC	Energy Efficiency Commitment
EET	Energy Efficiency Title
ELCD	European Reference Life Cycle Data System
EMAS	Eco-Management and Audit Scheme
EPA	Environmental Protection Agency
EPD	Environmental Product Declaration
ERRT	European Retail Round Table
ETAP	European Environmental Technologies Action Plan
ETC/SCP	European Topic Centre on SCP
ETS	Emission Trading Scheme
EU	European Union
EuP	Energy using products
Eurosif	European Social Investment Forum
FIN	Dutch Ministry of Finance
FLO	Fairtrade Labelling Organizations International
GAP	Global Action Plan

Abbreviations	English name
GDP	Gross Domestic Product
GFS	Dutch Green Funds Scheme
GHG	Greenhouse gas
GPP	Green Public Procurement
GTZ	German Technical Cooperation
HPI	Happy planet index
ICT	Information and communication technologies
IES	Institute for European Studies – Free University of Brussels
IOCU	International Organization of Consumers Unions
IÖW	Institute for Ecological Economy Research
IPCC	Intergovernmental Panel on Climate Change
IPP	Integrated product policy
ISO	International Organization for Standardization
kg	Kilogramm
KRAV	Swedish certification institution of organic products
KULTU	Finnish Committee on Sustainable Consumption and Production
kWh	Kilowatt Hour
LCA	Life-Cycle Assessment
LED	Light Emitting Diode
LNV	Dutch Ministry of Agriculture, Nature & Food Quality
M²	Square meter
MTP	Market Transformation Programme
MWh	Megawatthour
NCC	UK National Consumer Council
NGO	Non-governmental organisation
NSW	New South Wales
NUTEK	Swedish National Board for Industrial Development
OECD	Organisation for Economic Co-operation and Development
OMC	Open Method of Coordination
OVAM	Flemish Public Waste Agency of Flanders
PCB	Polychlorinated biphenyl
POS	Point of sale
R&D	Research and development
R/G-Calculator	Red/Green-Calculator
RoHS	Restriction of Hazardous Substances Directive
RSA	Royal Society for the encouragement of Arts, Manufactures & Commerce
SAFE	Swiss Agency for efficient energy use
SC	Sustainable Consumption
SCP	Sustainable Consumption and Production

Abbreviations	English name
SDC	Sustainable Development Commission
SEK	Swedish Krona
SIFO	National Institute for Consumer Research
SIP	Sustainable industrial policy
SME	Small and medium enterprises
SRI	Socially responsible investments
STEM	Swedish Energy Agency
TIG	Topten International Group
Together	Campaign "*We're in this Together"*
TWh	Terrawatthour
UK	United Kingdom
UNCSD	UN Commission on Sustainable Development
UNDESA	United Nations Department of Economic and Social Affairs
UNEP	United Nations Environmental Programme
upk	Discount card for environmental products
V&W	Dutch Ministry of Transport, Public Works & Water Management
VBDO	Dutch counterpart to European Social Investment Forum
VROM	Dutch Ministry of the Environment
W	Watt
WSSD	World Summit on Sustainable Development

Preface

ASCEE's research team consisted of Katja Biedenkopf (IES), Prof. Harri Kalimo (IES), Franziska Mohaupt (IÖW), Dr. Frieder Rubik (IÖW), Gerd Scholl (IÖW), Ólöf Söebech (IES), Eivind Stø (SIFO), Dr. Pål Strandbakken (SIFO) and Bruno Turnheim (IES). The co-ordinator was Dr. Frieder Rubik (IÖW).

This report has been prepared within the 6th European Research Framework Programme as a Scientific Support to Policies (SSP). We are grateful for the financial support of the European Commission to this report. The opinions, conclusions and recommendations expressed in this paper are based on our research. They do not represent the opinions of the European Commission.

We would like to thank Wanda Gaj, from DG Research of the European Commission, for her support and active engagement in our study.

Four commentators contributed by their interventions and notes on our work. Thank you to Xavier Durieu (Secretary General Euro Commerce, Brussels), Dr. Eva Heiskanen (National Consumer Research Centre, Helsinki), Christian Löwe (German Federal Environment Agency, Dessau), and Melissa Shinn (Green Advocacy).

The research would not have been possible without the willingness of 79 interviewees to answer our "curious" questions, and of 50 participants to discuss preliminary results with us within a workshop carried out May 29 2008, in Brussels.

Finally, we are grateful to our "support" staff, namely, Patrik Eisenhauer (IÖW), Felix Hübner (IÖW), Maria Ittensohn (IÖW), Sebastian Strunz (IÖW). Special thanks also to Maureen Noonan, Sydney, for her excellent proof reading.

Berlin-Brussels-Heidelberg-Oslo December 2008

1 Introduction

1.1 The ASCEE Project

This **report** describes the outcomes of the project "Assessing the potential of various instruments for sustainable consumption practices and greening of the market" (ASCEE). ASCEE was a research specific support action for policy in the programme "Scientific Support to Policies" of the European Union's 6th Framework Research Programme. It began in February 2007 and was finalised by November 2008. The project team consisted of three institutes:

– Institute for Ecological Economy Research [IÖW], Berlin and Heidelberg/Germany (www.ioew.de) [coordination],
– Institute for European Studies – Free University of Brussels [IES-VUB], Brussels/Belgium (www.ies.be) and
– National Institute for Consumer Research [SIFO], Oslo/Norway (www.sifo.no).

The scope of the ASCEE project was to consider the latest trends in policies supporting sustainable consumption and production (SCP), and to indicate key elements of policies supporting sustainable consumption. Our main research emphasis dealt with *innovative* instruments, approaches and practices to support sustainable consumption. The aim of ASCEE was to contribute to policy development

– to indicate promising innovative approaches and tools to foster sustainable consumption and
– to present some strategic recommendations on how to progress in this arena.

Our focus on innovative tools and approaches was a core decision taken by the project. We did not focus on any specific consumption area such as food, housing or mobility, or any particular sector. We looked for experiences and practices dealing with these innovative approaches. We concentrated our research on the instrumental level and did not analyse and compare broader policy approaches on SCP or sustainable consumption, especially in the Member States[1].

The **ASCEE project** first identified policy instruments promoting sustainable consumption practices and a greening of the market in Europe. As mentioned, the focus was on *innovative* policies and instruments where the governments at the European, national or regional levels were actively involved (see Fig. 1.1 for the description of our approach). Due to budget constraints, we concentrated on "top-down" approaches, i.e. initiatives, approaches and tools under the control of public authorities, or which could be stimulated by them. As a consequence, "bottom up" approaches – i.e. activities of civil society, business and business associations – were not the primary focus of our research. However, some tools analysed encompassed some bottom-up elements.

The actions and measures that ASCEE identified were partly already implemented, partly still at the stage of policy proposals. Our broad approach to policy instruments covered different approaches:

– regulatory instruments such as product bans or minimum standards,

1 Reports analysing the Member State activities have been presented e.g. by Szlezak et al. (2007 and 2008) or see the Commission's webpage.

– economic instruments such as green taxes or subsidies,
– voluntary or mandatory information tools, such as eco labels or energy labelling,
– other voluntary instruments such as voluntary agreements, information campaigns or green awards, and
– co-operative approaches such as product panels.

Based on an interview guideline, 79 semi-structured (mostly telephone expert) interviews were

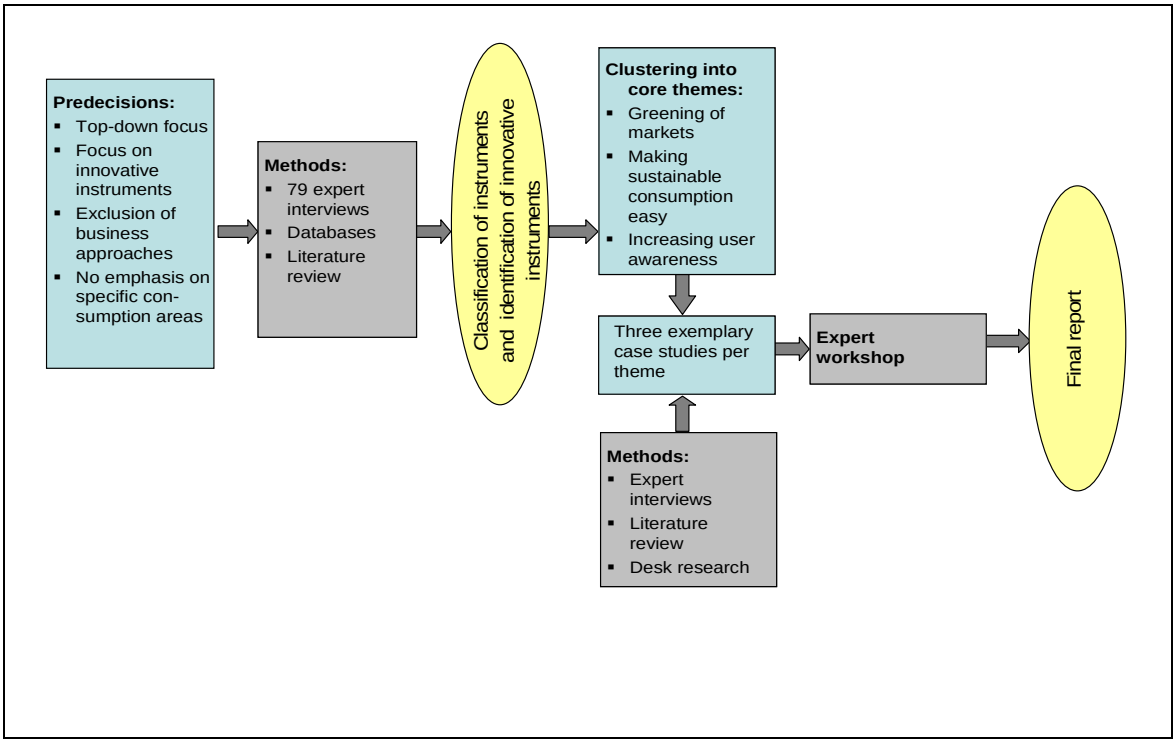


Fig. 1.1: Structure of the ASCEE project

conducted all over Europe in 2007. The aim of these interviews was to collect first insights on innovative instruments, and to prepare the selection of appropriate case-studies. The interviewees were, for the most part, from public administration, but also from non-governmental organisations, academia and business. They were selected on the basis of their involvement and expertise in sustainable consumption and greening of the markets.

Altogether, the 79 interviewees indicated about 340 instruments and tools as being interesting and innovative from their knowledge and belief. A lot of the instruments were mentioned several times. Their answers highlighted economic, voluntary information and voluntary instruments as innovative instruments but, according to their views (and experiences) voluntary agreements and compulsory information instruments seem not to be regarded as innovative approaches.

To supplement the interviews, more detailed follow-up research was conducted on the internet, on material provided by the interviewees, on academic literature and by using some databases, especially.

– **UNEP-databases:** UNEP and UNDESA have prepared two databases on SCP initiatives,[2] and on consumption and productions patterns.[3]

2 See http://webapps01.un.org/dsd/scp/public/presentIndex.do;jsessionid=D6985DBCAF08CC17B50606A502A2322B (accessed October 10, 2008).

- **ETAP:** The European Commission has elaborated an Environmental Technology Action Programme (ETAP) (European Commission 2004a). This encompassed 25 different actions at commencement. These have been aggregated to nine in the meantime.[4] Member States have been asked by the Commission to present own national road maps. Most Member States did so and these are available on the webpage of the Commission.[5]
- **SCP:** Besides the Commission (European Commission 2004b), several Member States have prepared own national and programmatic SCP-documents. A series of Member States have prepared short papers presenting an overview on their SCP-activities. These papers are addressed to the Commission and displayed on the Commission's webpage.
- **IPP-database:** DG Environment has prepared a database on Integrated Product Policy (IPP) activities of Member States.[6]

Based on the overview of policy instruments, we distinguished three themes to deal with the topic of SCP; namely, greening the market, making sustainable consumption easy and increasing user awareness. Within each of these three themes, we selected and analysed three exemplary cases based on secondary data (literature review, internet inquiries) and primary data (interviews with stakeholders):

- Danish product panels, technology procurement and the Dutch Green Funds Scheme are examples for the theme "Greening of the market",
- the Swiss and European TopTen activities, the UK campaign "We're in this Together" and the UK Red/Green Calculator illustrate the theme of "Making sustainable consumption easy", and
- with regard to "Increasing user awareness" the Danish campaign "One tonne less", a new generation of eco teams and organic labels are analysed.

Based on the three themes, we prepared a paper informing on outcomes and impressions of our research. This paper was discussed in a workshop in Brussels May 2008 together with 50 experts from research and academia, policy institutions, civil society organisations and business. Their comments and interventions contributed to this report and to the formulation of policy recommendations.
These complementary methodological approaches contributed to the preparation and delivery of the present report.

Structure of this report

The **structure of this report** is as follows: To begin with, we describe the challenge of sustainable consumption in this **Chapter 1** and present a short overview on selected European activities. The following **Chapter 2** *"Innovative approaches"* reports on the three themes we distinguished, and presents our findings for the examined cases, supplemented by some additional empirical findings on innovative instruments worth reporting, but not in the same level of detail as the nine cases. Our

3 See http://www.un.org/esa/sustdev/sdissues/consumption/spp_web_info.htm (accessed October 10, 2008).

4 ETAP intends to promote research and development, mobile funds, and to help to drive demand and improve market conditions.

5 See http://ec.europa.eu/environment/etap/roadmaps_en.htm (accessed October 10, 2008).

6 See http://ec.europa.eu/environment/ipp/activities_ms.htm (accessed October 8, 2008).

central findings are presented in **chapter 3** *"Empirical Insights"* which highlights our findings and key messages. **Chapter 4** *"Assessment of instruments"* is dedicated to the topic of assessment of political instruments which forms an integral part of making sustainable consumption policy. It is followed by **Chapter 5** *"Policy Recommendations"* which introduces our key recommendations addressed to policy-makers, public authorities and stakeholders. Finally, **chapter 6** *"Outlook"* completes this report and hints at areas linked to sustainable consumption, but not dealt with in this report, and to important R&D topics.

1.2 Sustainable Consumption and Production (SCP) – Emergence of a New Policy Domain

Environmental policies have had some success in reducing environmental burdens since their introduction in the 1960s. The early production-oriented policies aimed at improving the state of environmental compartments. These have later been supplemented by policies under the heading of Integrated Product Policy (IPP); intended to green products and services. Different approaches and programmes on IPP have been formulated and – partly – implemented. A set of instruments has been applied, and extensive overviews are presented e.g. by OECD (2008) and European Commission (2004). But, the outcomes of the various political efforts seem not to have changed environmental trends. The European Environmental Agency (EEA 2005: 14) concludes that "(…) the general trend is an increase in environmental pressures because consumption growth is outweighing gains made through improvements in technology. The reasons seem not to be a lack of activity, but a lack of integration and cohesion within public policy, and also a focus on the supply side of markets in the programmes".
Consumption-related issues, and nowadays, sustainable consumption is still a somewhat undersized spot of environmental policy, despite the fact that consumption contributes considerably to environmental pressures as the following facts suggest:

- Households consumed about 26% of final energy use in the EU in 2001 (EEA 2005: 33). Their share of total CO_2 emissions was estimated by EEA (2005: 8) to be about 10% (excluding personal travel and mobility) in the EU 15 in 2002.
- About ⅔ of municipal waste derives from households (EEA 2005: 33).
- The main areas contributing to about 70-80% of these pressures are food/drink, housing and private transport (see Tukker et al. 2006, also EEA 2005: 14).
- Household consumption expenditure in the EU-15 increased by almost one third per person between 1990 and 2002. At the same time, households are becoming smaller and are tending to use more energy and water; in addition to generating more waste per person (EEA 2005: 6).
- An average Finnish consumer needs 40,300 kg natural resources per year, of which 43% are used for transportation, 28% for housing and nearly 15% for foodstuffs (Lähteenoja et al. 2008).

As a consequence, the linkage between sustainability and consumption – "sustainable consumption" – has to gain more attention in the policy agenda.
The Oslo symposium which took place in 1994 proposed a working **definition of sustainable consumption** as: *"(…) the use of goods and services that respond to basic needs and bring a better qualify of life, while minimizing the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle, so as not to jeopardize the needs of future generations" (*Symposium: Sustainable Consumption. Oslo, Norway; 19-20 January 1994).

This is an update and specification of the Brundtland commission headlines in “Our Common Future” (World Commission 1987). Sustainable consumption focuses on the demand side of the economy, looking at how the goods and services required to meet basic needs and improve quality of life can be produced and disseminated in ways that reduce the environmental impact of consumption.

However, the environmental impact is just one dimension of the concept of sustainability. Two other frequently mentioned dimensions are the social and economic aspects of sustainable development. Economic growth and equitable social development belong to the concept. Some commentators also include democracy and political aspects as a fourth dimension (Cohen 2006); and, even cultural aspects as a fifth (Berg 2008).

One other clarification is the tension between weak and strong sustainability (Pearce et al. 1989). This refers to the substitutability between natural and manufactured capital. Under weak sustainability it is understood that manufactured capital of equal value can substitute for natural capital; whereas under strong sustainability, the stock of natural capital must be maintained and enhanced, and it cannot be substituted by manufactured capital.[7]

Sustainable Consumption and Production (SCP) has been on the international agenda since the early 1990s. It gained momentum, in particular with respect to implementation, at the World Summit of Sustainable Development (WSSD) in Johannesburg in 2002. All participating countries committed themselves to promoting SCP; with developed countries taking the lead.

The Johannesburg summit of 2002 made a commitment to promote the elaboration of a 10-year framework of programs on SCP, in support of national and regional initiatives (UNEP 2002). International activities began in 2003 at the First International Expert Meeting held in Marrakech. The intention of the so-called “Marrakech process” was to jointly develop the framework for SCP programs[8]. To realize this, consultations to identify priorities took place for each continent (2003-2005). An elaboration of strategies is now being developed, including regional consultations. At Stockholm and Costa Rica, international meetings took place to discuss the progress of the SCP. The process is supported by seven Task Forces dealing with seven specific topics[9] and by a Business and Industry Forum, an NGO Forum and by an Advisory Committee.

These international activities should result in a review of the state of progress in 2010. A draft 10-year framework of programs on sustainable consumption and production will be negotiated by countries at the session of the UN Commission on Sustainable Development (UNCSD) in 2011. In September 2008, UNDESA and UNEP released a first draft discussion paper dealing with SCP (UNDESA and UNEP 2008) for public consultation.

Against this background of international activities, we look for SCP at the level of the European Union.

7 See Pearce et al. (1989), Ayres et al. (1998) and Brekke (1997).

8 See the webpage http://www.un.org/esa/sustdev/marrakech/index.htm and http://esa.un.org/marrakechprocess/for more information (accessed August 29, 2008).

9 The seven topics are sustainable lifestyles, sustainable product policies, co-operation with Africa, sustainable procurement, sustainable tourism, sustainable buildings and construction, and education for sustainable consumption; see http://esa.un.org/marrakechprocess/taskforces.shtml (accessed August 29, 2008).

The origins of the SCP in the European Union

Efforts of the European Union with regard to SCP can be traced back to several paths[10] The Union's efforts to green products and services played an important role. European activities in the area of consumer policy, especially the activities of DG Health and Consumers (SANCO), have not yet been linked to any considerable degree to SCP[11]. The activities in the area of SCP have links to multiple Directorates General of the European Commission, in particular to those of Environment, Industry, Health and Consumers as well as Energy. As could be witnessed during the much delayed publication of the Commission's Action Plan on SCP (European Commission 2008a), this multiple ownership can create internal intrigues and therefore complicates Commission's policy formulation. On the other hand, the role of DG SANCO has been limited and could be expected to increase.

In the area of products and services, the European emphasis of the last 10-15 years has been on Integrated Product Policy (IPP)[12]. IPP could be considered as a precursor of SCP. On the political agenda, the Commission mentioned product policy for the first time in a progress report on the implementation of the 5th Environmental Action Plan (European Commission 1995a) of the European Union. The next impulse to conceptual development of product policy was given by the British consultants Ernst&Young and the University of Sussex (Ernst&Young and SPRU. 1999). IPP was given additional stimulus by the European German Presidency during the first half of 1999. At the European Council, which took place in Weimar in May 1999, the German initiative was welcomed and supported by all Ministers (BMU 1999). Thus, IPP became part of the political agenda. Two years later, in February 2001, DG Environment submitted a Green Paper on the subject of IPP (European Commission 2001a). The objective of IPP was to reduce adverse environmental effects caused by products throughout their entire life cycle; with particular attention being paid to the possible use of market forces as a steering mechanism. A prerequisite for implementing IPP, according to the European Commission, was the improved ecological orientation of the market; both on the supply side, and on the demand side. In June 2001, EU environment ministers gave their support to the Green Paper and recommended the Commission define an IPP concept, with special implementation measures designed and prioritized, so as to demonstrate the benefits of IPP (European Council 2001).

IPP has also found its way into the 6th environment action programme (EAP) of the Commission. This programme, due to last until 2010, takes up the subject of IPP at several instances. In its resolution on the EAP, the European Council agreed on ways of extracting and using natural resources, namely "that the EU's integrated product policy, designed to rationalise the consumption of resources and to minimise the adverse environmental effects of waste, should be implemented in conjunction with the national economies". The subject of IPP is also taken up in the EU strategy for sustainable development (European Commission 2001b, Council of the European Union 2006).

In June 2003, the European Commission published an official Communication on IPP (European Commission 2003a) in which its ideas, some new, some modified, on the subject of IPP were presented, and in which IPP was brought into the context of sustainable development. The measures

10 Beside IPP and SCP policy areas, broader European strategic programmes and frameworks might have also some relevance for eco-labelling. Examples are the Environmental Technologies Action Plan (ETAP), the different Thematic Strategies (especially the one on resources).

11 The Commission publishes Consumer Policy Strategies periodically. The last one covers the period 2007-2013 (European Commission 2007a). Its overall objectives are empowerment of consumers, enhancement of their welfare, and their protection. The topic of sustainable consumption was included under the action 5.4 "Better informed and educated consumers".

12 See Rubik (2006) for a comparative overview.

proposed by the Commission are based on five basic principles: life-cycle thinking, working with the market, stakeholder involvement, continuous improvement and a variety of policy instruments. Based on these five principles the European Commission proposed to establish "the framework conditions for the continuous environmental improvement of all products throughout the production, use and disposal phases of their life-cycle (European Commission 2003a: 8). To realise this, a series of measures were announced, e.g. promotion of environmental taxes and of incentives, drawing up the criteria for identifying environmentally negative subsidies, drawing up a discussion paper on promoting the implementation of the IPP concept in businesses, mobilisation of GPP, coordination and provision of an Internet platform for LCA data, drawing up guidelines for treating products within the framework of an eco-management and audit scheme (EMAS) and expansion of the range of applications for the EU eco-label and the EU energy label. Beside these activities, the Commission intended to determine products with the greatest potential for environment improvements.
These activities should have been carried out by 2007. Some have been realised; some failed. An overall assessment of the implementation of EU's Communication has not taken place.

Implementation of SCP Policies at the European Union Level
For years, the European SCP policy pursued a traditional instrumental approach and concentrated its efforts on elaborating and implementing several product-related instruments. Interesting tools are:

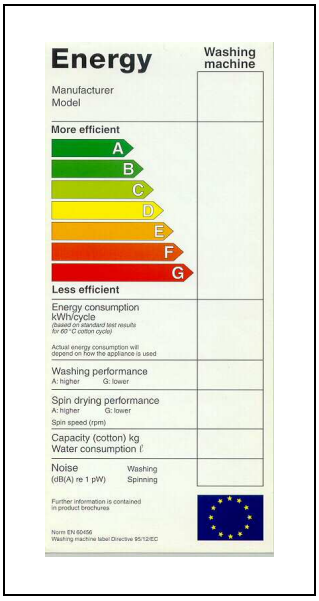
– **Green Public Procurement (GPP):** Public procurement is worth about 16% of EU-GDP and thus makes up a substantial share of all consumption in the European economy. A rise in demand for innovative and sustainable solutions could transform the market, and make green products more available, and more affordable, for citizens and the business sector. The EU-renewed sustainable development strategy stated that by 2010 the EU-average level of GPP should equal the performance of the "greenest" Member States at this date (Council of the EU 2006: 12). The European Commission called upon its Member States to develop national action plans for GPP, to establish objectives and benchmarks and to offer their purchasing administrations the necessary know-how. So far, 12 Member States have prepared national action plans, seven are preparing drafts, and two integrated GPP into the national sustainability strategies. Other Member States (e.g. Germany, Luxembourg) appear to have no intention to elaborate such documents, but instead concentrate on specific activities considered as being the most urgent.[13]

The European Commission published the handbook "Buying Green!" that provides a set of guidelines for public authorities and contracting parties. The handbook offers legal advice on how best to introduce environmental criteria into purchasing procedures.

– **Energy label:** Different household appliances have to be labelled according to a (general) EU Directive (92/75/EEC). Producers are obliged to indicate the energy consumption, consumption of specific resources, and other information (see example of energy-label for washing machines below). The most important energy label criterion is the consumption of energy. This must be specified in numeric terms and according to a ranking, which is subdivided into several groups (from "A" to "G").

13 See the overview http://ec.europa.eu/environment/gpp/pdf/national_gpp_strategies_en.pdf (accessed August 29, 2008).

This directive is a framework Directive, which has to be supplemented by specific directives for each product group under consideration. The EU has applied this Directive to nine specific product groups (e.g. washing machines, dish-washers, refrigerators). For some of the product groups, the criteria for subdivision were elaborated more than a decade ago. Therefore, they are no longer fully up-to-date. This aspect has been discussed within the Commission and the Member States, but no update of threshold values has been agreed. Instead, new energy classes A+ and A++ appeared for refrigerators and freezers in 2004, indicating very improved standards in contrast to the energy class A (European Commission 2003b).



– **Energy using products (EuP):** In 2005, the European Council and the European Parliament adopted a Commission proposal for a Directive on establishing a framework for setting eco-design requirements for energy using products (EuPs), except for means of transport for persons and goods (European Commission 2005a)[14]. The framework Directive defines conditions and criteria for setting requirements regarding environmentally relevant product characteristics. It is followed by implementing measures that will establish the eco-design requirements and contain legal obligations for manufacturers. The requirements cover generic (e.g., use of raw materials, information for users, disassembly and recycling) and specific requirements (e.g., limit value for electricity consumption in use and in standby modes). With respect to the implementing measures, which will be adopted by a comitology and stakeholder consultation process, the Directive gives priority to self-regulatory activities by industry which could be substituted, if needed, by regulatory measures which can be taken as well.

Preparatory studies for the selected 19 products groups[15] have been carried out or are still underway, formulating recommendations whether, and which, eco-design requirements should be set for a particular product group. The adoption of implementing measures for five product groups (street

14 See also http://ec.europa.eu/energy/demand/legislation/eco_design_en.htm (accessed August 29, 2008).

15 Product groups covered are, for instance, boilers and water heaters, PCs and computer monitors, residential room conditioning appliances, refrigerators and freezers, dish-washers and washing machines, and domestic lighting.

and office lighting products, stand-by and off-mode losses, external power supplies and simple set top boxes) is planned in 2008.[16]

– **Eco-label:** The European eco-labelling scheme was established in 1992 and is a voluntary environmental labelling scheme for consumer products, except for food, drinks or pharmaceuticals. Criteria for a product group are developed taking into account the life cycle. The scheme covers the whole European market intending to support business in its market dissemination of eco-efficient products and services.

Environmental criteria are being developed for a wide range of everyday products. Requirements are available for 26 product groups as of September 2008. The most important product categories are tourist accommodation services, textiles products, paints and varnishes, and cleaners. The majority of the companies applying come from Italy and France.

As a supplementary measure to the SCP Action Plan, the European Commission published a proposal for a revision of the Community eco-label scheme (European Commission 2008a).

– **Other measures:** Beside the afore-mentioned measures, Commission studies identify and assign priorities to products with the greatest potential for environmental improvement (Tukker et al. 2006). Afterwards, the improvement potentials of three key product areas (housing, passenger cars, meat products) were examined.[17] Another study looked at the opportunities and challenges of a quantitative environmental product declaration system; also called Environmental Product Declaration (EPD) (Bogeskär et al. 2002).[18] To demonstrate how IPP can work in practice, the Commission established two voluntary pilot projects (mobile phones and tropical wooden garden chairs).[19]

The focus on the elaboration, implementation and revision of several instruments addressed toward a greening of products and services has been accompanied by a more conceptual approach, which takes up the outcomes of the ongoing international Marrakech process. The announced IPP-related activities have been continued, but the attention was directed more towards the issue of sustainable consumption and production patterns (SCP). In this area, the Commission delivered an

16 See http://ec.europa.eu/energy/demand/legislation/doc/planning.pdf (accessed August 29, 2008).

17 See also http://ec.europa.eu/environment/ipp/identifying.htm (accessed August 29, 2008).

18 This report has been commented on by stakeholders. However, the Commission decided to postpone future initiatives and to look for the finalisation of the ISO-work on label type III of which the publication is foreseen for end of 2007.

19 See also: http://ec.europa.eu/environment/ipp/pilot.htm (accessed August 29, 2008).

inventory of its activities (European Commission 2004b) and decided to strengthen its efforts to prepare an action plan. The updated EU sustainable development strategy (Council of the EU 2006) introduced SCP as one of seven key challenges and committed the Commission to prepare an SCP action plan by 2007. Its publication was expected in 2007. However, during the summer 2007, the Commission decided to merge its plans on SCP with the one on sustainable industrial policy (SIP). As a consequence, the Commission launched a background document (European Commission 2007b). The background paper addressed some key areas of action, namely leveraging innovation, creating a strong EU market for sustainable products, increasing the efficiency of EU production, changing behaviour by smarter consumption, and exploiting first-mover advantages and levelling the playing field worldwide for sustainable technologies and products on a global level. For each area, some measures have been announced. The Commission started a stakeholder consultation process on both areas to know the opinions of the public and of stakeholders. This consultation took place in the summer of 2007, and received nearly 500 responses.[20] The overwhelming majority agreed that there is a need for action in the two domains of SIP and SCP. Of the five key areas proposed, smarter consumption was considered the most important challenge.

In summer 2008, the SCP Action Plan was finally published (European Commission 2008a). Its main target is to arrange a dynamic framework to improve "(…) the energy and environmental performance of products and foster their uptake by consumers" (European Commission 2008a: 2). The Action Plan consists of three parts: stimulating smarter consumption and environmentally better products, leaning production, and global market activities for sustainable products.

To support smarter consumption the following activities are intended:

– **Extension of EuP-Directive:** The EuP Directive (European Commission 2005a), that establishes a framework for setting eco-design requirements for all energy using products (e.g. computers, televisions, water heaters) should be extended to cover all energy-related products, except for transportation. As energy-related products, the Action Plans considers "(…) those products that have an impact on energy consumption during use (European Commission 2008d: 4).[21] Two complementary measures are announced, namely obligatory minimum requirements and voluntary advanced benchmarks.

– **Labelling of products:** The different labelling approaches of the Commission should be strengthened by an extension of the mandatory energy label to a wider range of products, including the ones belonging to an updated EuP-Directive, and by improving the performance of the voluntary European eco-label by further developing it as a "label of excellence".

– **Incentives:** The Commission intends to establish a more harmonised basis of incentives, but restricts this approach to green public procurement (GPP) and state aid. For GPP, a linkage to the energy labelling is envisaged by identifying a labelling category as a reference level below which public authorities are not allowed to procure products. The same level should be used for state aid of Members States; below which incentives are not allowed to be set. In addition, it is announced that the Commission will examine options for revising the European energy taxation and other European fiscal incentives.

20 See http://ec.europa.eu/environment/eussd/pdf/scp_sip.pdf (accessed August 29, 2008) for the highlights of the consultation round.

21 The Action Plan gives some examples such as window frames and water using devices.

- Other measures:
  - As a supplement to the measures described above, a consistent data base and reliable methods should be prepared to assess the environmental features of products, their market dissemination and to monitor the temporal development.
  - GPP should be supported by additional voluntary measures, namely guidelines, indicative targets and tender specifications for public procurers as well as voluntary common criteria for product categories not falling under the EuP Directive. Also, a monitoring of GPP is foreseen.
  - Work with retailers and consumers: The Commission intends to launch a retail forum to initiate a greening of retailers. Besides that, the Action Plans refers to the EU consumer policy strategy and its goal to empower consumers.

Leaning production as the second part is intended to extend, amplify and accelerate the part dealing with smarter consumption. As concrete actions the boosting of resource efficiency, supporting eco-innovation and enhancing the environmental potential of industry are intended. The Action Plan is not restricted to the European market, but also promotes international trade in environmentally friendly products and services, good practices internationally and sectoral approaches.

The character of the Action Plan is that of a communication of intended measures and activities. It will be implemented by specific actions, which must be arranged by directives and regulations. Therefore, in parallel with the Action Plan, the Commission has already published some proposals, namely for the revision of the European eco-label (European Commission 2008b), the revision of the EMAS scheme (European Commission 2008c), the extension of the EuP Directive (European Commission 2008d), and a communication on GPP (European Commission 2008e und 2008f). Future proposals on energy labelling and on regulation for an environmental technology verification scheme are foreseen for 2008 and 2009. The Commission also announced a review of the Action Plan for 2012. Some organisations have already commented on the Action Plan, see box for a couple of different statements.

Positions of Brussels based stakeholders on the Commission SCP Action Plan

BusinessEurope*, the confederation of European businesses, requests in its press statement that "impact assessments on the specific proposals for regulation be carried out to the highest standards". The Commission's plans "should not lead to an increase of bureaucracy and administrative burden".*

EuroCommerce*, a trade group representing the retail sector, and the* ***European Retail Round Table*** *(****ERRT****) have a positive attitude to the plan. The ERRT in particular has been closely involved in their design and is still "working with the Commission to develop a concerted, cohesive retail involvement in the actions," according to a press statement.*

Orgalime*, the European Engineering Industries Association, recognises the potential of the Action Plan, but also doubts its coverage: "If this policy is about moving towards a low carbon economy, then the action plan has to be about more than just labelling or an extension of the scope of the Eco Design (EuP) Directive," it said in a press statement of July 16, 2008. Orgalime sees the opportunities of the plans as long as they raise consumer awareness while creating the "required change in the market without creating collateral damage to the competitiveness of industry".*

UEAPME, *representing SMEs, is worried by the plan and fear competitive disadvantages that may result in some cases SMEs being priced out of the market by larger companies better able to finance a 'green' shift in their product lines.*

The ***European Consumers' Organisation (BEUC)*** *considered proposals as a "'Non-Action' plan", according to its press statement of July 16, 2008. "the concept of sustainability is greatly reduced to only energy efficiency, and instead of setting ambitious objectives, it proposes to revise, albeit taking the right direction, a range of legislation for which the revision had either already been planned, or was at least foreseeable".*

The ***European Environmental Bureau (EEB)*** *was even more sceptical. According to EEB, the Action Plan lacks vision, does not show paths to reduce Europe's footprint and simply reinforces existing mechanisms. "The dominance of the voluntary approach also sends the wrong signals to companies and investors", explained EEB in its press statement July 16, 2008. The EEB prefers stronger approaches and proposes the introduction of the producer responsibility principle to retailers and industry.*

At its Prague meeting end of October 2008, the ***Northern Alliance for Sustainability (ANPED)*** *stated that "changing unsustainable patterns of consumption and production needs a comprehensive, coherent and consistent approach" and also reclaims that Member States should develop national action plans on SCP.*

The implementation of the Action Plan happens by subordinated activities, which are – of course – completely dependent on the political mechanisms of the European Union. Therefore, an implementation of he announced activities according to a ratio of 1:1 can not be expected.
If one locates the policy measures contained in the Action Plan along the lifecycle of products, it becomes obvious that the Action Plan is mainly geared towards the environmental features of

products and towards the purchasing behaviour of consumers (see Tab 1.1). While production-related approaches and also waste management policies are not a part of the "smarter consumption and better products"-section of the Action Plan, it is all the more striking that product use is directly addressed to a limited extent only.[22]

Tab. 1.1: Analysis of announced actions in the area "Smarter consumption and better products"

Action	Product features	Product purchase	Product use
EuP Directive:			
- Minimum requirements	■		
- Advanced benchmarks	■		
Labelling:			
- Extension of energy label	■	■	
- Review and streamlining of the EU eco-label	■	■	
Incentives:			
- Identification of labelling classes as level for GPP		■	
- Identification of labelling classes as level for state aids		■	■
- Examination of taxation and other fiscal incentives		■	■
Other measures:			
- Consistent data and methods	■		
- Green public procurement (GPP) guides		■	
- Voluntary GPP criteria		■	
- GPP monitoring		■	
- Retail forum		■	
- Consumer empowerment		■	■

Does the SCP Action Plan deal with sustainable consumption? The answer depends on the concept of sustainable consumption. Bearing in mind that the *purchase* of products forms the starting point of a consumption process, the announced actions of the Action Plan actually deal with sustainable consumption, for instance, when they refer to public purchasers. However, the way that consumers use products and their levels of consumption are not addressed by the measures contained in the action plan. Moreover, there is no reference to the most pressing environmental concerns arising in the areas of food, mobility, and housing. The most concrete measure planned is the identification of labelling classes for focussing state aids (e.g. subsidies). The plans for other measures that might stimulate a greener product use and the empowerment of consumers are less concrete and less precise. As far as fiscal measures and tax incentives are concerned, the Action Plan just mentions future examination of their potential and mentions the energy taxation as an example.

Beside European Union contributions, Member States have commenced their own SCP activities in different ways[23]. However, there is no uniform setting. Top-down and bottom-up approaches coex-

22 Of course, many of the measures related to product features, such as minimum efficiency requirements, have an impact on the use stage of the product lifecycle. But, this need not have an impact on the way how people actually use the product under consideration.

23 See also OECD (2008), Szlezak (2008), UNEP (2002) and UNEP (2008:23 ff).

ist; some of the approaches are stand-alone conceptual documents (Czech Republic, Finland, Hungary, Poland and the United Kingdom), whereas in other countries (like Austria, France, Italy, Malta, the Netherlands) SCP is taking part in national strategies for sustainable development. Other Member States pursue approaches that focus more on the *instruments*, i.e. they implant and/or adopt instruments, tools etc. to strengthen SCP (e.g. Denmark, Germany) without an explicit policy framework document.
Two supranational strategies, namely the "Nordic Strategy of Sustainable Development" (Nordic Council of Ministers 2004) and the "Mediterranean Strategy for Sustainable Development" (UNEP 2005) deal with SCP embedded in these strategies.

1.3 Some Conceptual Reflections on Consumer Behaviour and New Policy Patterns

The ASCEE project deals with policies to promote sustainable consumption. Therefore, some reflections on what drives consumption and how policy is designed and managed are required. On the one side, consumption is a complex phenomenon. It is the outcome of consumers' choices, of their values and attitudes and of their habits and routines. Consumers have different roles – as citizens, employees, household members, etc. – and they use consumption as a means of social interaction. These issues are discussed in the first section. On the other side, policy, and also consumption-related policy, is embedded in the discussion about new forms of policy – between government and governance, a discussion that is dealt with in the second section.

Consumer behaviour: potentials for change
For many of the instruments highlighted, consumer behaviour plays a crucial part. It is difficult, however, for a macro manager to promote change if he does not understand some of the underlying dimensions of consumer behaviour in general. We will consider three important theoretical, empirical and political discussions that policy will have to come to terms with:

– The tensions between *rational consumer choice* and action more guided by *habit or tradition,*
– the relationship between individuals in their roles as *citizens* and/or *consumers*, and
– the relationship between *needs* and *wants*.

Psychologists, as well as other social scientists, have engaged in the study of consumer behaviour in relation to sustainability. While the social psychologists emphasise the role of information in changing individual attitudes and consequently behaviour, the focus within environmental sociology has been on both individualistic and more structural theoretical models.
From a *rational choice* perspective, a starting point to a debate over individual choice/action, attitudes and behaviour is the *Theory of Planned Behaviour* (Ajzen and Fishbein 1980). According to this theory, behaviour should be predicted from actors' attitudes and intentions. Behavioural intention is supposed to be predicted from attitudes, subjective norms and perceived behavioural control.
The critique against Ajzen and Fishbein (1980) is usually developed along two dimensions. First, it is argued that individual consumers do not behave as rationally as the model presupposes. Secondly, the *context of social behaviour* is missing in the model. Consumers are not only individuals. They belong to households or communities with values and norms, and they act within a political and economic context created by businesses and political authorities
Formally, logically and normatively the attitude-behaviour model is strong. It is its empirical or practical shortcomings that bring theoretical and meta-theoretical debates into politics. We gain knowl-

edge and insight by taking into account that consumers are not atomistic actors in the market and by considering their values, culture and social capital. Miller (1998) argues that consumption is not primarily an individual activity, but framed by specific cultural and social contexts within and outside of the household. Within this perspective, social norms, *habits and routines* are decisive factors explaining consumption practices. Following the same lines, Gronow and Warde (2001) claim that, during the nineties, the focus of consumer research went from conspicuous to *ordinary* consumption. Consumption – in their perspective – is mainly about the everyday life of ordinary consumers, and this should be better reflected in contemporary research. One should not forget that consumption in modern societies is, to a large degree, mass-consumption of ordinary products with few opportunities for excitement. This observation is obviously relevant for efficient policy making on matters of sustainable consumption, keeping in mind that fairly mundane consumption areas, such as food, mobility and housing (including household goods), are responsible for the majority of environmental impacts (Tukker et al. 2006).

Another interesting contribution to this discussion is the theory of *practice* (Warde 2005). One of the advantages of this theory is that it concentrates both on social structures and individual behaviour, without being moralistic. Human beings, also in their roles as consumers, take part in a large number of activities, and their concrete practice is decisive for their choices in the market. The starting point for the modern theory of practice is Bourdieu (1977, 1990). The challenge in this part of the work by Bourdieu is to develop a theory that establishes a balance in individual behaviour between determination and freedom (Warde 2005). Bourdieu's concept of *habitus* may also contribute to develop this balance between the social and economic structure on the one hand and voluntary behaviour on the other (Bourdieu 1979). The construct of habitus creates a dialectic relationship between social and mental structures. Thus, the habitus both determines individual behaviour and is determined by individual and collective practises.

Individuals have both short term and more long term interests beyond the market place. They are not only consumers (Stø et al. 2005). The complicated relationship between our roles as *consumers* and as *citizens* has been actualised by the shift in political paradigm from government towards governance in late modernity (see section on p. 22). One of these processes is political consumerism or *individual collective action* as Micheletti (2003) calls this phenomenon. Consumption turns into politics when consumers choose market arenas to influence decisions made by governments and business, and mobilise other consumers to take part in this activity. This concept is closely linked to ethical consumption, where consumers make some of the same decisions without involving other consumers (Terragni et al. 2006).

The third discussion concerns the almost forgotten relationship between *needs and wants,* reintroduced in the book *How much is enough?* (Durning 1992). This need-want relationship has more or less vanished from environmental debates because so much has shown that *need* is a very problematic theoretical and empirical concept; at least as far as consumption is concerned (Campbell 1998). Similar studies have also challenged the simple value-for-money model. Baudrillard emphasizes the symbolic values of consumption: "The fundamental conceptual hypothesis for a sociological analysis of consumption is not use value, the relation to needs, but symbolic exchange value (…)" (Baudrillard 1981: 30). This phenomenon was also recognised by Veblen (1899/1925), more than a hundred years ago, as well as in more recent works by Bourdieu (1990), and in the postmodern tradition (Featherstone 1991). Consumption is closely linked to the identity of modern individuals, far beyond needs and the use value of products (Douglas and Isherwood 1996).

Jackson has tried to revitalize this discussion. It is problematic completely to replace needs with wants and desires, because with these concepts it is not possible to answer the question of "how much is enough?" (Jackson et al. 2004, Jackson 2004). There seem to be no limits to personal wants. For sustainability, this is important because there are physical limits to human activity, recognised by the vast majority within the scientific community. This is the main argument behind the rethinking of basic human needs. This is also the point of departure in the Brundtland report on

sustainable development, defined as a "development which meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission 1987). Furthermore, previous research experience has shown the importance of creating *windows of opportunity for consumers* (e.g., Svane 2002, Schäfer et al. 2007). The main idea behind this theory is that in everyday life, it is difficult for consumers to change habits, even if they are well informed and motivated. However, when people make certain fundamental changes in their life, they are susceptible to changes on other aspects as well. Potential situations of opportunities (or "windows" of opportunity) could be when persons change dwelling, change workplace or occupation, get married or divorced, have children etc.[24] In a recent Norwegian study (Throne-Holst et al. 2007), individual situations of opportunity were more important for energy saving than attitudes among consumers.

However, windows of opportunity can also be created by other actors in the market, and by political authorities on local and national level. In the EU project ToolSust (Stø et al. 2004), for instance, special focus was placed on the framework created by businesses and local policy makers. This means that for the positive values, attitudes and knowledge that are developing among consumers to be transformed into sustainable behaviour, the windows of opportunity have to expand substantially. This calls for determined policy making on local, regional, national, European and perhaps even global levels.

With respect to promoting more sustainable consumption patterns, one can conclude from this brief overview that

- the provision of information about alternatives to current unsustainable consumption patterns will, though important, most often not be sufficient to achieve a durable change in people's behaviour,
- as individual consumption is an outcome of individual behaviours *and* collective practices, change will require intervention at both the individual and social (e.g. community) levels,
- since consumption is very often shaped by habits and routines, policy intervention may provide a bigger benefit when targeted at phases in life where change occurs anyway, e.g., when going into retirement, when starting a family, when changing jobs, etc., and
- any attempt to influence consumer behaviour must not simply address physiological and functional needs, but should also consider the social and symbolic qualities embodied in modern consumption patterns.

Policy: between Government and Governance

The deficiencies of traditional, top-down command-and-control policies have been a standard mantra in policy debate in the EU and beyond for well over a decade. Common to most of the rethinking since the 1990s has been a shift from "government" towards "governance".[25] There are some aspects in the governance discussion that deserve a particular mention here.[26]

First of all, there has been a *change in the role of public authorities*, a shift from central authorities towards more diffuse locations for policy-making, closer to the public, the citizen, and the ideals of

24 Within the NOA models of Vlek et al. (1997) they use the concept of abilities and opportunities to describe some of the same phenomena on the individual level.

25 See for example Blumenthal and Bröchler (2006), Héritier (2003), Knill and Lenschow (2004), Mayntz (2006), Treib et al. (2005).

26 See Jordan et al. (2007: 285).

deliberative decisions. This type of decentralization is usually accompanied by shifts from highly hierarchical structures towards more representative ones, and it tends to emphasize horizontal relationships. The trend has also blurred the distinction between public authority and private party roles in policy making. While the state still acts as the central regulator, other stakeholders have emerged as co-regulators, taking part in public discourses and decision-making. Moreover, governance has moved closer towards the marketplace. Considering that consumption is very much about the marketplace, the trend is very relevant. It is also a complicated one. As was noted earlier, the societal roles of a citizen and a consumer are largely overlapping, yet they witness quite diverging behaviour (van den Burg 2008).

The second trend to be reckoned with is that of *multilevel governance.* Today's policy processes are often characterized by multiple and transnational levels of decision-making (Hooghe and Marks 2003). The EU is a prime example of multi-level governance where local, national, European and international levels of decision–making are closely linked. Policy has, of course, always been practiced at various levels, and the most effective level of making policy is a constant source of debate. In the EU context, the principle of subsidiarity aims at clarifying the most effective level of the political system for a particular issue (Jordan et al. 2007: 285).

The characteristics of sustainable consumption render this field of policy susceptible to the new modes of governance. Sustainable consumption is unstructured and technical in nature, and huge amounts of information are required to deal with it (Hey et al. 2007: 1863).

Linked to the changes in governance as a *process,* one may also observe changes in *policy instruments.* Traditionally, government has been characterized by "bureaucracy, legislation, financial control, regulation and force" (Richards and Smith 2002: 79). The shift has been to rely relatively speaking more on *non*-regulatory instruments. This has increased the actors' room to manoeuvre to adopt policy objectives. Concrete solutions are connected with objectives, strategies, capacities and capabilities of target groups. Jordan et al. (2007) have observed in empirical studies that "(…) new environmental policy instruments (i.e. governance) are certainly not replacing regulations (i.e. government), but instead appear to be supplementing them. New environmental policy instruments are more likely to be used to plug gaps in national protection systems or to respond to new and processing problems (…)" (Jordan et al. 2007: 296). This means that the often claimed *complete* shift from government towards governance, replacing top-down approaches by self regulation and bottom-up approaches, has neither taken place, nor is it expected to: it "remains an illusion" (FFU and IÖW 2008: 8).

If a replacement is an illusion, the question is what's going on? Various authors have described the last mentioned developments as "hybrid" governance (Jordan et al. 2007, Hey et al. 2007). The responsibilities of private actors and public authorities in policy formulation and implementation come together (cp. Hey et al. 2007: 1862). The "classic" Community method of making policy through harmonized laws or economic incentives is, in other words, *complemented* with means such as monitoring, peer pressure and mutual learning (Treib et al. 2005). The idea is that the combination of hierarchical control and civic self-participation is more effective than either one of the pure forms alone (Mayntz and Scharpf 1995). With regard to the instrumental setting, supplementation rather than substitution of new environmental policy instruments is taking place, i.e. another "layer" supplements existing instruments. *Networks* have also been proposed as an explanatory model (Mayntz 2006: 19f.). and a normative objective. In a network governance model, there is no longer a single steering centre in the society. Interaction within the non-hierarchical networks produces innovations and facilitates consensus building. This may in turn reduce resistance regarding the formulation of policy as well as its effective implementation (Mayntz 2006, Rhodes 1997). This kind of policy making may be particularly well adapted to complex and dynamic social environments, where central coordination is difficult if not outright impossible to begin with (Mayntz 2006). Sustainable consumption is clearly an area of that kind. Consequently, the state's role may have changed from an omnipotent authority to that of an insightful "activator" (Mayntz 2006: 21). The

state has not necessarily lost control, but the control has changed in its form. The authorities can maintain special, privileged roles in the policy networks through their existing and new means of intervention (Mayntz 2006: 22).

Altogether, there is what might be described as *granulated* policy making. Elements of traditional government actions are linked with governance, but the new granulated policy design is not linear, it is changing its mode and design during the policy process. We therefore call it *circular* governance.

To conclude, sustainable production and consumption appear to require these kinds of "circular" governance approaches. Consumers act individually on the basis of their attitudes and values, yet are at the same time guided and constrained by social and situational influences. The societal roles of a citizen and a consumer are largely overlapping, yet witness quite diverging behaviour (van den Burg 2008). These facts have rendered consumption so versatile and heterogeneous an issue that governments have struggled to address it effectively.

In a complicated system of consumption, non-hierarchical forms of decision-making can produce more effective solutions. More information may be made available, a wider range of values taken into account (Rhodes 1997, Smismans 2008). Consumers, retailers and producers are examples of the civil society stakeholders in the sustainable consumption discourse, whose views need to be carefully integrated into the policy in a deliberative process.

2 Innovative approaches

2.1 Clustering into three themes

The starting point for the ASCEE research was the 'classical' distinction between types of policy instruments (see e.g. Oosterhuis et al. 1996, GTZ et al. 2006, OECD 2008): regulatory and economic instruments, performance of governments and public institutions (e.g. public purchasing), compulsory and voluntary information instruments (e.g. mandatory energy labels, and information websites, respectively), other voluntary instruments (e.g. corporate social responsibility) and co-operative approaches (e.g. product panels). This distinction takes the policy-maker's perspective. It does not, however, illuminate the impact of policy intervention. Therefore, a new perspective was added on top of the classical instrument-based distinctions by dividing policies in terms of their *contribution to changing or enabling a change in consumer behaviour*. Policy instruments were hence grouped along three, partly overlapping dimensions:

– raising consumer awareness,
– making sustainable consumption easy, and
– greening markets.

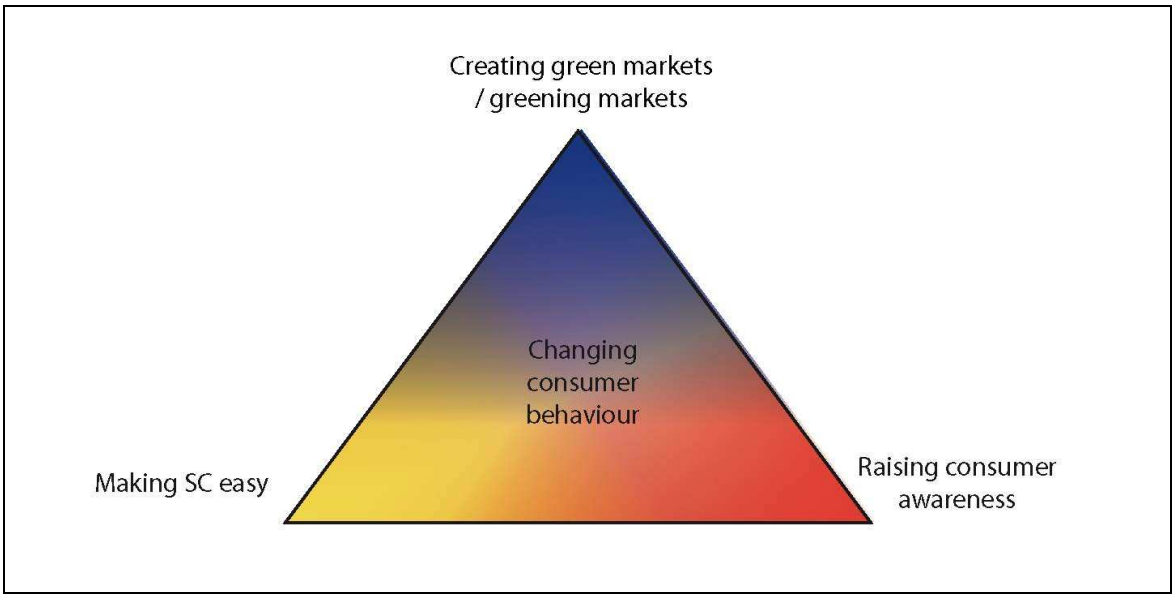


Fig. 2.1: The three dimensions of changing consumer behaviour

The distinction between these three dimensions highlights the fact that consumption needs to be understood as a process. From the consumers' perspective, the consumption process may be temporally divided into at least four phases: planning, buying, usage and disposal. The first dimension of changing consumer behaviour is "Raising consumer awareness." It is closely associated with the planning phase of the consumption process; while the "making sustainable consumption easy" and the "greening of markets" dimensions are more closely linked with the buying phase of consumption. Therefore, by grouping the "consumer awareness raising," "making sustainable consumption easy" and the "greening markets" dimensions separately, distinctions between the planning and buying phases in the purchasing process may for instance be better highlighted.

A substantial number of the instruments identified within the ASCEE project focus on "raising consumer awareness." These include mandatory or voluntary labelling schemes, information campaigns and information websites, eco-benchmarking tools[27], and consumer coaching measures, such as, "eco teams" (see section 2.2.4). Evidently, raising consumer awareness is an important factor in changing behaviour (see section 1.3). Awareness raising instruments are, however, limited. They depend on the consumer reacting voluntarily, sometimes without the necessary infrastructure or without help in overcoming barriers to changed behaviour. It is, therefore, crucial to combine awareness raising with other kinds of instruments and to reconsider the current economic and political framework generally, in order for awareness raising to have the greatest impact on behaviour.

Among the identified instruments in the second dimension of "making sustainable consumption easy" are various attractive offers to consumers and means to limit the range of non-sustainable products on the market. It is acknowledged that consumers may be willing, but unable to act in a sustainable manner (see section 2.3). If the more sustainable products are not easily available, hard to know about or to understand, or if they are prohibitively expensive, the greener purchasing

27 The Eco-Benchmark is a tool developed by the Finnish Environmental Ministry aimed at providing consumers key information on the environmental impacts of their consumption behaviour in an easily comprehensible, illustrative fashion. The main target group is currently key people involved in environmental education, but this is projected to expand to consumers more generally (see www.environment.fi/eco-benchmark, accessed August 29, 2008).

decision may not occur regardless of the goodwill of the consumer. In fact, the mere perception that one is unable to adapt to certain behaviour may be sufficient to prevent consumers from taking action. Therefore, the instruments in this category aim to take consumer behaviour from the level of awareness to that of action, i.e. filling the "value action gap". This may be achieved by creating an environment in which sustainable consumption is mainstreamed into consumers' current lifestyles and by making the sustainable choice easy to implement, practical and financially attractive. Examples of this type of tool include third-party investors for energy efficiency, point of sales guiding systems, bonus systems (see section 2.3.5.4), retailer assessment instruments such as the Red/Green Calculator (see section 2.3.2), green taxes and congestion charges (see section 2.3.5.2). Making unsustainable consumption less easy also falls under this dimension. By making it more difficult and costly to consume in an unsustainable manner, sustainable consumption may eventually become the easier choice to make. Individual carbon trading is an example. If there is a cap on allowed emissions and a cost is associated with exceeding allowances, this may influence more sustainable behaviour at the individual level (see further in section 2.3.5.1).
The "greening of markets" is another central element of SCP policies. Creation and greening of markets can be achieved in different ways in terms of "market penetration" and "environmental performance":

– by *improving* the environmental *performance* of products and/or by stimulating 'greener' product innovations,
– by *phasing out* or even prohibiting products with bad environmental performance, and
– by *increasing the market share* of environmentally benign products.

These three strategies to create and green the markets complement each other, and environmental policy tools may address several of them at the same time. For instance, Green Public Procurement accelerates the diffusion of eco-efficient products and enhances incentives for more sustainable innovations, in particular through technology procurement. Other examples of instruments for greening the markets include, for instance, market-oriented product panels (see section 2.4.3), or innovative regulatory approaches such as the German Renewables Energy Act, mandatory standards such as minimum performance targets, and fiscal incentives such as the Dutch Green Funds System (see section 2.4.2).
As was pointed out above, the three types of policy intervention – raising consumer awareness, making sustainable consumption easy, and greening markets – have obvious overlaps. Congestion charges may not only make unsustainable consumption difficult by deterring commuters from driving cars, but also positively influence the market for public transport services. And eco-labels do not only contribute to raising consumer awareness, they also spur greening of markets by increasing the visibility of greener products and by providing incentives for suppliers to make such offers available.

2.2 Increasing user awareness

2.2.1 Introduction

Political authorities often feel the need to have public support when they enact policies in the environmental field; especially if decisions are costly or burdensome. The 1987 report of the World Commission, Our Common Future, might have contributed to raising such support in the late eighties and early nineties. At that time, most attention might have been put on consumers' waste han-

dling, the development of eco-labelling schemes and experiments with green public procurement (GPP).

This might perhaps have been done without this support from the public as well, but political legitimacy is an important factor for modern societies and it probably made the decision processes easier. Voters who understand and agree with the general direction of policies are less likely to sabotage political and economic instruments and measures, and by protesting with their feet and wallets. For the economic aspects of this citizen support, there is material that indicates that awareness at this point is present. A Euro barometer study, conducted in autumn/winter of 2007 found that "75 % (of) respondents of the poll say that they are ready to buy environmentally friendly products "even if they are more expensive" (European Commission 2008g: 27). 25 % "totally agree" and 50 % "tend to agree". This "passive" support for price increases is important, and probably necessary, even if 60 % of respondents, as consumers, "have not crossed the threshold between intention and action" (ibid. 28). In line with the concerns of the present report, one Euro barometer conclusion for this field (attitudes towards the environment) is that "it seems that transforming green attitudes to green behaviour is one of the main challenges revealed by this survey" (ibid.: 29).

However, in many countries the support for environmental questions seems to have declined from the early nineties, obviously with variations between countries. This change is documented in Europeans and the Environment (European Commission 1995b), stating that citizen concern about the environment was declining. The "feeling of urgency" had increased throughout the community between 1988 and 1992, but slowed down in almost all countries between 1992 and 1995 (European Commission 1995b: 11). New political questions seemed to press sustainable consumption and production down on the political agenda and out to the fringes of public discourse. Early in the 21st Century, however, public concern over climate change, previously called global warming, changed the situation once more. From then on, environmental issues have been back on the agenda.

One interesting aspect of the slowing down of citizen concern in the nineties, however, is that we did not encounter a subsequent backlash in the *behaviour* of consumers. In most of the richer countries, municipalities had established handling systems for consumer waste, making it possible – and after a while even "natural" – to separate i.e. glass, paper, metals, organic waste, toxic waste and others. In addition, a market had been established for some eco labelled goods and some organic produce. The availability of such products was improved in the nineties; at least, in urban areas.

This illustrates the complexity of the relationship between attitudes and behaviour. Public concern might have declined in a certain period, but the actual behaviour of European consumers was probably more in line with the sustainable goals in 2000 than it was ten years before; at least for some consumption areas (Strandbakken 1995).

As mentioned above, the public discourse on climate change has put environmental questions back on to the political agenda and reintroduced them into the political discourse. This is well documented and means that political, economic and juridical instruments introduced by political authorities will be accepted by the public to a greater degree. People seem willing to accept constraints on their freedom as consumers and citizens. They are, probably, also willing to contemplate a change in their behaviour in a more environmentally friendly direction. The Euro barometer 2008 report shows strong support for the idea of individual responsibility for protecting the environment (85 % affirmative); even if even more respondents (90 %) agree that the primary responsibility should lie with the biggest polluters (European Commission 2008g: 16-19). Action most often taken by consumers related to waste, with 59 %, domestic energy consumption with 47 % and water consumption with 37 %, (p. 20).

From the history of consumer organisations, we know that information and education have been two main elements in the institutionalisation of the modern consumer movement. The NGOs were organised around consumer magazines, and the importance of these magazines should not be un-

derestimated. Among other topics, product tests became very popular in the early history of consumer organisations. These tests still have an important place in the consumer journals. Thus, when President Kennedy formulated his Consumer Messages to the Congress in 1962 (Kennedy 1962), *the right to information* and *the right to choose* were identified as two of the main consumer rights in modern society; together with the right to security and the right to be heard. When Consumer International (under the name of IOCU) later in the sixties reformulated the fundamental consumer rights, they also included *the right to consumer education.*

Based on these principles, also supported by the United Nations Guidelines, consumer NGOs have, more or less successfully, with limited resources, contributed to informing and educating modern consumers worldwide; thereby creating trust and legitimacy among consumers. So far, the focus has mainly been on questions related to value-for-money in the market place. However, it is worth noting that consumer organisations throughout their history have regarded consumption as a process, and focused both on the buying behaviour and the use phase of consumer goods; thereby broadening their perspective from the rather narrow "best buy" ideology. For example, consumer organisations engaged themselves strongly in consumer education when freezing technology was introduced 50 years ago. The washing process has been a popular topic in the consumer magazines for decades. In more recent years, the focus seems to have shifted towards services and modern information technologies; highlighting the shopping decisions as well as the use phase and the disposal.

This means that when we are discussing increasing user awareness, we should not limit our search to environmental instruments relevant to buying decisions. From the consumers' point of view, the consumption process includes at least four phases:

1. planning,
2. buying,
3. using, and
4. disposal.

When we discuss the environmental impact of consumption, it is imperative to include the entire consumption process.

In the ASCEE project, we have collected a number of policy instruments actually used, or planned to be implemented, in Europe, for sustainable consumption and greening of the market. A large number of these instruments deal with increasing user awareness among end consumers:

- Mandatory label, such as, for example the EU Energy label,
- Voluntary labels
    - Classical Eco- labels including the EU-flower, The Nordic White Swan and the Blue Angel in Germany,
    - Organic labels on the European and national levels, and
    - Environmental Product Declaration.
- Environmental Information campaigns, such as the Danish "One Tonne Less",
- CO_2 labels,
- Eco-Benchmarks,
- Public Information Websites, and
- Eco-teams, green living.

First, we will discuss some of the potential and limitations in information campaigns in general, using the Danish Campaign "One Tonne Less" as an illustration. This campaign is directed towards the public in general. Second, we will address some of the experience with organic labels as infor-

mation tools for consumers. Third, we will have a closer look at the eco-team as an instrument for raising consciousness, and changing behaviour, in households. In addition, we highlight some themes and dilemmas concerning the development of carbon labels.

Information campaigns and campaigns to educate consumers and change their behaviour are common tools, much employed in the health sector and for environmental issues. Tobacco, alcohol and nutritional advice have been directed at the general public or at specific groups including youth, elderly people and people with certain diseases. Anorexia and obesity are recent examples of topical campaign issues. Within the environmental "sector", campaigns have been used to try to reduce energy consumption, change modes and volumes of private transport, reduce meat consumption or even to reduce general levels of consumption.

Nevertheless, a number of studies and general experience have shown that the effect of such campaigns is usually limited. As previously mentioned, the relationship between attitudes and behaviour is complicated (see Ajzen and Fishbein 1980, Ajzen 1991, Stø et al. 2008). This is a well-known fact, in the scientific community and among politicians. This has not, however, undermined the popularity of this policy instrument. The information campaign remains a much used top-down tool addressing problems linked to health and consumption.

The reason for this could be that juridical (like the Norwegian ban on phosphates in detergents) and economic instruments (like public procurement schemes) are perceived as more politically controversial, and they take more time and effort to implement. And, in a political-economic climate dominated by neoclassic models, the use of governmental regulations is perhaps more controversial than it used to be. It is easier to propose information campaigns to change individual behaviour, than to initiate political processes which carry a substantial danger of provoking stakeholders. Thus, the responsibility is moved from the political to the individual arena and the responsibility is put on households and individual consumers. It is also a way to signal that you have taken a problem seriously and that you really have done something to meet the challenge.

The studies mentioned below seem to indicate that consumer information might influence behaviour in the desired direction if campaigns are linked to other activities and tools, involving other institutions and stakeholders (Vittersø 2003). The establishment and development of recycling systems in European municipalities might illustrate this (Kasin 1993, Enger 1995). Further, the knowledge of eco-labels in Norway increased dramatically when the information was linked to products actually found in the supermarket. This, in turn, increased the market shares of eco-labels within such important product categories as tissue-paper and detergents (Stø and Strandbakken 2005).

In the debates over sustainable consumption and production, a main concern has been to increase user awareness along the value chain. Based upon this ambition, programs have been released to *inform and educate consumers* to understand the environmental impact of everyday life consumption and to develop *programs to change consumer behaviour* towards a more sustainable pattern and lifestyle.

Increasing user awareness is important along two dimensions. First, educated and informed consumers are a prerequisite for sustainable choices in the consumer market for goods and services. Second, in this discussion it is often forgotten that individuals are not only consumers; they are also citizens. In a political context, user awareness is important for all sorts of activism, such as demonstrations, lobby activities, letters in newspapers, word of mouth and voting behaviour.

For the three primary cases below, we did a lot of desk research in the form of home-pages/websites and literature studies. This also included drawing on experience from other recently performed studies. In addition, we did ten interviews on the specific themes, five by telephone and five face to face. Some were academics, with a more general interest in one of the fields. Some were spokespersons for specific campaigns and others represented NGOs with a stake in a certain campaign. Finally, we had an executive from an environmental ministry in one of the new member states. The interviewees' nationality followed the location of the cases. Additional information on carbon labelling comes from ad hoc interviews and participation in committees.

2.2.2 Information campaigns: One Tonne Less

One Tonne Less is an ambitious Danish information campaign aiming at reducing CO_2 emissions from individuals and households. It consists of two elements. The first objective is to raise Danish consumer awareness of the links between their lifestyle choices and their share of CO_2 emissions. In that sense, it is a classic information campaign .The second objective is to commit Danish consumers and households to specific acts or courses of action to reduce their CO_2 emissions; preferably by one ton. This commitment is done on the One Tonne Less homepage. The campaign will also be evaluated according to these two criteria: 1) has the campaign increased consumer awareness, and 2) how many people have committed themselves to a one tonne reduction. It is not possible to tell if individuals have actually fulfilled their commitments; but this is a well-known constraint.

It is also worth noting that the potential reduction of CO_2 emissions will take place without any changes in the economic and political framework for individual actions. One way to reduce your CO_2 emissions substantially is to shift from private cars to collective means of transport. But the prices, availability and comfort of public transport are not changed. No new windows of opportunities are opened, but the campaign aims to inform Danish consumers about existing opportunities. From an academic point of view, we also hope to gain a more general insight into public information campaigns to change citizens' behaviour. What results might reasonably be expected from them and what kind of limitations do we meet when we employ this instrument?

2.2.2.1 The development of the campaign

The campaign was initiated by the Danish government, planned to run for one year, but was later extended to two. A top down action from Ministry level tried to include stakeholders from business as well as NGOs, in addition to celebrities. Ordinary citizens take part in the campaign by committing themselves to reduce emissions. Seen from the outside, it appears to be a very well planned and executed campaign, with considerations about needs for specific approaches when involving different target groups. The initiative is very aware in its development and use of web based tools, graphic design and targeted advertising.

2.2.2.2 Description of the One Tonne Less campaign

The Danish Ministry of Environment in cooperation with the Ministry of Transport and Energy launched the campaign One Tonne Less in March 2007. As mentioned, it was a one year campaign directed at Danish consumers in order to reduce the CO_2 emissions from the activity of modern households. However, because Denmark is going to host the United Nation Climate Summit meeting in December 2009, the campaign has been extended for one year. This decision was taken by the Ministry of Environment, because the campaign could function as one input to this international conference. However, this extension is not followed by new goals and activities. The campaign will run in the last year, with limited resources only.

According to the campaign, the average Dane emits 10 tonnes of CO_2 per year. Six tonnes of this relates to personal behaviour in the individual or household choice of heating, transport and various consumer goods. The One Tonne Less campaign is mainly an awareness-raising campaign that aims at informing every single Dane that CO_2 emissions are caused by our way of life, and that we are all responsible for reducing our own CO_2 emission. According to the campaign, this could be achieved without giving up our modern ways of life; we mainly need to use our common sense, and change some of our everyday habits.

A large number of businesses, NGOs and local political authorities are engaged in the campaign, and contribute substantially to the activity. However, the main target groups are individuals and households. Consumers and households are divided into four different segments based upon a two dimensional table:

– consumers' knowledge about environmental problems (high vs. low) and
– consumers' environmentally friendly behaviour (high vs. low).

Information directed at the two groups with a relatively high knowledge of environmental problems uses arguments based on a combination of moral and social norms. For the two other groups, containing people with less relevant knowledge, the campaign utilizes a mixture of social norms and information linked to value for money. But the campaign is not only concerned with the message to various consumer segments. It has also designed special channels for them.
For all groups of consumers, a general set of arguments in favour of lifestyle change were believed by the campaign officials to be relevant:

– First, they expect that morally and ethically aware consumers like to perceive themselves as persons who are doing what is right. This has been termed the *feel-good* factor, and is directed at consumers.
– Second, they believe that social norms and a mild sort of peer pressure is operative; the so called *good-neighbour* factor. This is directed at citizens' immediate surroundings.
– Third, less normative and more directly material, the campaign presupposed that it would be relevant to demonstrate that a large part of the proposed changes are economically advantageous; what we might call the *what's in it for me?*-factor.

In addition to these general arguments directed at the population at large, the One Tonne Less campaign has selected two target groups for special attention. The first group consists of the group of relatively "wealthy" green consumers; the second is children and young ones.
The green consumers are informed of the environmental impact of their everyday life, and they have started their green practices. They need help and advice to develop their practices further. In particular, they need to distinguish between symbolic behaviour and changes that really matter. They are a target group because it may be possible to change their behaviour significantly during a one year campaign. In a way, they are the low hanging fruit of One Tonne Less.
Studies (e.g. Stø 2004) show that young consumers are aware of the environmental problems, but they do not necessarily link these problems to their own consumption and everyday life. They are a target group because of large potential, and because they are early in their consumption practices.
One Tonne Less has developed a large variety of activities to engage consumers in the campaign such as the CO_2 calculator, individual advice, competition and games, exhibitions and the involvement of celebrities and artists. The CO_2 calculator is developed in two versions, one quick version giving an overview of the CO_2 emission of individuals, and a more detailed version.
The idea is to have consumers commit to reducing their household's energy consumption. For each activity, their CO_2 emission is calculated, and also how much money they will save with their new consumer habits. Advice is divided into four categories:

– advice for the dwelling,
– advice for the family,
– advice for transport, and
– advice for teenagers.

The campaign cooperates with a couple of partners. From business, the primary business partner is Dong Energy, a Danish energy company of which the Danish Government owns 73 %.[28] Amongst other interesting business partners, we should mention COOP (the Danish association of consumer cooperatives), DHL Denmark, DSB, the Danish Railway Company, SAS, the Scandinavian Airlines System, Statoil, the Danish branch of the Norwegian national oil company and Toyota, Denmark. In addition to the business partners, more than ten environmental NGOs take part in the campaigns. This includes WWF, Green Families, The Green Carbon Initiative and the Danish Society for Nature Conservation. Among the partners we also find six municipalities, and the capital Copenhagen is one of them.[29]

2.2.2.3 Assessment of One Tonne Less

In the introduction, we voiced a mildly sceptical view of the frequent use of information campaigns as instruments in modern consumer- and environmental policy. Campaigns are an easy way to show the public that the problem is taken seriously, and that something is being done. On the other hand, it is very easy to be impressed by the way the One Tonne Less campaign has been planned, organised and carried out in Denmark. With limited resources, they seem to have done everything correctly. We want to emphasise the following elements:

The campaign was thoroughly planned. One Tonne Less was based on former activity within the Ministry of Environment in 2005 in an action plan called Green responsibility (Miljøministeriet 2007). Within that plan, a large Danish consumer survey was carried out; and it functioned as point of departure and benchmarking for One Tonne Less.

The campaign showed political leadership at a time when Danish citizens and consumers were concerned, to an increasing extent, about climate change and it was relatively easy to obtain political consensus about the political goals.

The message carried by the campaign was simple: to inform about easy ways to reduce CO_2 emissions from activities of individuals and households, and to commit people to reduce their own CO_2 emission by one tonne

The visions of the campaign were a fruitful combination of strategic and measurable goals. These goals were linked to knowledge, understanding, attitudes and behaviour and could be benchmarked according to the survey in December 2005

The target groups were identified. In addition to addressing total consumption, the campaign defined young consumers and green consumers as their main target. The argument for this focus seems reasonable. However, the use of the three strategic arguments*: 1) feel good, 2) good-neighbour and 3) what's in it for me?* seems more problematic. Here the campaign assumes things about the minds and motivations of different consumer groups that seem rather dubious. It is difficult to design specific arguments to meet different segments. It is also difficult to evaluate this approach.

28 The Danish state company Dansk Naturgas A/S was founded in 1972 to manage resources in the Danish sector of the North Sea. After some years, the company was renamed to Dansk Olie og Naturgas A/S (DONG). At the beginning of 2000s, DONG started to expand into the electricity market by acquisition of stakes in electricity companies. In 2005, DONG acquired and merged Danish electrical power producers Elsam and Energi E2 and public utility (electricity distribution) companies NESA, Københavns Energi and Frederiksberg Forsyning. The result of the merger was the creation of DONG Energy.

29 Among other participating public institutions, we should mention the Danish Electricity Saving Trust, Energy Service Denmark, the Information centre for health and environment and the Danish eco labelling body.

The CO_2 calculator creates a virtual community. The user does not do this alone, but together with thousand of other individuals or households.
The material produced by the campaign, and the excellent homepage, were designed specially for these target groups. There is a fruitful combination of scientific based knowledge and stimulating games and activities for everyone; especially young consumers
One Tonne Less has also managed to build an impressive network of partners and stakeholders from business, public authorities and NGOs. Even though the main target is consumers, the campaign has also managed to inspire many stakeholders to rethink their own contribution to climate change. The campaign seems well designed, thoroughly planned and adequately financed. So, it presents a professional image. It could easily be used by other countries as a guideline, if and when they wish to design their own campaigns.

2.2.2.4 Barriers to success

Has the plan managed to inspire and involve Danish citizens in the goals of the campaign? If not, what are the main obstacles? We have seen that 50,000 people have committed themselves to reducing their CO_2 emission by at least one tonne each. We have also seen that 47% of adult Danes have heard about the campaign and that 1/3 claim to have done something to reduce their environmental impact.
On the other hand, some of our academic interviewees were sceptical, and referred to One Tonne Less as “just another campaign”. Their main argument was that the campaign did not open any new windows of opportunity. The framework for individual behaviour was not changed. The campaign was limited to information about existing options.
It is perhaps possible to generalise this view. The success of information campaigns will always be limited, as long as the framework for behaviour is not changed and new windows of opportunity are not opened. So, the well-organised One Tonne Less campaign actually demonstrates its own limitations. The success is limited, even when the campaign is run according to the book. A lack of effort to integrate the awareness raising instrument and the everyday action context of consumers is one barrier to campaign success. The awareness is neither embedded nor institutionalised.
Another barrier is probably the limited time horizon of the campaign. If we want to significantly influence people’s attitudes and behaviour, a one to two year campaign is inadequate.

2.2.2.5 Innovativeness and transferability of One Tonne Less

The question of the degree of innovation is not easy to answer. All the elements and approaches employed by the campaign are probably well known from commercial advertising and information work across borders. The unique features, if there are any, have to be connected to the scope, the coherence or perhaps even the intensity of the effort. If other nations decided to run an ambitious CO_2 campaign, this Danish exemplar might provide a workable model. Then, the innovative aspects are linked to execution and the attention to details such as the coherent use of graphic design, and the quality of the campaign-user interface of web based material. In itself, a campaign to change consumer behaviour in a desired direction is obviously not new.
The most elegant and ambitious parts of this campaign seem to be very transferable. As mentioned above, One Tonne Less is probably an excellent model for this kind of initiative, and the approaches are easily adoptable elsewhere.

2.2.2.6 Conclusions

The conclusion has to be two dimensional. On the one hand, the Danish government has devel-

oped and delivered an excellent information campaign on the linkage between consumption and CO_2 emissions. They got the message out. On the other hand, the mere success of the campaign as such, highlighted the inherent limitations in the campaign approach. Isolated from the behaviour context, an information campaign usually will not change much. This limitation could probably have been anticipated. Norwegian experiences with campaigns for general life style change, as well as for specific awareness rising for eco labels, point in the same direction (Holbæk-Hansen 1980, Strandbakken 1995). We also might be tempted to pose the ruder question: if a well designed campaign fails to deliver, what about all the bad or mediocre ones?
Above, we claim that One Tonne Less "got the message out". We still believe that to be true, as citizen recognition was reported to be rather high. When the message, however, is that complex, the short time span of the campaign was problematic, even with its one year prolongation. All over Europe, we have seen campaigns for domestic energy saving. These campaigns tend to be the responsibility of more or less permanent official bodies or campaigns, like the Norwegian ENOVA. A campaign for a year or two might just not be an adequate instrument for this sort of ambitious behavioural change.

2.2.3 Organic labels in Europe

The focus on organic food production and consumption probably has something to do with the "civilization critique" that was formulated in the sixties and seventies in the rich parts of the world (Berry 1986). A middle class preference for "natural" developed; apparently with concerns for personal health, in addition to the environmental issues. There was reaction against perceived overuse of pesticides, insecticides and artificial fertilizers; a general scepticism at the apparent industrialisation of agricultural production. It proved difficult, however, to translate such general concerns within certain consumer segments and among scattered idealistic producers into efficient markets. The development of organic labels in most countries is an attempt to address these problems. So, user awareness is obviously only one aspect of organic labelling In addition, they contribute to making sustainable consumption easier (2.3); and, they probably play a part in greening of markets as well (2.4).
The information content linked to the labels is perhaps rather limited, but the labelling schemes might guide consumers to relevant information on their homepages. There are criteria for the labelling process and this information is transparent to all stakeholders.
We compare the labelling situations in Denmark with Italy, because organic labels play an important part in both countries. However, the labelling regimes vary substantially. To some degree we will also bring in data from other countries and from the EU-organic label, but our objective is not to give an overview of the organic labels in all European countries. It is rather, to compare two very different organisational models for organic labelling.

2.2.3.1 Development of organic labels

As mentioned, organic labels are normally introduced to ease communication between producers of organic foodstuffs and a more diffuse group of potential buyers of the produce. They aim at increasing the production, distribution and consumption of organic agricultural products. In some countries, the distribution of organic produce is rather inefficient, so much organic food is sold as conventional food. If the rationale for organic food lies on the production side, which it probably should, this is not a problem for the environment. The inadequate distribution could, however, deprive farmers of the price premium, and thereby remove incentives for change. In addition, lack of efficient distribution makes it difficult to assess consumer demand for products. In the market, the

primary task of the organic label is to guarantee the organic status of the products, as an intermediary between the producer and the consumer.
The overall picture of the development of organic labels is one of increasingly professional approaches and increasing scale, paralleling the new governance ideas found in ecological modernisation studies (Hajer 1995, Spargaaren 1997).

2.2.3.2 Description of organic labels

Organic labels are relevant for all European countries. Today we find one or more organic labels in all European countries. In some countries, one finds a jungle of labels; while others have developed a more centralised system. Thus, there are well performing labels in small and large countries, all over Europe, in countries with different history and traditions.
Denmark has a long tradition of organic farming, and over the years, organic food production has attracted great attention from politicians, authorities and organizations. Effective control of organic production has given Danish organic products a high degree of credibility. This is an important condition for the marketing of the organic products. Denmark is exceptional in having an official set of regulations and a single unique symbol for organic products, and also in that the State undertakes inspections. In general, Danes have great confidence in the State, as a serious and neutral body, for inspection and labelling.
Organic farming has its roots in alternative farming systems, and these systems have existed for many years both in Denmark and other countries around the world, questioning whether intensive agriculture, using artificial fertilisers and sprays to provide the greatest possible yield, is the best way to produce foods that promote human health. Furthermore, there is agreement that the impact of the production method on the surrounding environment should be included as a parameter of quality.

Abb. 2.2: The EU organic and the Danish national labels

The most common organic label in Denmark is the so-called Ø-mark (organic is called “økologisk” in Danish). This label is governmental and was introduced to the market in 1990. All Danish consumers know it, and for organic products it is an advantage to have this label on the packaging. The Ø-mark label is the dominant label in the Danish market. No other organic labels are commonly known by Danish consumers, although many products have supplementary labels. Among the most common are Soil Association, KRAV, SKAL and Debio. Denmark is an open economy, so the EU organic label is present on a lot of the imported products.

Trade in organic foods is widespread in Denmark, and the products are sold mainly through ordinary places of purchase such as supermarkets; but, also sales via market sales, subscription sales, internet sales and farm outlets are common.
Only authorities under the Ministry of Food, Agriculture and Fisheries carry out inspection under the government rules for organic production. The Danish Plant Directorate inspects the primary production, while the Danish Veterinary and Food Administration inspect processing. Some undertakings are inspected daily, while other undertakings have inspection visits at least once a year. Serious violations may result in fines, or the licence being taken away.
In Italy the earliest pioneering experiences in organic agriculture date back to the nineteen-sixties, but it only took off in the nineteen-seventies, involving more and more farmers and consumers seeking an improved quality of life and consumption. During the mid eighties, the first local coordination agencies established the “Commissione Nazionale Cos'è Biologico” (National Commission for Organic Agriculture). Made up of representatives of organisations and consumers' associations from each Italian region, the Commission established the first nation-wide self-regulatory standards for organic farming.
Once EU-Regulation 2092/91 was implemented, the numerous small associations of organic farmers and the producers and consumers committees operating in every region reorganised themselves, joining forces through mergers and a federal network. Today, there are 16 officially recognised certification agencies operating in Italy. In the nineteen-nineties the organic sector in Italy showed one of the largest average annual growth rates in Europe. Between 2002 and 2004 the number of farms decreased, because in some regions public financial aid was no longer available.
While Denmark has one dominant label, the situation in Italy is more fragmented and pluralistic. In 1990 there were four certifying-bodies/ producers’ associations in Italy. These were AIAB, Suolo e Salute, CCPB and the Biodynamic Association. These which later gave rise to a certifying body named CODEX. The number of organisations has increased over the past 15 years. Today, there are 16 officially recognised inspection agencies operating in Italy (and in German speaking South Tyrol four German bodies are authorized).

2.2.3.3 Assessment of organic labels

Organic labels play a part in the business to consumer communications in all European countries. But to which degree have these labels been a market success? Which data are we looking for to answer this question? Has any evaluation taken place?
Denmark is one of the top-ten countries in Europe as regards organic share of the total cultivated area. There were 3,714 organic farms in 2002 cultivating approx. 180,000 hectares corresponding to 6.7 percent of the total Danish farmland. Data shows that the number of authorised organic farms was fairly constant from 1991 to 1994. In 1995 there was a large increase of organic farms equalling a growth of 55 percent compared to 1994. In 1996 there was a minor increase of 116 farms equalling 11 percent. The net growth for 1997 to 1999 was about 39 percent per year. And from 1999 to 2001 net growth was 367, equalling 11.8 percent. But, then it stagnated.
For the first time in five years, however, the Danish organic area grew in 2007: 261 farmers applied for conversion to organic farming. At the same time, 166 farmers announced that they will stop farming or stop being certified organic, leaving a net increase of 95 organic farmers. The Danish Ministry of Food, Agriculture and Fisheries expects that the organic area will increase by 20,200 hectares. In 2007 the ministry sponsored a campaign to inspire more farmers to convert to organic produce to fulfil the increasing demand for organic foods.
Products like carrots, potatoes and onions have relatively high market shares, covering more than half of the total sales of organic vegetables. However, the consumers’ interest in organic vegeta-

bles and fruit is increasing. Imports are needed to satisfy the market for organic vegetables and fruit in 2008.

The national Danish organic label is well known – 93% of all consumers recognise it. In general, people have a good understanding of the organic agricultural system, and its rules. Denmark has the largest per capita consumption of organic products within Europe. Important motives for buying organic products are concern for the environment and animal welfare, but health related motives and concern for product quality is increasingly important (Baourakis 2004: xv).

The economic value of the Italian organic market was about 1.45 billion Euros in 2002. The growth trend is very strong. Food scares about mad cow disease (BSE) led to an acceleration of growth. In the first three months of 2001, the largest wholesalers reported a growth in sales volume of between 40 and 65% compared to the same months of 2000. It is therefore no surprise that the big national companies and the Italian subsidiaries of multinational corporations have shown great interest in the organic agriculture and food trade, launching new lines of organic products or taking over businesses operating in this sector.

Many fairs and markets are now devoted to organic agriculture. The largest fair is held in Bologna in September, but many other local markets are held throughout the country, from June to October. In some towns, a market is held monthly or weekly, and is often associated with the traditional town market. There are about 1,000 shops in Italy that specialise in organic food, two thirds of which are located in the north of the country. They are mostly independent shops, smaller than 100 square metres. There are also, of course, larger outlets (between 200 and 500 square metres) and about fifty franchise shops of regional or nationwide chains. The most important franchisor is Naturasì, with about 30 franchisee superettes (some are butchers, called "Carnesì").

Based upon existing literature and statistics, we have shown that there has been a significant shift in the production of food in Denmark and Italy from conventional to organic. Within both countries, they have succeeded in establishing and developing trusted labelling schemes. Even though they both have their origins in the same EC-directive, the national solutions vary substantially. In Italy, we find a large variation of labels with 16 different schemes controlling the production and communicating to the consumers. Denmark has chosen to establish one governmental labelling body, building on the strong general legitimacy of Danish Governmental institutions. Denmark also has strong brands within many products categories; while Italy is known for diversity.

Overall, this means that *the national labelling solutions are developed in line with the political culture and consumer habits of each country*. This is probably the reason why they have succeeded, so other countries may learn from Danish as well as from Italian experiences. Within Europe, we find substantial differences in consumer culture, value and habits and these are crucial elements in constructing functional and legitimate political and economic instruments in the consumer market. This is perhaps a general conclusion, and not linked to the organic food market only.

2.2.3.4 Barriers to success

The main barrier to success is supposedly low production volumes combined with inefficient distribution; two factors that will tend to make the products too expensive. This might have been overcome in Denmark, primarily due to the size of the country and the high degree of centralisation of its population. To overcome this barrier, which might be summed up as the “small scale, idealism, special interest” barrier, it is easy to call for professionalism, modernisation, and bigger units. A crucial question then, however, is if such a move will alienate parts of the organic food-oriented consumers. Some of the attraction potentially lies in the “otherness”; a dimension that disappears when organic is mainstreamed.

The scope for organic production will also partly depend on how agricultural authorities regulate conventional production. If trends go in the direction of reduced use of chemicals and artificial fertil-

izer, and reduced topsoil depletion, conventional production might incorporate much of the perceived qualities of organic farming.

2.2.3.5 Innovativeness and transferability of organic labels

To employ organic labels could not, in itself, be regarded as innovative. There might, however, be specific elements, original and innovative approaches within some of the schemes. In our first round of interviews, on national SCP policies, we had an example from one of the new Eastern European member states, where the ministry of agriculture considered using the “organic” way to enter a niche market in the richer parts of Europe; niche markets with good prices. This was also an attempt at turning technological backwardness into an asset, as Eastern European agriculture often is “under-industrialised”. So, conversion to organic production is comparatively easy. In this context, organic labels seem quite innovative.

2.2.3.6 Conclusions

What about the future of organic labels? In the European consumer market we are able to identify a large number of other relevant labels. We have not only organic labels, but a large number of fair trade and other social labels. To an increasing extent, we also have nutrition labels within many product categories. The recent focus on climate change has also put food miles and CO_2 emission on the labelling agenda. There are reasons to believe that all these labels may increase possibilities for consumers to choose products that reflect their wants and values. However, on the other hand it may confuse large consumers groups, and make it even more difficult to choose in the increasing jungle of labels.

2.2.4 Eco Teams

The Eco Team aims at achieving an increase in awareness and the development of a more environmentally friendly life style in households. The method is based on cooperation between small groups of interested families. A set of meetings between the participating households deals with the most common and important themes and problems that families meet when they try to change their consumption to a more environmentally friendly direction. The idea is to introduce a free flow of information between participants, to have a certain amount of peer pressure and to have some elements of fun and competition between households. The fun/competitive aspect is present because of the quantitative monitoring of the households’ degree of success; making participants compete with themselves, as well as with the other team members.
In the context of this report, the Eco Team is regarded as a top down method, initiated by an outside actor. Analysed as an information strategy, the phenomenon makes different pieces of theoretical considerations relevant. The instrument seems to work in a way that overcomes the limitations of the typical attitude-behaviour studies (and approaches), and is situated firmly in an everyday or ordinary consumption setting focusing on the present and future practice of the households in their struggle for lifestyle changes.
Eco Teams have been introduced and tested in most European countries. As mentioned, in this context, we mainly draw on experience from Norway, but in the assessment (2.2.4.3.) we rely heavily on evaluation work from the UK. In these two countries, we believe the instrument to be well applied and tested.

2.2.4.1 The development of the Eco Team

"The core Eco Teams process was developed by Global Action Plan in the Netherlands in 1990" (Global Action Plan 2008: 7). "EcoTeams are small groups of households who meet once a month for approximately five months to learn how to reduce their environmental impact, and in doing so, measure their waste and recycling production, and energy and water consumption" (p. 3). It is claimed that eco teams facilitate increased awareness in people of the impact their daily actions have on the environment and that behavioural changes are long term (ibid).

The Eco Team method is developed by *Global Action Plan International* (GAP)[30], and the "Eco Team" concept is a protected brand name. We base our analysis mainly on British and Norwegian experiences. In Norway, GAP chose to cooperate with, and be represented by, the already established "Environmental Home Guard" (Miljøheimevernet), instead of setting up an alternative organisation. This means that the Environmental Home Guard, later renamed as "Green Everyday" (Grønn hverdag), holds the Norwegian rights to Eco Teams on behalf of GAP.

Even though we have to respect and consider the branding of the concept, there obviously have been previous attempts at changing household consumption that resemble the Eco Team approach (Hansen and Læssoe 1995, Læssoe et al. 1995, Holbæk-Hansen 1980) in Denmark and Norway, and probably in other countries as well. But the branded Eco Team is perhaps more formalised than the previous examples. With this formalisation also comes a specific choice of words and concepts.

In later years, the technological content of the Eco Team has been increased, employing more digital media and less paper. Attempts at "mainstreaming" the approach through a program called "Action at Home" were rather unsuccessful, so GAP returned to the use of small teams (GAP 2008: 7).

2.2.4.2 Description of the Eco Teams

Acting on an external initiative, a number of households, typically between four and eight, form a team or a network, in order to cooperate, and share experiences about changing their consumption or life style to a more environmentally friendly direction. The external initiative will usually come from an environmental organisation, rather than from a government or a municipality; making it a different kind of top down instrument. The focus might be on specific environmental issues or on selected consumption areas, like energy, carbon dioxide emissions or organic food; or it might target consumption as a whole.

The "classic" Eco Teams are constructed around meetings in a certain sequence, where themes, milestones and approaches are determined in advance. The whole process covers a series of eight meetings, with a check of the participants' environmental performance at the beginning and again at the end of the team period. Today, GAP seems more flexible with the number of meetings etc. and DVDs and web pages are employed for better results. In addition, GAP now distinguishes between "levels" of teams, according to the degree of outside support: Fully-facilitated, Semi-facilitated and Stand-alone teams (Global Action Plan 2008).

The subsequent description is based on a paper version from 1998 (Endal et al. 1998), used for Norwegian trade union members. This is very much the design that has been employed in the early years of this century. In the start up meeting, participants talk about their expectations, what they think about living "greener", why they have decided to join a team and what their knowledge status

30 See http://www.globalactionplan.org.uk/ (accessed September 29, 2008).

is. Also: are participants rather green already, or are they just starting the process, and what kinds of expectations do they bring, socially and practically?

The first task for the Eco Team is to do the “eco-check”. Each participant fills in a form, to have an idea of the environmental status of the group and to identify the potential for change. The eco-check is an instrument to be used quite a lot during the process, and the form is to be completed twice; at the beginning of the Eco Team participation, and after the process is over. This is the material that reveals the amount of change that team members have been able to achieve. It is to a degree, the measure of Eco Team success.

Prior to meeting no 2, participants have agreed on a time period for registering the amount of household waste that each household generates (“look into the waste mirror”). The waste is sorted into a number of fractions, like paper/cardboard, food waste, garden waste, glass, plastic, metal, textiles, special waste, furniture/equipment and “the rest”; to be weighed at different points in time and added up to household totals and also amount per person. At the meeting, each member tells about his households’ waste registration, the households are compared and the differences between them are discussed and, preferably, explained.

The homework before meeting no 3 concerns energy (“look at yourself in the energy mirror”). Like the waste mirror, the energy mirror aims at describing the state of affairs in the households before the Eco Team effort takes any effect. Members note the digits on their electricity meter (and/or gas meter, where that is relevant) at two dates that they have agreed on in advance, they take a note of the number of square metres that need heating and they register other types of heating devices that they use (oil furnace, wood fireplace, central heating etc.). They register the usual temperature in bedrooms, sitting room, kitchen and entrance, they register all the electrical appliances in the household and the number of light points (bulbs or tubes) present in the dwelling. At the meeting, members compare the electricity use for each household in the agreed period,

Prior to meeting no 4, members draw a map of the natural habitat or surroundings around their homes (inside a suggested radius of 50 metres), and make a list of species that they know exist in their immediate surroundings (animals, birds, plants, trees, insects etc.). The idea is that members look at themselves in “the green mirror”; more precisely it concerns the small wildlife, the undomesticated plants and animals around them. In the meeting, members compare their maps and discuss how they can contribute to make their surroundings more varied and plentiful. The next homework is discussed.

Meeting no 5 is about buying habits and food habits, and the homework is to note all eco-labelled products that the household purchases in a given, predefined period and to describe what concerns are present when the members of the household plan and buy food. In the meeting, notes are compared. Questions discussed are: what eco-labels do they observe regularly, and what are their claims? What local stores offer a wide range of eco-labelled goods?

Prior to meeting no 6, about travel habits, members should register all travels done in an agreed upon period; the date, reason for the travel, the mode of travelling (car, airplane, bus, train, bike etc.) and the number of kilometres, for all family members. Then each participant notes five activities he likes to undertake, and indicates whether the activity implies travel or not. In the travel or transport “mirror” participants might also estimate the amount of carbon dioxide emissions that their travel activity adds up to. In the meeting, results are compared and travel patterns described.

Meeting no 7 is mainly about what can be achieved in the roles of citizens, it concerns political practice. The homework is about different sorts of barriers to change, what constraints members have met when they try to change into more environmentally sound practices, what kinds of contributions macro actors like state, municipality and business could make in order to make life style changes easier, and in what other settings might environmental initiatives be taken (school, kindergarten, organisation, congregation etc). In the meeting, members discuss barriers and constraints and what could be done with them, how the members of the team could take roles as change agents. The agenda for the next meeting is discussed.

The homework before meeting no 8 is to take the eco-check again. Thus, the Eco Team process provides a partly quantitative measure of what has been achieved, as well as a realistic view of the constraining factors. This monitoring of the environmental aspects of the lifestyle seems to be a key to the success of this instrument. This direct linking of behaviour to the information or awareness content is an effective way of demonstrating both the possibilities of individual consumption changes and of the constraints of this strategy.

2.2.4.3 Assessment of the Eco Teams

The most thorough assessment of the success of the Eco Team approach so far, is the Global Action Plan's own document "EcoTeams Evaluation Report" from June 2008 (GAP 2008). Households participating in semi-facilitated Eco Team projects reported a reduction in their waste by an average of 20 %, an increase in their recycling as a proportion of total waste by an average of 5 %, reduction in their electricity consumption by an average of 7 % and reduction in their gas/heating energy consumption by an average of 21 %, with seasonally adjusted figures. Their direct carbon dioxide emissions were reduced by an average of 17 %, water use by 15 % and their subsequent savings on energy and water bills were, on average, 148 pounds per year (GAP 2008: 3). In addition, the response to the participant survey was "extremely positive".

Post process studies and evaluations in Norway are rather less impressive. Here, Eco Team participants do not perform that much better than average citizens some months after the programme (Vittersø 2003). We speculate if this might be explained partly by the life phase of the participating families. Environmentally conscious families often are families with small children, and are about to establish themselves in work and neighbourhood; a period when it is hard to reduce one's environmental impact. This raises the question of whether a changed family situation, like having a child, always offers a window of opportunity. Another possible explanation of the differences might take into account the "initial status" of the households. In Norway, we know for sure that at least one of the groups that were evaluated consisted of families with a history of efforts at environmental change. Are Norwegian Eco Team members, to a larger degree than those from the UK, recruited from environmentally conscious households? We do not know, but if this is the case, the differences are meaningful.

Basically, we regard Eco Teams as an information tool in a top down perspective, where a macro manager wants to influence attitudes, as well as behaviour. But, the information flow should really be two way. The participating families are actually a vanguard for a new life style, and their degree of success is potentially important to policy makers. The information is here processed through a use phase. In an ordinary consumption perspective, Eco Teams are efforts at changing rather mundane, everyday activities, to a large degree concerning provision and questions of infrastructure.

With reference to the aforementioned evaluation efforts, it seems fair to say that the Eco Team is an efficient instrument for changing the consumption of a household. As a top down information based policy instrument, it should be regarded as a success. The obvious limitation is, however, that the Eco Team is working with interested and committed actors. It is perhaps hard to imagine how experience with consumption change among more or less green volunteers should be transferred in whole to a rather indifferent population. This means that quite ambitious awareness rising on a more general level ought to precede the more targeted eco team initiatives, Regarded as a method for changing the consumption of interested households, eco teams seem efficient.

2.2.4.4 Barriers to success

A possible barrier to the success and spreading of Eco Teams is the suspicion that they mainly reach and preach to the already “converted”. That is, however, not necessarily relevant if the instrument explicitly aims at already interested households.
A more real barrier to the degree of successful change might be a lack of opportunity. Where there are no realistic alternatives to transport by private car, the transport “mirror” mainly gives arguments for a political critique, and do not reveal realistic behaviour alternatives. Alternative goods have to be available. Systems for waste management have to be present. If not, the whole exercise will be a demonstration of constraints and political alienation. The Eco Team might still be a very efficient instrument for increasing user awareness, but this is only relevant for consumption change to the extent that this new awareness translates into some sort of political action that makes change possible.
The third barrier is the aforementioned problem of up scaling, or mainstreaming, an instrument developed for use by small groups. As we have seen, GAP, has left this challenge unresolved.

2.2.4.5 Innovativeness and transferability of the Eco Teams

The cooperation between a set of households targeting consumption practices from a sustainability perspective is probably neither new nor very innovative. There is, however, one element in the Eco Team approach that appears to be innovative, and that is the use of the eco check twice. This probably enhances the learning effect of the participation, it creates a platform for realistic deliberation on the subject of lifestyle change and it introduces an element of play and fun into something that is often regarded as boring, dreary and negative. After all, “consume less” is not a very sexy slogan.
When it comes to transferability of the instrument, we regard this as very high, at least inside a first world perspective. The concept and the approach travel well between cultures and nations, apparently with only minor adjustments.

2.2.4.6 Conclusions

As a policy instrument, to help consumers analyse their consumption or life style, and to raise their awareness, Eco Teams are successful. This Eco Team awareness raising is present even when structural constraints make individual behaviour change difficult. Further, as an aid to changing household consumption to more environmentally friendly directions, the teams work very well. As we have seen, the instrument is easily transferred between national cultures; at least, in the more affluent parts of the world. As a device for micro change, the Eco Team delivers.
As for the instrument’s limitations, we highlight two: Firstly, recruitment into a team presupposes interest and commitment. This means that the instrument tends to preach to the already converted. Secondly, and closely linked to the first point, attempts at up scaling have proven difficult. This particular small group approach has, so far, not been successfully mainstreamed.
Indirectly, however, the experience gathered through the Eco Teams feeds nicely into the knowledge base of policy makers and macro managers; providing realistic, and empirically tested, demonstrations of lifestyle change. Policy makers may be able to use this body of experience in order to identify constraints and possibilities in a demand side oriented sustainability policy.

2.2.5 Other interesting examples

2.2.5.1 CO_2 labels and initiatives

During recent years, a large number of initiatives have been taken in Europe to include CO_2 emissions in the existing labelling schemes or to develop more specific CO_2 labels. According to a report from DG environment in March 2008, Belgium, France, Germany and the UK are developing own initiatives (DG Environment 2008) Two different models could be identified that are already being tested and developed in practice.

The first model is based upon the paradigm of the classical ISO-type I eco label, where the product will be labelled if it meets certain criteria within an LCA perspective. In this case, the criteria deal with CO_2 emission along the value chain. We will use the Swedish initiative to illustrate this model.

The second model is more similar to the ISO-type III paradigm, where numerical environmental product declarations are placed upon the goods. In this case, the numerical data will inform about the CO_2 emission for each product unit. We will use the UK Carbon Trust and Tesco's activity to illustrate this model; very similar to a Japanese initiative mentioned below.[31] Thus, we will first describe the two models, using Sweden and UK as examples; before we discuss advantages and challenges with the two main models.

One of the initiatives from the EU Commission is to try to expand the EU-flower criteria to include CO_2 emissions. Thus, the EU-Commission is working with both models. This initiative is organised as a special project, and is run by The Swedish Environmental Management Council and the Italian consulting company Life Cycle Engineering. The aim of the project is to develop a special measurement toolkit for CO_2 emissions, based on LCA thinking. The criteria will include at least the most significant phases in the product life. There are reasons to believe that if the project manages to develop a user friendly toolkit, this could be used both in the application to the EU-flower, and within other European labelling schemes.

The project's work with the measurement toolkit will be based on input from Life Cycle Assessment methodologies, WRI/WBCSD GHG Protocol, Environmental Product Declarations (EPD and Climate Declarations), Intergovernmental Panel on Climate Change (IPCC) and Emissions Trading Schemes (ETS).

Japan has just begun an ambitious CO_2 labelling scheme, directed toward both companies and consumers. It is joint initiative between three ministries, and the prime minster Fukuda himself presented the vision in June 2008. These initiatives will be presented at the Tokyo exhibition "Eco-Products 2008" in December 2008, and among other goals, the responses of consumers will be tested. The decision to introduce a Carbon Footprint system in Japan will then be taken in February 2009, and the certification process will function in April 2009. At that time, the first products will be on the market (Inaba 2008).

A large number of companies have joined the project and among them are 10 retailers. Around 30 companies will present trial labeled products at the Tokyo exhibition; where food and beverages are in the majority. It is worth noting that 4 of the products are from the packaging industry. In the future, the labels will be expanded to detergents and electrical appliances. The Japanese system will build upon the ISO "Working Group for study/development of rules of emission, calculation,

31 In theory, it could also be possible to use a third model: a label based upon the red, yellow and green traffic light, used in the UK nutrition labelling. Such an initiative is taken by the CASINO, using a colour scheme, see http://www.produits-casino.fr/spip.php?page=developpement_durable_home (accessed October 20, 2008).

labelling and evaluation" (ISO/TC207/SC7-WG2). Several meetings will take place in 2009 and the standard will be published in 2011.
The reason for these activities internationally is the increased focus on the relationship between consumption and climate change. The initiatives address all stakeholders along the value chain. Most initiatives address a large product variety; but to some degree food and foodstuffs seems to be the most popular.

Carbon labels within the ISO-type I paradigm in Sweden

The Swedish initiative was taken in 2006 by KRAV, the certification institution of organic products in Sweden. Together with the Swedish Seal of Quality -IP SIGILL – it was decided to begin cooperation around producing standards for climate marking in 2007. The Swedish "Sigill" is the quality label for assured food. The label guarantees that the food has been produced on farms which follow strict criteria for safe food, animal welfare, responsibility for the environment and a vivid landscape. At the turn of the year 2007, several other stakeholders joined the project: Milko, Lantmännen, LRF, Skånemejerier and the Swedish Board of Agriculture. KRAV and Sigil work with a standard system that can be applied by a certification body accredited pursuant to EN45011 (ISO065) Lantmännen has already started the labelling. In the summer of 2008, their chicken received a light blue label, informing consumers that the CO_2 emissions from a 1 kilo chicken is 1.7 kg CO_2.
The main goal of this project is to reduce the climate impact by creating a labelling system for food products; where consumers make a conscious climate choice. This will also strengthen competitiveness of businesses; both within the food industry and among retailers. A substantial reduction of climate gas emissions compared to the reference is required for the label to be credible. On the other hand, if the criteria are too difficult to meet, it will limit the number of companies who are able to join the scheme.
KRAV has decided to develop standard criteria based upon general conclusions from assembled climate knowledge. This can be done by identifying some factors that have a large climate impact, such as concentrates based to a large part on soy protein, large consumption of fossil fuels and nitrous oxide emission from artificial fertilizer production.
The project is developed into several phases. In the first phase – Spring 2008 – a draft proposal for standards was mailed to relevant stakeholders in a hearing process. In this hearing process, KRAV received feedback from more than 40 stakeholders. Based on the comments, a new standard proposal will be developed for the production areas fish & shellfish, fruit & vegetables as well as grains and pulses. These are areas with a low level of processing. The aim is that there should be a certification body that is able carry out a credible test certification of a number of pilot objects from May 2008. KRAV is also working with a simple labelling system for food miles
The work with developing and formulating the second round of standards will be carried out during the fall of 2008, and the standards proposal should be delivered to the project owners during the spring of 2009. The most important area for this round is milk production
This means that the carbon labelling system will introduce voluntary labels for the best products within each category. It is the same logic used in the EU Flower, the German Blue Angel and the Nordic White Swan. This will make it possible for consumers to choose fruit and vegetables with certified low CO_2 emission, and it makes it possible for producers to improve their production within a certified regime.

Carbon labels within the ISO-type III paradigm in the UK

Type I labels are granted to products that meet certified criteria. They are supposed to give lower CO_2 emissions than conventional or unlabelled products within the same category. Type III labels

offer an exact number of grams or kilograms CO_2 emissions linked to the specific product. In the UK, this work is carried out by the Carbon Trust[32], and the leading retailer Tesco plays an important part in the development of this label.

The Carbon Reduction Label aims at showing consumers the amount of CO_2 – or equivalent greenhouse gases – linked to production and consumption in an LCA perspective. However, the carbon footprint of specific products is not only a matter of industrial production and the use of products; it also covers distribution and disposal of the products.

Tesco have started a project with CO_2 labelling, where four products are used as an illustration: po-

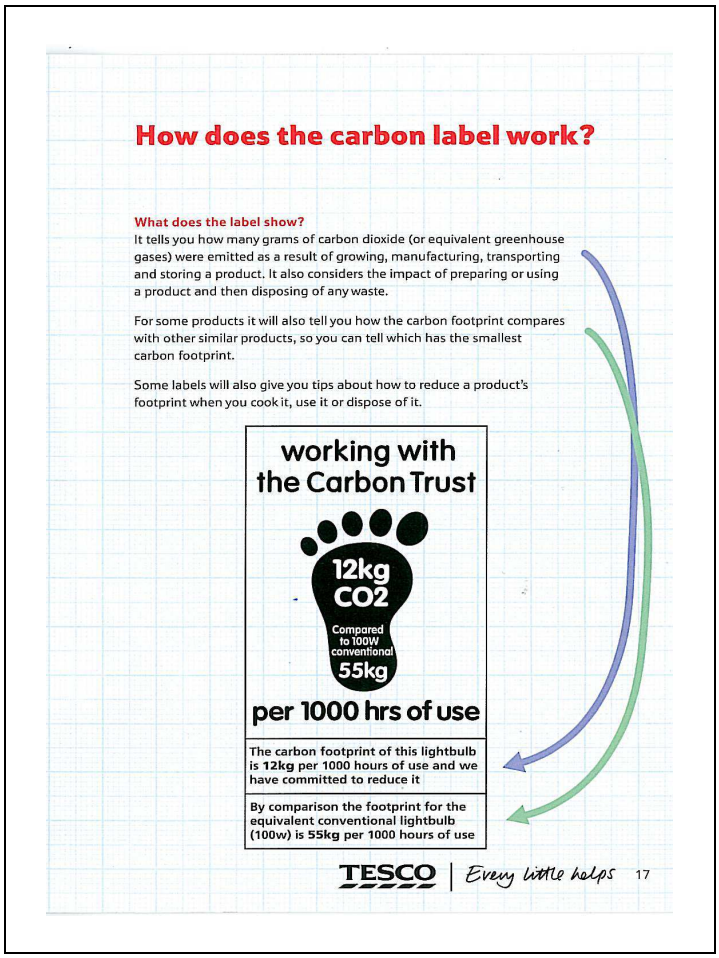


Fig. 2.3: Tesco's carbon footprint label

tatoes, orange juice, washing detergent and light bulbs. We have copied a label from a Tesco brochure below to illustrate the information giving on the light bulb label (see below):

– The label tells that if one uses the light bulb for 1,000 hours, the CO2 emission is estimated at 12 kg. This is the main information on the label. This estimated 12 kg is based upon an LCA

32 The Carbon Trust is the UK's leading authority on carbon reduction, helping business deal with the challenges and opportunities on the road to a low carbon economy. Established by the Government in 2001 as an independent company, Carbon Trust offers consultation to public and private companies, organisations and networks. In close cooperation with business, Carbon Trust works to reduce carbon emissions and develop commercial low carbon technologies.

study where the use-phase is the most important element, and where the energy sources are the crucial factor. (Nuclear and hydro-power will give a different answer to coal and oil).
– The second important information is the benchmarking with conventional 100w light bulbs. Here the CO2 emission is estimated at 55kg, for 1,000 hours of use. Thus, the carbon footprint of the conventional product is 4.5 times higher than the new generation of light bulbs.
– The label also tells us that the company (Tesco) is "working with the Carbon Trust". This is information about the certification process. The estimated CO2 emission is certified by a third party, the Carbon Trust, in cooperation with Defra and British Standards.
– We will also draw your attention to a final piece of information: "12 kg per 1,000 hours of use and we have committed to reduce it". This last sentence tells us about the dynamic perspective of the Carbon Trust. It is not only a goal to measure the CO2 footprint, but also to reduce it.

We all know that in a modern supermarket you can choose between thousands of different products. Tesco will test these four product categories for own-brand product in 2008.[33] However, the retailer has ambitions to expand this label to 70,000 products. This will obviously take time. The carbon footprint is a voluntary label and consumers will need information about the carbon footprint all along the value chain to make the correct calculations. There are reasons to believe that not all producers are willing or able, to follow the visions of Tesco. That is why they have started with their own brand.
Even though the Carbon Trust claims to have solved most of the technical and scientific questions related to the greenhouse gases, there is still work to be done. The certification process is crucial, and if the results are questionable, it opens up a large number of juridical procedures.

Advantages and challenges with the two models

The advantage with the type I model is that it uses a well-known system, and that a new carbon label can be developed within a reasonable deadline. Consumers can easily choose the best products within each category, and studies have shown that consumer trust in such third part labeling systems is relatively high in Nordic countries (TemaNord 2001).
On the other hand, it is not possible to compare CO_2 emissions between product categories. The consumer is allowed to choose the best brands of cheese, milk, carrots, chicken and beef. But he is not able to compare vegetables with meat, and chicken with beef. LCA studies indicate that there are substantially larger differences in CO_2 emissions between product categories than within each category.
For type III, the numerical labels makes it possible to compare between categories, and this is the strength of this approach. On the other hand, the approach is very time consuming for the certifying body, because it is really difficult to calculate the specific CO_2 emission for every product along the value chain. Especially for food products, the CO_2 emission varies from country to country and from season to season. It might also be difficult for consumers to make sense of the quantitative information. Further, consumer trust in the numbers may be a challenge, and uncertainty with the calculation may open the way for juridical disputes.
There is also a question about benchmarking. In the example we used, the "green" light bulbs was benchmarked with conventional products. Is the opposite also possible, that all products will be benchmarked with the best performers in the market? And who decides what is best practice in a

33 By now the Carbon Reduction Label can be found on a wide range of products from different retailers, see http://www.carbon-label.com/product.html (accessed October 20, 2008).

dynamic market? If not, the type III label has strong elements of type I, and only the best products are labelled.

It is also worth noting that both the Tesco carbon footprint and the Swedish KRAV label do not limit their environmental information to the labels alone. Tesco argue for waste reduction in households, recycling, walk to the shop and "look for a carbon label" (Tesco 2008: 14-15).

2.2.6 Conclusions

User awareness is a strategic variable for a desired transition towards sustainable consumption and production. We have introduced and reviewed four policy instruments designed, among other concerns, to influence this awareness. The first instrument is the application of traditional information campaigns, where *One Tonne Less* has developed innovative approaches to engage and involve consumers to reduce their CO_2 emission by one tonne. The second is the employment of labels, where *organic labels* have contributed to increasing production and consumption of organic agriculture products in Europe; not the least via consumers' awareness. Third, we have presented the *Eco Teams,* where user awareness is created in a dialogue with other consumers in the neighbourhood. In addition, we have considered the more specific attempts at developing CO_2 labels for products. We have discussed the advantages and limitations of two different models for including CO_2 emissions in labelling schemes.

At the same time, we believe that we have identified an important limitation to this approach. Even though *One Tonne Less* seems to be an almost "ideal" campaign – a possible future benchmark for similar initiatives – the manifest success seems rather limited after all. We believe that the main constraint is that the framework around consumer behaviour has not changed. Much responsibility is placed on consumers and households, while their degree of freedom is limited.

However, increasing awareness among citizens is also potentially important for changing the political framework. In their role as voters, individuals are able to change political authorities at local and national level. This may have a positive or negative effect on the legal and financial situation for changing consumer behaviour and it might also have an effect on the other actors in the market of consumer goods and services (Vittersø et al. 1998).

Perhaps, the most important conclusion for the sub-theme of increasing user awareness is that the effectiveness of policy instruments is highest when authorities are able to develop and employ a mix of measures. Above, we concluded that the main weakness of the One Tonne Less campaign was that it worked almost exclusively on an awareness level while the "action context" of the citizen/consumer remains the same. Accordingly, the organic labels in Europe are mainly successful if they are combined with economic support to organic farmers and increased social responsibility among retailers and the food industry. This is clearly shown in the Danish organic market. When an information campaign is used in connection with changes in the economic or political framework, they will surely have larger potential for change in the behaviour of consumers and households. For the Eco Teams, constraints are also connected to the often limited possibilities for a greening of lifestyles, even though we have noticed that situations have changed for the better in some consumption areas (like waste handling and the availability of more environmentally friendly products).The effectiveness of the Eco Team will also increase if environmental options are made available, feasible and cheap. A limitation to the effect of the Eco Team is the up scaling. The movement is not able to recruit enough households to influence events on a larger scale. Through the process, however, they gather experience with greening that might be translated into more general policies for sustainable consumption.

This need for measures over the broader picture is why we have argued for the deployment of a combination of policy instruments, here covering the sub-themes of:

– increasing user awareness,
– making sustainable consumption easier, and
– greening of the market.

This broad approach seems to be a precondition for answering the question: *does your country have a general policy for sustainable development?* affirmatively.

2.3 Making Sustainable Consumption Easy

2.3.1 Introduction

The idea of looking at sustainability from the angle of consumption behaviour has been taken up by, e.g., the United Kingdom Department for Environment, Food, and Rural Affairs (Defra).[34] Defra has been one of the frontrunners amongst governments in assessing sustainable consumption from the angle of social marketing theory;[35] in particular, behavioural changes. Defra subscribes to the important distinction between the consumers' awareness on sustainability, and actual changes in their behaviour. Social pressure or higher prices, for example, may prevent green actions.[36]
The Defra research findings imply that the scope for changing consumer behaviour may be understood in terms of increasing consumers' awareness, willingness and/or ability to behave in a sustainable fashion (Defra 2008a: 28-32). These aspects of consumption behaviour seem to correlate well with the three dimensions used in the ASCEE project: *awareness raising*, *making sustainable consumption easy* and *greening of the markets*.
Consumers may be grouped in many ways as a function of their *willingness* and *ability to* act. Policy tools must be tailored to reflect such differences. The purchasing behaviour of the different segments must be understood,[37] because only small shares of consumers usually are the willing and able "positive greens",[38] with the majority remaining less motivated or concerned. With respect to the dimension of making sustainable consumption easy, the emphasis is on the consumers' *ability* aspect. Because people's ability to act correctly is often dependent on external constraints, making sustainable consumption easier is a key mechanism to improving the situation. The consumers' ability to behave sustainably may be increased by expanding the availability of green products. It may also be improved e.g. by removing financial and informational constraints or by alleviating the time demands of greener consumption.[39] On the other hand, if unsustainable consumption is made

34 See Defra (2008a: 20) and Defra (2007).

35 See Defra (2008a) and Barr et al. (2006).

36 For example, OECD (2008) report notes that in many OECD countries, only a minority of people bought energy-efficient house appliances, even if the labels clearly indicated the greener qualities. Indeed, a higher upfront cost was more decisive to consumers' choice than future savings on operating costs.

37 Individual segments may qualify further in terms of their characteristics such as ecological worldview, lifestyle, and sociogeodemicraphics (Defra 2008a: 41-46).

38 In the Defra (2008a) study, for example, just 14 %.

39 The barriers to consumer *willingness* to act properly include, e.g., tightly established habits, scepticism and lack of correct information. Defra (2008a: 7) and Miller (1998).

more difficult or entirely impossible (by removing the option), even the unwilling consumers are made unable to continue their current habits. They end up acting more sustainably, because their ability to do otherwise is removed.

As noted, the dividing line between "awareness raising" and "making sustainable consumption easy" is superfluous. In fact, there is also overlap to "creating green markets", the third ASCEE dimension. Creating a market for a product that did not exist previously, yet that replaces less sustainable consumption, is the ultimate version of the making sustainable consumption easier dimension. Indeed, it makes consumption possible to begin with.

In this section, three case studies on the making sustainable consumption easy dimension – We're in This Together (Together), Topten and Red/Green Calculator – and four other examples – CO_2 household certificates, congestion charges, guiding systems and bonus systems – are presented.

All in all, instruments grouped in the category of making sustainable consumption easy, aim to take consumer behaviour from the level of awareness to that of action, i.e. filling the "value action gap". This may be achieved by creating an environment in which sustainable consumption is mainstreamed into consumers' current lifestyles and by making the sustainable choice easy to implement, practical and financially attractive. The planned policy steps must be incremental and realistic. The tools should also be dynamic to take into account any shifts in purchasing behaviour of the segments over time.

Choice of Cases

The ASCEE team selected the instruments listed below for further elaboration on the basis of literature research as well as recommendations from a number of experts during the first phase of the ASCEE research:

- The Red/Green Calculator: The Red/Green Calculator (R/G Calculator) is an Internet-based, voluntary policy tool that gives retailers and manufacturers a means of assessing the energy efficiency of the electronic products that they procure and sell. The R/G Calculator is innovative in that it appears to be amongst the first tools to concretely translate short- and long-term government targets into technical specifications for electronic products. At the same time, The R/G Calculator leaves the individual retailer ample flexibility to take his business and investment decisions.
- Topten: It is a consumer-oriented online search tool that displays and enables simple comparison of the most energy-efficient products that are available on a range of national markets throughout Europe. Topten tries to mobilise large numbers of consumers, beyond the active "green" consumers, through awareness raising campaigns and through particular emphasis on win-win situations.
- We're in this Together (Together): Together, campaign, is a cooperative approach instrument, where several large retailers, local authorities, government agencies and an NGO work together in order to address climate change issues. The corporate partners offer consumers new, low carbon emission related products or services, at attractive prices.
- CO_2 Household Certificates (Individual carbon trading): They are market-based instruments that derive from earlier experiences with polluting permit schemes. The basic principle is to set a cap to limit all CO_2 emissions from the population, and to divide that cap into polluting rights that are delivered to individual emitters. In this way, unsustainable consumption is made more difficult, while at the same time, behaving sustainably is rewarded.
- Congestion Charges: This tool is an interesting new instrument that has arisen in a local context: cities. Congestion (or traffic) charges are market-based instruments that consist of a charge for incoming vehicles in a particular urban area (centre). Their general aim is to reduce traffic at peak hours in particular, to encourage public transport, and to contribute to infrastructure expenses (e.g. better buses) with the generated income.

– Guiding Systems for Sustainable Consumption: They refer here to marketing activities that promote sustainable products or services at the point of sale (POS). Guiding systems are intended to raise awareness, on the one hand, and to give consumers personal advice at the POS to buy more sustainably, on the other.
– Bonus Systems: Bonus systems are based on the same principles as customer loyalty cards in retail sales. Consumers receive e.g. credit points, or a direct discount at the POS when they use their bonus cards. The systems are used as a means of improving the retailers' relationship with customers by offering them both additional benefits. A Bonus card system links consumption behaviour very clearly to an economic benefit.

The information on the instruments is derived from primary and secondary literature research as well as from telephone and/or face to face interviews with 11 additional experts who are in some way involved in the development, or application, of these instruments. The experts include public authorities, NGO's and retailers.

2.3.2 Red/Green Calculator

The Red/Green Calculator (R/G Calculator) is a voluntary policy instrument that has been developed by the UK Environment Department, Defra. It is an Internet-based[40] tool providing retailers (and manufacturers) with a means of assessing, on a voluntary basis, the energy efficiency of consumer electronic products that they procure and sell, and to compare that with the UK government's targets and standards for sustainable products. The R/G Calculator was designed to support environmental product policy and it has been developed as part of the UK Market Transformation Programme (MTP)[41], a policy support programme, which encourages partnerships between the public administration and a broad range of different stakeholders.

2.3.2.1 Development of the R/G Calculator

Recognising the big impact that the retailing sector can have on consumer decisions, the UK government engaged in a dialogue with major British retailers with regard to implementation of UK product policy; in particular, the energy use of electronic products. The R/G Calculator was devised in response to the retailers' request to simplify the government's targets and the mass of associated technical standards they are asked to comply with.
High-level support both within the UK government and within the major retailers played an important role at the inception of the R/G Calculator and helped to achieve the necessary commitment of procurement managers within the retailers. The Energy Saving Trust, a non-profit organisation funded both by the UK government and the private sector, has also been involved in this initiative. The organisation published Commercial Buyer's Guides promoting the indicative performance standards required to meet the government's targets for energy savings for various energy using products.[42]

40 See www.redgreencalculator.com (accessed October 20, 2008).

41 See www.mtprog.com (accessed October 20, 2008).

42 See http://www.energysavingtrust.org.uk/esr/esr/resources/publications (accessed October 20, 2008).

2.3.2.2 Description of the R/G Calculator

It can be difficult for retailers to keep track of all initiatives related to government product policy and to identify the implications for their business.[43] Furthermore, assessing energy consumption of electronic products includes very technical specifications, that, if outlined in detail, could cover lengthy and complicated lists. Yet, sales and product managers, especially of retailers that offer a broad and diverse range of products, often do not have the necessary background, or the time, to assess every product's technical properties with regard to sustainability. Moreover, these technical product properties might be cumbersome to obtain. Suppliers do not always automatically provide retailers with the information that would be needed to assess relevant sustainability aspects of a given product. Therefore, the R/G Calculator aims to make it easy for retailers to comply with UK policy targets. It enables retailers and manufacturers to assess how their products perform against UK government targets for energy consumption. With this policy instrument, the government intends to stimulate and accelerate a greening of the product range and to make it easier for consumers to make a sustainable choice.

The R/G Calculator is based on the UK's Market Transformation Programme (MTP), which has developed extensive stock models[44] of various product groups on the domestic market. Based on this data, an evidence base representing information on the current and projected environmental impact of a range of products until 2020, has been developed. These scenarios and future projections build the foundation of policies drawn up to improve the different products' environmental performance. The development of technical specifications (i.e. the government indicative standards) for the R/G Calculator requires an extensive amount of data about each product group in question. Therefore, Defra decided to start with energy-using products that use significant amounts of energy at the UK level (and consequently have significant climate change-relevant improvement potential) and for which reliable data is readily available.

The R/G Calculator contains a separate worksheet for each of the consumer electronics products covered, and one summarising spreadsheet bringing together all individual results. Within each worksheet users can insert data for each product they sell. The R/G Calculator then calculates the expected energy consumption of each product over the period of one year. This is then compared to the energy consumption that would be expected of a product meeting the government indicative standard. The difference between the two becomes the so-called 'Ecopoint' score. These Ecopoint scores are tallied to give an overall score for each individual product. This is then multiplied by the number of each individual products sold on an annual basis. Once the users are provided with an Ecopoint score (and corresponding 'red' or 'green' flags) for the individual power modes and product models, they are then given an overall product group Ecopoint score. If the score is negative, (and consequently 'red'), it tells the user that his/her particular range of products does not meet government indicative targets. Conversely, if the score is either zero or positive it tells the user that his/her products either meet or exceed the government indicative standards. These product group scores are then tallied to provide an overall Ecopoint score (and 'red' or 'green' flag) for that user based on all the products he/she sells in that year.

43 A recent report on the government's role in supporting sustainable supermarket food by the UK Sustainable Development Commission identified "lack of clarity on how high level goals translate to retail sector specific priorities" as one major problem hindering the effectiveness of existing policy to deliver a more sustainable food system. (SDC 2008: 36) It appears that this finding also applies to other areas, such as consumer electronic products..

44 These models reflect all products available on the market and in stock throughout the country.

The Ecopoint scores, being numerical, reflect the degree to which products diverge from the government indicative standards. That is, a very negative Ecopoint scores shows that products (or retailers) are a long way off from meeting the government indicative standards. Very positive scores show the converse, whereas an Ecopoint score of zero shows that a particular product (or retailer) meets the government indicative standards exactly. Thus, the R/G Calculator does not only rate products and retailers as being 'Red' or 'Green', but also shows the degree to which government targets are met, exceeded or not achieved. This makes it easy for retailers or manufacturers to understand and identify their own strengths and weaknesses.

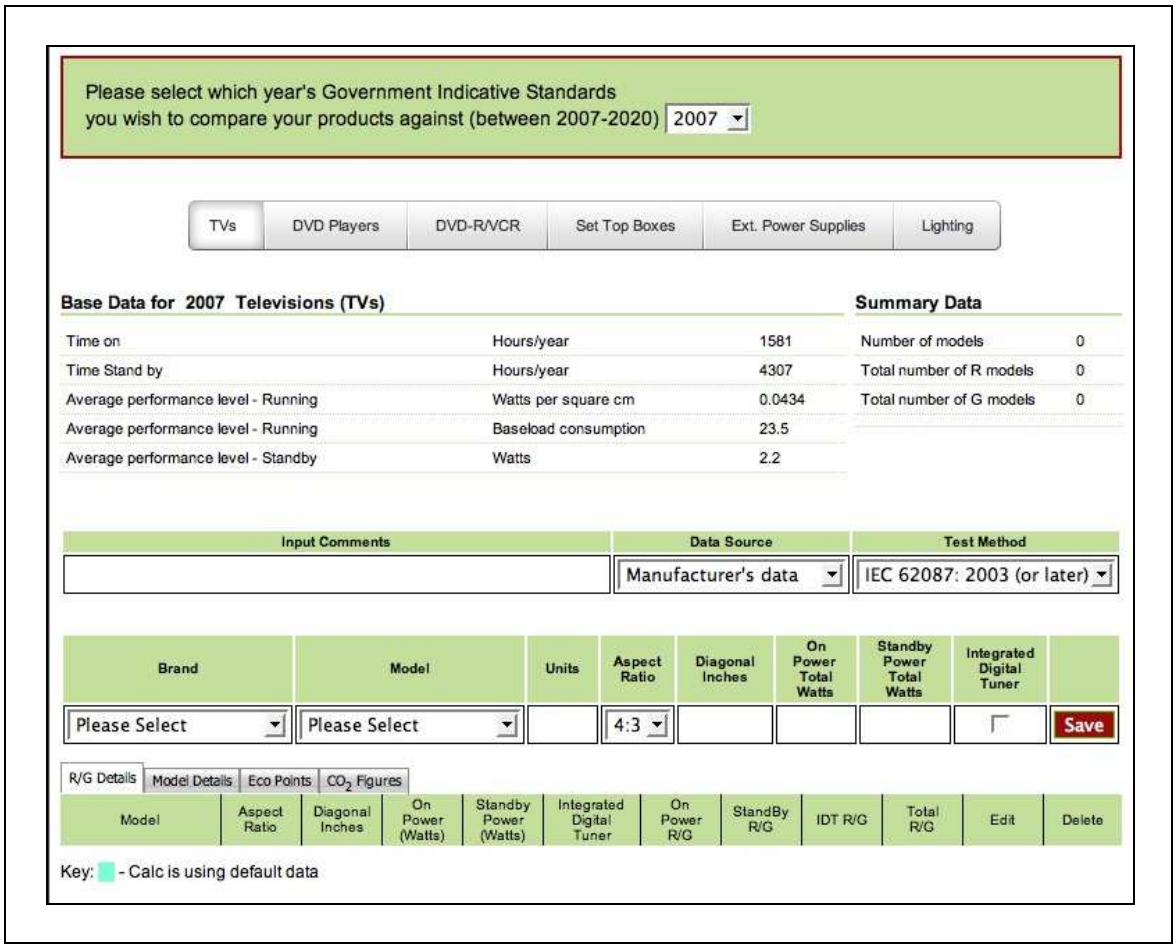


Fig. 2.4: Screenshot of www.redgreencalculator.com presenting an exemplary worksheet for televisions

The R/G Calculator also provides projections of government targets for each year to 2020. The R/G Calculator users can change the year for which they would like to calculate their performance. The increasingly stringent indicative standards provide a projection of the level of energy efficiency performance that products would need to comply with in order to meet future government policy targets. Although these future specifications are only indicative, as government and policy could change, they still give a fairly good impression of the direction in which the government aims to head, and, at what pace. These future projections provide retailers with valuable information to assist them in making informed business decisions, especially in relation to supplier contracts (which could run for several years). In order to provide retailers and manufacturers with (a certain degree of) long-term certainty for their investments, it is seen as being expedient to provide indicative

standards ahead of time. The government indicative standards (both for current and future years) are reviewed on an annual basis, taking account of any new evidence. The R/G Calculator is then updated accordingly.

The R/G Calculator does not rely on any broad, intangible high-level commitments but rather very concrete targets that can be understood and implemented in a rather easy way. It enables the government to translate policy targets into technical specifications. It provides very concrete results as to what requirements users would have to comply with in order to contribute to government targets. Another interesting feature of the R/G Calculator is its dynamic requirements. Unlike labels or many laws, the performance requirements of a 'green' product change over time; becoming increasingly more stringent. This could encourage retailers to gradually and continuously improve the performance of their products rather than having to make radical one-off changes. This gradualism gives the retailer flexibility in managing the transition to becoming 'green' and to establish solid management mechanisms for future improvements. The annual review of the government indicative standards aims to provide a realistic but ambitious reclassification of what is considered to be 'green', without exceeding technical or economic feasibility. Furthermore, the R/G Calculator is very flexible with regard to the means that retailers use to achieve their overall 'green' rating because it is the overall score of products as opposed to strict requirements for every single product that counts. Furthermore, the performance of the market average, the dividing line between 'red' and 'green', is also a criterion for public procurement in the UK. The R/G Calculator can help vendors ensure that they are fulfilling this criterion.

Since its launch in early 2008, the R/G Calculator has been used by over 15 retailers[45], 10 manufacturers[46] and a couple of service providers, energy suppliers and trade associations. Over 72 users registered on the website.[47] Retailers acknowledged that the tool provides useful assistance in understanding government product policy and feeding this into their purchasing decisions. However, it was not deemed useful to feed back data to Defra because of competitiveness concerns and because no further measure based on this data was planned. Given that the R/G Calculator is a voluntary tool, no sanctions or any other government initiative is envisaged to follow.

2.3.2.3 Assessment of the R/G Calculator

Environmental Impacts

The retail sector is in a key position in the supply chain to influence environmental changes in modern societies. It is the link between the production and consumption of goods. "It informs the end-user about product features (…) [and] in its position as purchaser and customer it can dictate the conditions of supply. It works with suppliers to encourage product development and process optimisation." (Sarasin 2006: 5). The R/G Calculator helps retailers to source more efficient products, and manufacturers to anticipate what the retailers will be aiming to procure; thereby influencing the manufacturers' own plans for R&D investment in and production of improved products. And, on the other end of the supply chain, retailers also influence consumers' decisions by offering more energy efficient products in their portfolio; making it easier for consumers to make sustainable choices. (NCC 2006: 1-2). It is therefore expected that the R/G Calculator could have a significant

45 9 generalist retailers, 3 retailers specialising in electrical and electronic appliances and 3 retailers specialising in home/DIY.

46 2/3 of which were consumer electronics manufacturers and the rest lighting equipment manufacturers.

47 This does not reflect the number of organisations using the tool since in some cases several individuals from one company registered.

impact in contributing to more sustainable consumption by giving retailers a tool with which they can request more efficient products from their suppliers. This will then lead to an improved product range on the retailing shelves that shapes the offer towards phasing out bad performing products and leaving the consumer with a choice between good and even better products.
However, at this point in time, no statement about the certainty of achieving the assumed energy savings can be made. After all, the R/G Calculator is a voluntary tool and therefore depends on the willingness of retailers to cooperate. They could potentially choose only to comply with the minimum requirements as laid down in the law. However, major retailers have shown a generally positive attitude towards the R/G Calculator. Retailers' willingness to improve their own sustainability performance and to contribute to influencing consumer decisions is also shown by surveys of the UK National Consumer Council (NCC). Comparing a survey from 2006 with a 2007 survey illustrates that environmental issues have risen on the retailer agenda (NCC 2007: 1-2, 27).[48] A recent report by the Sustainable Development Commission on policy supporting sustainable supermarket food also identified a number of ambitious sustainability initiatives by retailers. But, at the same time, it found evidence for high levels of cynicism by consumers about retailers' motives for improving their sustainability; being purely for PR purposes and to pre-empt legislation. (SDC 2008: 34)
Thus, most of the ambitious initiatives of many of the retailers are very recent and still have to prove their successful impact in accelerating changes in sustainable product offers.
Some retailers also appear very receptive and supportive of the use of spreadsheets when communicating with suppliers in order to receive extensive environmental product data. The US retailer Walmart, for example, recently introduced a packaging scorecard, which measures the sustainability of its suppliers. It plans a similar scorecard for electronic products. Suppliers receive scores in different sustainability categories and are rated in comparison to their competitors.[49] UK retailers indicated that the R/G Calculator was useful in a similar way. It provides them with a sound knowledge base about feasible and required technical specifications for their negotiations with suppliers. This supports the assumption that the R/G Calculator responds to a real need for an effective communication tool between retailers and their suppliers.
In conclusion, there is significant evidence that the R/G Calculator can have a great positive environmental impact by inciting retailers to shift to more sustainable product offers. However, there are some uncertainties that could potentially hamper positive developments.

Economic Impacts

The R/G Calculator allows retailers to assess their own sustainability performance. The projection of indicative future specifications and government targets enable retailers to prepare themselves early for complying with these targets and to develop farsighted business strategies. Through the ambitious targets of the R/G Calculator, retailers could gain a competitive advantage over other retailers, because, on the one hand, their image and consumer's perception improves. On the other hand, the 'green' retailer anticipates possible compulsory measures phasing out certain products and thereby avoids expensive imposed short-term changes in their product range, since they have this already integrated these changes in their long-term business strategy. For the same reasons, the R/G Calculator could also help UK retailers gain a competitive advantage in foreign markets. One example for such a development is a major multinational retailer that adopted the require-

48 See also chapter 3.3.

49 See http://www.environmentalleader.com/2007/03/13/wal-mart-plans-to-rate-sustainability-of-electronics/ (accessed October 20, 2008).

ments of a EU Directive restricting the use of hazardous substances in electronics[50] globally, although the requirements were only applicable in the EU. This initiative was used for marketing and PR purposes to distinguish the retailer from its competitors.

Social Impacts

The social impact of the R/G Calculator within its current scope appears marginal. The R/G Calculator will accelerate the change towards a more 'green' product portfolio on retailers' shelves. A price increase, and thereby a disadvantage for poor citizens, is not expected, as economies of scale seem likely to bring down prices for the more efficient products.

2.3.2.4 Barriers to Success

The voluntary character of the tool implies that its success largely depends on its usefulness to retailers, manufacturers and potentially other interested parties making procurement decisions. The UK Government efforts will only fall on fruitful grounds if the retailing sector is convinced of the benefits the R/G Calculator can bring and cooperates in the initiative. Hence, commitment by retailers is very important. Retailers need to be fully convinced of the value added to their business operations by the R/G Calculator if they are to implement it, since there is no compulsory element. It also appears crucial to have top management support for retailers' participation in the R/G Calculator.

Developing a R/G Calculator is only possible on the basis of a solid set of market data in the targeted product group. As the dividing line between 'red' and 'green' products is calculated from the performance of all relevant products on the market, extensive models of product performance information are a prerequisite for this tool. The collection of data and the development of models are a complex and demanding undertaking. In the UK, the data is taken from the Market Transformation Programme, a cooperative programme between the government, industry and other stakeholders. Industry provides relevant data and possible policy solutions to various environmental problems are discussed. Industry has to be cooperative and trusted by the government as a precondition for this data gathering exercise. Furthermore, it would be difficult to justify such a data collection effort for the sole purpose of developing a R/G Calculator.

2.3.2.5 Innovativeness and Transferability of the R/G Calculator

It currently appears that there are no other policy tools akin to the R/G Calculator either in the UK or in any other country. One innovative aspect is, in contrast to green labelling, that the R/G Calculator does not rely on absolute criteria. It is based on relative specifications and on dynamic requirements. Many conventional voluntary policy instruments use fixed requirements that are not regularly adjusted to reflect technological progress. The adjustment process of fixed requirements is slower, more cumbersome and less frequent than the R/G Calculator's yearly revision of standards. Another innovative aspect of the R/G Calculator is the inclusion of future standards. Within the scope of the MTP, the R/G Calculator also acts as a bridge between long-term and short-term policy goals.

The R/G Calculator could be expanded to other product groups and include other environmental impacts beyond energy consumption during the use phase of the product or some recyclability criteria. Defra has already started developing a similar tool for lighting products and is currently working on the inclusion of water-using products into the scope. However as mentioned above, the ad-

50 Restriction of Hazardous Substances in electrical and Electronic Equipment Directive (2002/95/EC).

dition of other products and impact areas is highly dependant on the availability and quality of market data. A solid evidence base is needed to construct models forming the basis for defining current and future government indicative standards. For products such as food, it might be too difficult, or even impossible, to design a R/G Calculator because it is much more complex to capture the environmentally relevant aspects of these products.
The principle of the R/G Calculator could be transferred to any other country. However, the success of any transfer would be highly dependent on the availability of market data for the products sold in the respective country. Other countries would need to have, or gather, a large database of product information for their own markets. Once this precondition is satisfied, they could develop their own current and future product targets and develop a R/G Calculator on that basis.
Other aspects that should be taken into account when discussing the potential transfer of the R/G Calculator to other countries are the different cultures and consumer awareness of environmental issues. In the UK today, there is a good degree of consumer awareness around environmental and climate change issues. With such a consumer mindset present, retailers can see the benefit in providing products with lower environmental impacts. This same consumer awareness could also translate into public pressure to influence retailers towards stocking products with lower environmental impacts. In a society with lower levels of consumer awareness around environmental and climate change issues, it is likely that the R/G Calculator would not be as well received by retailers as it has been in the UK.

2.3.2.6 Conclusion

The R/G Calculator is an innovative and pragmatic policy tool that could have great potential to increase the energy efficiency of consumer electronics (and other products in the future). By making use of the retail sector's key role in influencing consumer and manufacturer decisions, it could accelerate the shift towards more sustainable electronics on the market.
The tool was only launched in spring 2008. Consequently, it is still in an early phase of its development. But, it could be expanded to include other aspects of environmental sustainability such as water consumption, as well as perhaps including social aspects (providing that relevant and accurate data is readily available). It could also be expanded to other product groups such as lighting. However, there are limits as to the feasibility since some products groups, such as food, are too complex to enable environmentally relevant aspects to be captured.

2.3.3 Topten

Topten is a consumer-oriented online search tool that displays and enables simple comparison of the most energy-efficient products available in a range of national markets throughout Europe. It seeks to minimise environmental impacts of specific product groups and facilitates educated consumer choice. It thus contributes to making sustainable consumption easy. Present on a growing range of national markets, it currently mainly addresses energy-using household appliances. The Topten websites provide easily accessible and updated information to consumers, in the form of rankings of the ten best performing products within a defined product group.
Ancillary activities performed by Topten, and considered as active components of the initiative, include technical assessment of available products, market monitoring and research, awareness raising through non-web media communication, collaboration with economic and other societal partners, advising of large buyers and involvement in support for public and private procurement activities, and lobbying for the implementation of stronger regulation and policy tools. On the websites, the core service provided is product ranking, but Topten also delivers practical user information, simple energy-saving tips (e.g. responsible use of lighting), recommendations and market

analyses for relevant products and thorough description of selection criteria. Topten is a non-governmentally run initiative benefiting from active and substantial governmental support.

2.3.3.1 Development of Topten

Topten was launched in 2000 by the Swiss Agency for efficient energy use (SAFE). The idea of Topten originated from the identification of a lack of simple, comprehensive information for potential active consumers to make environmentally sound purchasing choices. Once the website was in place and had demonstrated its potential, further funding opportunities and partnerships were made possible, namely through WWF and Swiss regional and national institutions, as Topten was seen to contribute to the achievement of existing policy goals. The website has since then been improved, integrating more product groups and partners, but most of all, the success in Switzerland paved the way for further developments: the launch of other national websites and the diversification of activities. Following the Swiss success, the initiative began to spread throughout Europe. Indeed, this spurred the mobilisation of similar structures, starting in France (2004) and Austria (2005). By the end of 2006, seven national websites were online, and today, there are Topten websites in 13 different countries, each of them tailored to the respective national market.
In addition to the national websites, Euro-Topten, the overarching European-wide website, was launched in 2006. It seeks the cooperation of various national initiatives, further pushing the benchmarking of product performances across national borders (www.topten.info). The “Best of Europe” products are displayed, and national markets where the best products are available are pointed out. For a limited range of products, the national databases are merged, allowing for the selection of the ten “best” European products by category, including information on their market availability by country.[51] The various national websites, where national product ratings as well as additional information are presented, can be accessed via this main portal.

2.3.3.2 Description of the Topten

Through product comparison, the Topten project aims at sparking changes from the different players in the market (e.g. producers, retailers, consumers, labelling organisations), thus allowing market penetration of high environmental performance products. A major objective is “facilitating Swiss consumers' life, by listing on-line best products, their price, functions, and pictures”,[52] i.e. making sustainable consumption easier for the consumer.
At a different level, Topten strives to affect environmental policy design through the demand-side induced shift of minimal efficiency requirements, as well as through the formulation of recommendations and lobbying for more stringent policy. This goal is particularly emphasised within the Euro-Topten network.
Providing third-party (e.g. “independent”, transparent) information is believed to potentially affect values towards increased environmental responsibility. As such, consumers gain access to simple, comprehensive, at a “one- or two-click reach”, indication of which products are, from an environmental point of view, preferable to purchase. By doing so, consumers emit additional signals to the upstream actors of the supply chain (retailers and manufacturers). Reaching and mobilising a “criti-

51 The visitor may thus end up with only two products to select from in his country, and recognize the relative poorness of the national offer in top-performing products.

52 Bush et al (2007). The goal stated here has been extracted from a Swiss document, but remains valid for all Topten national websites.

cal mass" of consumers – beyond the readily "green" consumers – is a crucial challenge in order to achieve a shift of the market. For these reasons, communication activities and user-friendliness of the interface are seen as being of major importance to the success of the initiative. Besides the internet-based platform, Topten uses the different media, such as printed and audio media, and public campaigning for diffusing information and for reaching consumers' attention. The organisers of Topten rely on, and consider visibility, as a prime indicator of success.

Topten products are displayed in the form of rankings of the 10 best performing products in terms of energy efficiency according to a set of criteria (see below)[53] within defined product groups (e.g. refrigerators, washing machines, dryers, energy saving lamps).

The website users can also navigate and compare the products according to other parameters (e.g. size or price). However they are assured that this comparison is conducted among the "top ten" products available on the national market. The screenshot below shows how the information is displayed on www.topten.info (see Fig. 2.5).

The different types of products subject to ranking vary from one website to another. The differences in content, and in product ranges, addressed by the different websites can be partly explained by the launches of the websites at varying points in time.[54] Moreover, as the projects are still relatively autonomous (although coordinated by Euro-Topten), there is scope for different levels and capacity of ambition and/or investment (in terms of financing, time, and effort).[55]

The exact methodology for product evaluation varies according to the product type. However, the evaluation process is kept transparent. The selection (and exclusion[56]) criteria are presented online, along with information concerning data sources. Energy consumption indexes – referring to the using phase – constitute the dominant criteria for ranking. Additionally, environmental criteria such as water consumption and noise, economic criteria such as price, and product specifications such as dimension are available. Interestingly, the default indicator for ranking may vary according to the website.

53 Depending on the product type, website, offer and selection criteria, the number of products displayed can however vary. Information relative to these choices is available online for each product type.

54 Cultural differences and the resulting consumer characteristics differing from one national setting to another are not considered here. They however greatly determine the scope and effects of such an initiative.

55 The creation of national websites differ in their histories, as they may have emerged from scratch or built up from existing initiatives integrating the Topten idea. Thus the pre-existence of similar structures before implementation of Topten may be seen as both a barrier, but also an opportunity for its diffusion. Furthermore, the temporary simultaneous existence of similar initiatives and the resulting competition may be seen as both a threat and a factor of improvement.

56 For some products types, Topten doesn't even consider products under a certain performance level. For instance, only class A++ refrigerators according to the EU energy label are displayed.

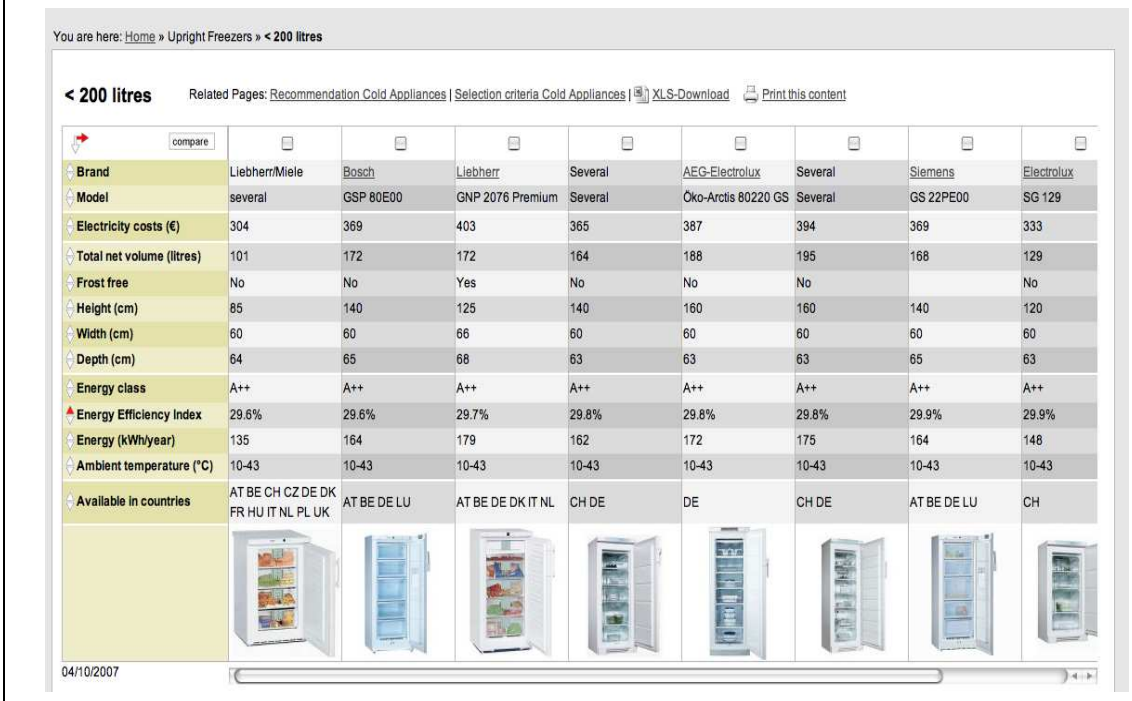


Fig. 2.5: Screenshot of www.topten.info presenting "Best of Europe" chest freezers of a capacity of less than 200 litres

Product evaluations take place on a 6-monthly basis. Twice a year, all product groups are re-assessed. This usually translates into changes in the selection of the 10 best available products. Furthermore, new products can be added as soon as the necessary information is provided. This gives the website a dynamic feature; translating the rapid changes in the market, and enhancing constant improvement in the production and retail of top-performance products.

Professional procurement

Topten promotes the use of online product selection not only for individual customers, but also for large buyers and other "multipliers".[57] For instance, since 2003, the City of Zurich has made a commitment to systematically buy from the Topten selection whenever possible, and consults with the Topten advisory team on how to conduct their purchases.[58]

57 "Multipliers" are key persons and professional groups who may influence consumers directly if provided with the appropriate training and incentives. Examples include experts, architects, and installers. These professions are already involved in a direct relation with consumers and their choices. They are thus seen as key targets for sustainable consumption.

58 For more details on the experience with the City of Zurich, see Rüdenauer et al. (2007a, 2007b).

Fig. 2.6: Topten's product portfolio
(www.topten.info)

2.3.3.3 Assessment of Topten

The present assessment is centred on the Swiss case (effective since 2000) and Euro-Topten, thus providing material for the two implementation levels of the case presented: the national and multi-national contexts.

Factors of Success

Wherever launched, a Topten initiative requires support structures such as funding, national administration involvement and support, and local technical expertise. However, in practice, these conditions vary from country to country. The comparison of national Topten projects provides useful insight to the various forms that such an initiative can take.

The success/failure of such initiatives is grounded on a set of local conditions; some of which are seen as necessary, while others rather contribute to additional success. Among others, such conditions include:

- Necessary pre-requisites:
  - The existence of recognised labelling and/or certification structures[59] that provide reliable data for the product group(s) in question. Topten has limited scope for action, and accordingly limited resources for conducting product performance tests.
  - In terms of a legal framework, producers have to be subjected to strict, harmonised, product declaration requirements (in this case, energy consumption mainly), providing a reliable technical information basis for performance assessment.
  - Collaboration with reliable third-party testing and verification organisations.
- Conditions that contribute to the success:
- The cross-national harmonisation of product declarations and labels is highly recommended if national markets are to be efficiently benchmarked (cf. "Best of Europe" or "Best of the world").
- In some cases, the existence of third-party agents providing centralised information in the form of databases (e.g. Encodex[60]).

59 Certification structures are mainly organisms, such as ISO, that allow systematic (environmental) quality verification and improvement in firms. Amongst others, they provide opportunities for the firm-level centralisation of information and its eventual publication.

60 ENCODEX is an international provider of standardised product information for technical consumer goods. The ENCODEX data base contains detailed technical features for all market active and new models including product descriptions and images. (http://www.gfkrt.com/products_services/encodex/index.en.html).

- The credibility, neutrality and independence of Topten is crucial if the initiative is to mobilise and inform consumers, and especially large buyers, at a sustained pace.
- Transparency is key: Presenting the evaluation process and the selection criteria on the websites enhances the credibility of the information and hence consumer trust.
- A good environment for collaboration between the many actors involved may contribute to the success of Topten. Additionally, the multiplication of collaborative activities may strengthen the credibility of the initiative.61
- The attractiveness of the website, its ease of use and frequent updating further contribute to addressing a larger set of consumers.

Environmental Impacts

The environmental effectiveness of Topten is subject to uncertainties, namely those concerning:

- The consumption model put forward by Topten, that of a concerned, responsible consumer, performing purchases in a 2-step fashion (online planning and selection, then purchase), requires a certain degree of willingness and awareness from the consumer. Whether this practice can diffuse from a small segment of active consumers to a critical mass is uncertain.
- The reaction of the manufacturers, in terms of engaging in competition for more efficient products and subsequent development of the offer as a result of Topten.
- The uptake of information, claims and policy recommendations of Euro-Topten by policy makers.

These sources of uncertainty can be seen as emanating from the voluntary aspect of the scheme. However, efforts made on transparency and a highly dynamic evaluation process (6-monthly update, very sensitive), as well as formal aspects of the online tool (clarity, ease-of-use) increase the legitimacy of Topten, and reinforce its effectiveness. Additionally, Topten's engagement in professional and public procurement and other parallel activities contribute to reinforcing its main informational activities.

Since the introduction of Topten in Switzerland, the offer of high-performance products has increased (Bush et al. 2007). It is however not possible to draw any clear causal relation to the introduction of the tool without further investigation.

In sum, Topten's main function of dynamic product assessment on the basis of energy efficiency and the communication thereof is achieved in a transparent fashion. Its actual environmental effects on consumer behaviour and the induced change in consumption patterns are subject to uncertainties, due to the voluntary nature of the instrument. Euro-Topten claims the need for stringent complementary regulation and standards.

Economic Impacts

Topten affects markets on the basis of environmental performance and the communication thereof. A central idea of Topten is to target the environmental "first-movers" in the industry, moving ahead of existing legislation identified on the different websites. Topten attempts to promote this market segment, and to drive other players of the industry to engage in the competition for top environmental performance products.

Topten does not impose major additional costs upon governments, industry, or the consumer. The initiative itself requires funding, which is currently provided through governmental and associative financial channels. Consumers are expected to benefit financially from Topten, as their attention is drawn to long-term economic gains from the purchase of high-efficiency products.

61 This has been the case with the involvement of actors such as the City of Zurich with Topten.ch.

Social Impacts

Topten is not expected to have any large social impact.

Topten involves the public through awareness raising and dissemination activities via a wide range of media. Besides product ranking, online visitors are provided with tips and recommendations for efficient product use and choices. Topten, hence serves an educative function; contributing to the progressive integration of sustainable choices across society.

Political Effectiveness

The voluntary informational quality of the tool, and the striving for transparency contribute to the political acceptability of Topten. Indeed, Topten points to those products that are assessed as being the top-performance products available in national markets, on the basis of transparent criteria. The service provided is not controversial, and rather contributes to existing policy goals (promoting the shift towards more energy efficient appliances). Its third-party steering and independent assessment (avoiding binding contracts with the industry; its origin in the civil society) serves Topten's political credibility. No infringement with EU and international law could be identified, as the product rankings appear transparent and non-discriminatory.

Euro-Topten highlights identified policy needs, in particular the development of complementary and harmonised tools to promote energy efficiency of household appliances in an integrated fashion.

2.3.3.4 Barriers to Success

The barriers to success in preparation and installation of a Topten system are different from those in its current use.

Phase 1: Preparation and setting up of a Topten

Resources to set up

The laborious work to be achieved prior to the effective launch of a Topten initiative has also been identified as a barrier encountered. Indeed, no less than three years have been necessary before the launch of both the Swiss and the German websites. More recent projects may however benefit from mutual learning on this aspect.

Discontent of some manufacturers

Topten's core business and objective is to make sustainable consumption easy and thus create the conditions for market penetration of high performance products. When influencing markets, it is hard to have only friends. Indeed, while front-running manufacturers try to keep up with the shifting performance requirements through innovative design, laggards tend to be opposed to initiatives that shed light on environmental performance. As a result, Topten has been involved in discussions with industry associations. These are bound to represent all of their members. Topten deliberately only presents top-performing products, thus reducing this barrier.

Phase 2: Running Topten

Competing initiatives

Similar initiatives, run by different organisations are also sprawling. This is a clear barrier to further diffusion of Topten across countries, and also to mobilisation of consumers on national markets. In

Germany for instance, four similar initiatives have been competing. Only with strong institutional support[62] has the German EcoTopten succeeded in drawing major attention.

Reaching a critical mass

As the tool is mainly web-based and a voluntary information instrument, it is likely only to reach already motivated or aware consumers. Because the segment of aware and motivated consumers are only a minority of the population, the impact of Topten risks remaining low. Topten conducts non-web based information and awareness raising campaigns to some degree. It has engaged in dialogues with governments in order to reach a larger consumer group.

2.3.3.5 Innovativeness and Transferability of Topten

Public information websites for “green” products are relatively common but usually address a very specialised public (the so-called active “green” consumer). Topten tries to mobilise larger numbers of consumers, beyond these active “green” consumers. It does this through awareness raising campaigns and through particular emphasis on win-win situations, in order to attract those consumers who would like to reduce their electricity bills (i.e. highlighting the economic gains, in terms of reduced electricity costs, throughout the lifetime of energy efficient products).
The Topten initiative can be seen as particularly innovative insofar as it:

- Presents comprehensive rankings, synthesises complex information for the consumers to make the “right” choice, but requires very little information seeking on their part (thus making sustainable consumption easy),
- puts the accent on keeping the databases systematically updated (bi-annually), thus enabling dynamic market evolution features, as opposed to product labels,
- puts the accent on transparency and flexibility of evaluation methods,
- attempts to take environmental impact, annual overall costs and high quality into account, instead of merely comparing the purchase price (see Graulich 2006),
- seeks the construction of a European and large international network of national information websites. The formation of new national initiatives is highly encouraged (and transfer/diffusion has proven to be effective so far), and
- is supportive of the idea of “EU consumers” and a common European marketplace.

Topten initiatives, as of now, mainly focus on energy-using products. This can be explained by the relative clarity with respect to evaluation methodologies for these products. As shown by the wide range of products covered by the most advanced national websites (see Table 1 above), there remains room for more complete market surveys of these products. Some websites also evaluate a range of water-intensive products (e.g. washing-machines and dish-washers). Yet, when adding new products, it is crucial to define objective key criteria for the respective product group.
The display of services such as restaurants and hotels on Topten websites is therefore questionable in terms of legitimacy of assessment, and may hinder the present success.
The recent transfer of the initiative to multiple new countries is supportive of the diffusion potential of Topten.[63] The Topten International Group (TIG) association was founded to launch, support and

62 E.g. from public funding and other incentives.

63 At the end of 2008, 13 national websites are online.

coordinate national Topten projects and it claims Topten to be “an open platform, [as] new countries can join at any time, as facilitated by the (TIG) initiative”.[64] The relative differences in terms of success of the various initiatives, however, point out some practical difficulties in terms of transfer. The initiative has been found to be easier to implement in countries (such as Switzerland), where the general public is interested in environmental questions and concerned about their personal environmental impact. Less successful initiatives can also be explained by differences in project management. This latter aspect could be overcome through effective harmonisation and collaboration via TIG. Effective transfer throughout Europe is thought to be reliant on the existence of transnational structures, especially harmonised product declarations.

2.3.3.6 Conclusions

Topten might well contribute to “making sustainable consumption easy” in effective ways. Topten is mostly consumer-oriented. Initiatives such as Topten, combined with the appropriate policy tools (e.g. effective, reliable, labelling and product declaration schemes[65], revision of labels and minimum efficiency requirements), may provide one solution to sustainable consumption, provided that there are consumer and supply-side responses to online information provision. The instrument may signal businesses and influence their product range and promote innovation as long as the response of consumers is recognisable.

Most Topten initiatives have succeeded in providing clear, up-to-date information, pointing out the most energy efficient products. Simplicity, consumer-friendliness and the stress on economic gains for the consumer are considered of major importance in order to reach the largest audience possible. The information is however restricted to the web, thus implying planned purchases in two steps, and requiring access to the Internet.

Some methodological aspects of Topten may be subject to criticism (e.g. not addressing the three dimensions of sustainability and not considering the whole life cycles of products), but are transparent and well informed. There are limitations to this approach, but its flexibility (especially its dynamic features, and the aim of constant improvement of assessment criteria) is promising, especially insofar as it could progressively integrate a growing set of criteria and proves very adaptive to fast moving markets.

The diffusion of the initiative throughout European countries has so far been rather successful, although it is too early to draw conclusions. Further transfer efforts may face significant barriers that could be overcome by strong cooperation among national initiatives, and with the harmonisation of European legal frameworks. Topten has already engaged in the policy debate, contributing to the advocacy for more stringent regulation (e.g. revision of established standards).

2.3.4 We’re in this Together

We’re in this Together (Together) is a campaign and a cooperative approach instrument, based on the voluntary commitment of companies and the general public with the aim of reducing the carbon footprint of the UK and making sustainable consumption the natural choice for consumers. Collaborating together under the name of: “We’re in this Together”, several retailers and local authorities provide consumers with low-carbon emitting products and/or services at special prices. The prod-

64 Euro-Topten: project description and analysis, available online at http://www.Topten.info/index.php?page=long_description.

65 We deliberately do not engage in controversies regarding the reliability of labelling schemes.

uct scope varies from green car insurances to insulation and energy saving light bulbs. The campaign has a website where all the partners, products and services are described, along with other practical information. The campaign is kept visible through the partners' initiatives as well as the campaigns online and offline activities. Thus, the campaign ensures that consumers have information and access to sustainable products at a good price, making it easier to purchase sustainably.

2.3.4.1 Development of We're in this Together

Together is initiated and supported by the UK government and run and managed by The Climate Group, an independent non-profit NGO founded in 2004 by companies and governments[66] based in the UK, USA, China and Australia.[67] The campaign is currently a 3-year programme (with the possibility of extension). Instigated in April 2007 in the UK, the Together campaign has recently been launched in the United States, as well as in Australia.

The Together campaign is an offspring of several studies and strategic planning by, and for, the government. An important impetus for the programme was former Prime Minister Tony Blair's interest in the topic. His office organised a series of meetings with companies and other stakeholders. These played a crucial role in incubation of this environmental initiative.

In 2006, the British National Consumer Council[68] and the Sustainable Development Commission[69] published a report on the work of The Sustainable Consumption Roundtable[70] called "I will if you will." (SDC and NCC 2006a). The results of this report revealed that many consumers wished to purchase in a more sustainable way, but there are a number of barriers to taking action, such as, lack of information, confusing information and a sense that one person acting alone would not make a difference. One important conclusion of the report is that the individual consumer is more likely to take action if the government and business are involved and take action in helping the consumer make sustainable choices. The Climate Group also conducted a quantitative study on the issue called "Serving the Climate-Change-Conscious Consumer" and reached similar results.[71] Hence, the main starting point for designing the Together project was to act upon the fact that consumers are concerned, but that their concern is not activated and not reflected in their behaviour. The Climate Group, the UK government and the companies that were already involved from the beginning in the initiative, defined the strategy for Together.

Key elements of the campaign are

– cooperation of different organisations,

66 Members of the Climate Group: CORPORATE: ABN Amro, AIG, Alcan Inc, Allianz Group, Arup, Baker & McKenzie, Barclays PLC, Bloomberg, BP, BSkyB, BT, Catalyst, Cheyne Capital Management, Duke Energy, Google, HDR, HSBC Holdings, Interface, Johnson & Johnson, JPMorgan Chase & Co., Man Group, Marks & Spencer, Munich Re Group, MWH, News Corporation, Pratt Industries, Starbucks, Swire, Swiss Re, Tesco, Timberland, Virgin, MUNICIPAL GOVERNMENT: Greater London Authority, New York City, REGIONAL GOVERNMENT: California, Connecticut, Maine, Manitoba, Massachusetts, New York State, Ontario, Quebec, South Australia, Victoria.

67 The Climate Group.

68 A non-Departmental Public Body, funded by government (National Consumer Council).

69 The government's independent advisory body on SD (Sustainable Development Commission).

70 A joint initiative between the Sustainable Development Commission and the NCC funded by Defra and DTI (Department of Trade and Industry).

71 The main cause of non-action was reportedly customer confusion, different messages, and a feeling of playing such a miniscule role that action would be without effect (The Climate Group (2006)).

– highlighting practical ways to make sustainable consumption easy and attractive for the consumer,
– helping the individual to take action, and
– generally, to put climate change into the spotlight.

A clear goal from the starting point was to focus on large, high profile partners that would have the greatest potential to reach consumers on a large enough scale. All the participating companies are considered a major brand in the UK.

2.3.4.2 Description of Together

The emphasis of Together is to provide environmentally sound offers that are at the same time appealing to consumers. In this way, sustainable consumption is made easy, fun and financially attractive for the individual. This can directly affect consumer behaviour. Additional features include providing information, increasing public awareness and creating opportunities to boost the market of sustainable products.

The target of the campaign is to reduce household CO_2 emissions and greening the market. More specifically, according to the Climate Group's spokesperson, the high level goal of the campaign is: "To encourage every household in UK to save a ton of CO_2 emissions yearly." As there are around 24 million households in the UK[72], the potential reduction of CO_2 emissions would be around 24 million tons of CO_2. The average household in the UK emits around 6.5 tons of CO_2 annually. Thus, the reduction would be significant.[73] In addition to changing the behaviour of consumers and reducing their carbon footprint in the UK, encouraging companies to become greener is an important objective.

Currently, 10 corporate partners participate, all of which have one or more sustainable products or services on offer for the consumer at a special rate and who fulfil the criteria set for participation. These companies are acting under the organisation of the Climate Group and the UK public administration.[74]

72 BBC News, Tuesday, 21 February 2006 (http://news.bbc.co.uk/2/hi/uk_news/4733330.stm#graphic, accessed November 3, 2008).

73 Based on statistics from Defra of 2006, the total CO2 emissions of the UK are around 532 million tons annually, and out of this number, around 29% is derived from domestic activities (excluding transport) (Defra 2008b).

74 Together has additional partners who do not contribute directly with a new low-carbon product, but in different ways: Business in the Community, Church of England, Coca-Cola, Man Group, MySpace, National Express, The Government's Act on CO2 Campaign, The HSBC Climate Partnership, The National Trust, WRAP, WWF (www.together.com).

Tab. 2.1: List of participating companies
(extraction from www.together.com)

Company name	Type	Specific action for Together
B &Q	Home Improvement, insulation etc.	Changing offers; discounts on home insulation, free home assessment, specialised advice and online calculator to help the consumer decide on insulation.
Barclaycard	A part of Barclays bank	Barclaycard Breathe, credit card made of environmentally friendly material. It has lower interest rates on selected green spending (e.g. public transport), special offers on environmentally friendly products and services, 50% of profit after tax is donated to carbon reduction projects – minimum of £1 million yearly.
British Gas	Energy supplier	Providing a free household energy efficiency audit. Launching “zero carbon” new green energy tariff with very high environmental benefits.
More Than	Insurance company	Providing discounted insurance on green cars. Offsetting the first 3.000 miles of drivers choosing More Than insurances.
O2	Telecommunication	Giving financial incentives to customers that keep their handset when renewing contracts. Donations given for every phone brought back for recycling
Sky	Media Company	Developing a set top box that automatically switches into standby overnight. Providing increased coverage on climate change issues, web based guidelines on energy saving and the Sky carbon calculator.
Tesco	Retailer	Selling energy saving light bulbs at a special price; ensuring a broad range and availability in every Tesco store.
The Mayor of London	City	Leading a number of high profile initiatives on reducing emissions, one being the Planet DIY campaign. Providing Londoners with a free DIY Planet Repairs Toolkit, including advice and practical solutions for reducing energy use.
Marks & Spencer	Retailer	Encouraging customers to wash laundry at lower temperatures with the cloth label “Think climate – wash at 30℃.” Opening an eco-store in Bournemouth. Selling Eco-kettles.
Energy Savings Trust	A non-profit organisation	Making a directory, listing all the most energy efficient products by category. Creating assessment methods for campaign and providing technical assistance to other partners

The Together campaign runs a regularly updated website with general information on climate change, ‘easy to do’ tips, information on partners’ offers and a calculator showing how much carbon has been saved through the campaign. The information is put forward in a clear and easily understandable language, and to ensure transparency, the requirement of partners for inclusion in the campaign is stated online, and the ‘carbon saved’ calculator briefly explained. Additionally, an online virtual community ‘Our community’ has been created where individuals can sign up, make a pledge and see how their stated actions are leading to reduced emissions. Every person who signs up, has a small profile on the website, and the campaign has active myspace and facebook pages, where people can link further with Together. Other actions include, on location personal communication, a short movie where celebrities speak out, entertaining film clips on the ‘fool’ who wastes energy, offers and opportunities to win prizes, and participation in special events. The red line throughout all activities and information provided is to focus on practical everyday solutions that the individual can do, and to show the impacts of combined efforts of many people.

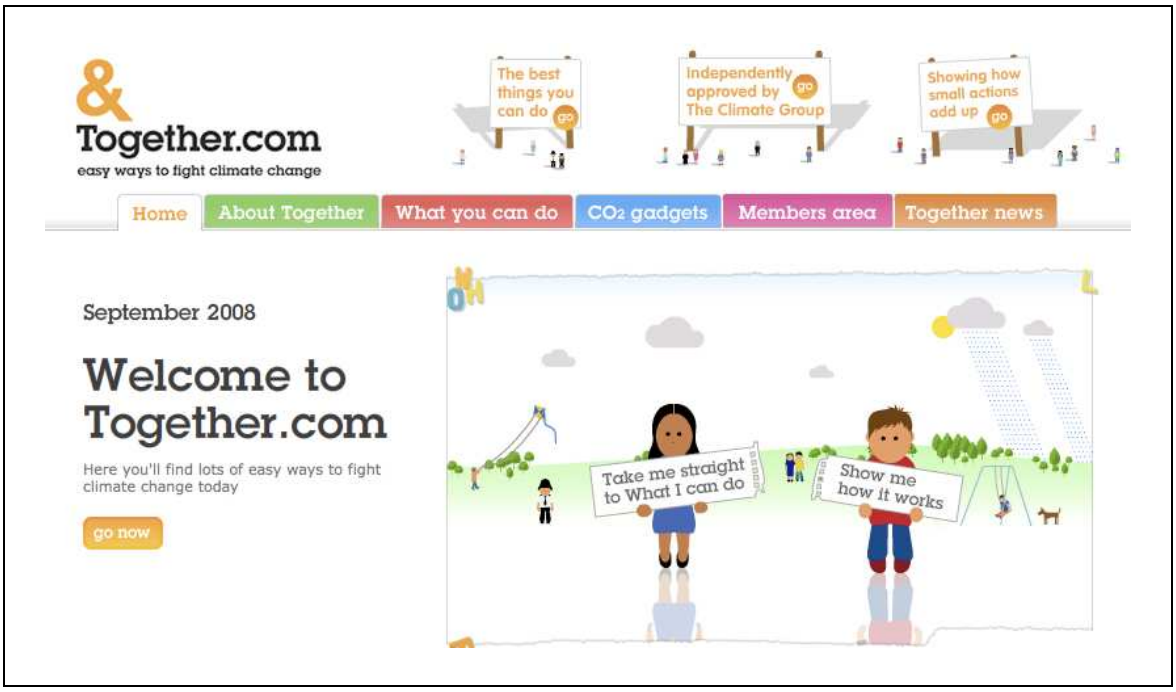


Fig. 2.7: Snapshot from Together
(together.com)

2.3.4.3 Assessment of Together

As the campaign is ongoing, no formal evaluation has taken place. However, there are inbuilt indicators that will show the level of success regarding some parts of the campaign.
Each participating company regularly sends sales figures to the Climate Group. The Climate Group, along with the Energy Saving Trust, has developed a model to calculate energy savings from most of the participating companies. The number of people who have signed up for the virtual community, and made their pledges, also gives an indication of success. The calculations are updated and published on the campaign’s website. The campaign has received a fair share of publicity.

Environmental impacts

By 1 October 2008, 638,591 tonnes of CO_2 have been saved by the consumers' that responded to the corporate partners' activities.[75]

Together's environmental effectiveness, when compared to the goal of making SC easy, by providing consumers with practical solutions and promoting companies who provide sustainable products and services, and in light of the scale of the project, appears to be relatively high. However, when looking at the overarching goal of dramatically reducing carbon emissions, it is unlikely that significant environmental changes will occur as a result of solely this instrument. The main reasons are that the project is of a small scale, it is based on voluntary measures and it is open to very different kinds of initiatives of each partner.

Behavioural change is difficult to link to one instrument, and changes take time. Together, as an approach, appears to have the potential to gain a high level of environmental effectiveness in the future, given that the campaign continues to spread and reach an increasing number of companies and consumers. With the recent launch of the campaign in the United States and Australia, the possible impact of the campaign has increased substantially.

Economic impacts

The costs of Together are shared by the government, NGOs, industry and the campaign's supporters. The studies and research needed for initiating the campaign had already been conducted and did therefore not increase the cost of Together. The R&D work demanded from corporate partners would possibly also have been conducted regardless of involvement in the campaign, as many of the partners had already started developing their product or service before entering the project, or they had the intention of making such an effort. The price incentives given to the consumers by the corporate partners are expected to be compensated to the companies through increased sales. Consumers benefit from lower prices on environmentally sustainable products and services.

In general, the economic burden is shared and therefore low per partner. Additionally, consumers are expected to benefit. Economic gains are marginal at the moment due to the small size of the project, but if it were to grow, Together could play a part in influencing a market shift towards 'green´ products and services, leading to further economic opportunities.

75 See Fig. 2.7 on We're in this Together.

Social impacts

The aim of the campaign is to influence the consumer by making sustainable consumption easy and attractive, raise awareness, and increase cooperation between companies. The whole philosophy of Together is based on the enhanced effectiveness of working together. The campaign works to make it so easy for the consumer to buy energy saving products, that it becomes a natural thing to do, thereby in the long run influencing social norms and practices.

It is still too early to tell whether the campaign will lead to social improvements, and it is unlikely that one campaign with 10 partners running over a 3-year period will lead to significant social changes.

Socially, the Together campaign is not discriminatory. Everyone has access to the campaign. There is the possible negative social impact of limiting access by SMEs to the campaign, as there is an entrance fee and the focus has mainly been on attracting larger more influential partners. The campaign is market based. It does not promote reduction in purchasing, but can influence smarter consumption.

2.3.4.4 Barriers to success

Some of the factors of success and the strengths of this initiative are at the same time what makes it vulnerable. Key barriers limiting the effectiveness of the campaign include:

- Vagueness of criteria for participants. Although a strength that adds to the flexibility and openness of project, there is the risk of lowering environmental effectiveness,
- dependency on participants and their dedication,
- management limitations. Working with large corporate partners makes the communication flow challenging,
- the low brand recognition. Large well-recognised companies participating see little added value in using the Together logo,
- competing partners and the possibility of tension between corporate partners,
- a number of other campaigns in the same field (although conducted differently and with different agendas) reduce visibility and public understanding of Together,
- funding remains a challenge for continuing the project over a time period. As an NGO-based project, dependent on voluntary efforts of corporate partners, continuation of the project remains inherently uncertain,
- measuring the effectiveness of the campaign is difficult, due to the large number of factors influencing consumer behaviour,
- as the partners are so different, and the scale small, there is the risk of not reaching a large number of consumers, and
- as a voluntary instrument, the success of the campaign is dependent on the interest and willingness of consumers to act.

2.3.4.5 Innovativeness and transferability of Together

The main innovative elements of Together are broad and varied collaboration, especially the approach to reach the consumers, which is changing people's attitudes through behavioural changes, rather than the other way around. The tool makes it easy for the consumer to make environmentally sound choices and has the potential of reaching more consumers than only the environmentally conscious ones. The Together campaign is at the same time both a very broad and a very specific campaign. It attacks a very specific task; reduction of CO_2. The means on how to reach

carbon emission reductions are left open to the participating actors. The campaign does therefore not have narrow goals or methods for tackling the specific target.
This type of a campaign could be applied to almost all products and services that are consumed and looking at the level of governance, Together could be applied locally, nationally or internationally. The flexible character of Together allows for a mixed level of involvement. As the campaign has already been launched in the USA and Australia, it is clear that there are opportunities for further transfer of the instrument. In order to launch Together in other European countries, political will, a party that is capable of, and interested in organising and executing the project, consumers' interest, as well as willingness of companies to participate are prerequisites.

2.3.4.6 Conclusions

There are several points that make the Together campaign an interesting approach with potential to significantly contribute to sustainable consumption practices and greening of the market. The campaign's key positive elements are:

- the strong political involvement,
- it's practice of collaboration, bringing together many smaller initiatives under one hat, creating a whole that is stronger than the sum of its parts,
- the design of the campaign, its basis on sound data and market research,
- making sustainable consumption attractive and the 'natural choice,' not demanding sacrifice or moral reasoning from the consumer,
- providing small-scale, practical solutions to consumers,
- involvement of a good combination of different stakeholders,
- a clear mission, yet not too stringent in defining who can participate,
- providing advantages to corporate partners, with guidance and assistance in developing solutions, by joining them in a group effort, encouraging action and enhancing their image, and
- economic and institutional efficiency: implementation is spread between partners and everyone can potentially benefit from the campaign.

As for limiting factors, the campaign has setbacks such as:

- the constant and time consuming search for continued funding,
- as the criteria for participation are not stringent, involvement and genuine commitment of participating companies are not guaranteed, and
- the small scale changes asked of companies and consumers, will make progress towards SC practices slow.

Looking at the Together campaign, strengths and weaknesses, the campaign has potential for the UK market and possibly European and global extensions. It is based on a simple, clear concept, dependent on collaboration that can lead to a win-win situation for all participants.
The campaign can motivate social innovation (e.g. changing behaviour and consumption patterns), once implemented on a larger scale, and in combination with other instruments. The corporate partners are in a position to stimulate technological innovation in collaboration with their suppliers and in increasing/focusing their own R&D, as some have already done (Tesco and O2).
The idea of collaboration of the government, companies, civil society and the individual consumer working together as a unit to bring about major positive environmental changes is a promising method to consider. Finally, the notion of shared responsibility for the environment, and the idea

that the individual can indeed easily take actions that make a difference, may trickle into other aspects of the consumer's and employee's lives and motivate others.

2.3.5 Other Interesting Examples

2.3.5.1 CO_2 household certificates (individual carbon trading)

Description

Household certificates (or individual carbon trading), as market based instruments, have been discussed in recent years. The concept of household certificates derives from earlier experiences with pollution permit schemes (e.g. NOx trading program in the U.S. and the EU Emission Trading Scheme (ETS), etc.). The basic principle is to set a cap to limit all CO_2 emissions from the population, and to divide that cap into polluting rights that are delivered to individual emitters. Those who emit more CO_2 than they have been allocated, are required to buy 'pollution permits' from those who are emitting less than they have allowance for. The right to pollute addresses a problem previously seen as an unregulated externality. The system could result in an overall reduction of CO_2 emissions of individuals in an economically efficient, and perhaps morally egalitarian manner. The cap can be tightened over time (see Roberts and Thumin 2006). Unsustainable consumption is made more difficult, while behaving sustainably is rewarded.

Previously, such emission trading systems have been applied to large industrial emitters. Two major issues are the setting of the cap and distributing the ensuing emission rights to individual polluters. While the former can be backed by scientific data, the latter is more subjective and political in nature. There are two main distribution methods: (free) grandfathering and auctioning of permits.[76]

First suggested by David Fleming in 1996, the attribution of *individual* emission permits is thought to be more equitable than the existing industrial schemes as individuals can be given an equal amount of emission rights. Under such schemes, individual consumption (or that of a groups of individuals, e.g. household consumption) becomes the main location for capping of GHG emissions. A number of designs have been formulated, combining the different options currently under discussion. Roberts and Thumim (2006) present an overview of existing proposals for individual carbon trading in the UK. They include Tradable Energy Quotas, Domestic Tradable Quotas (DTQ), Personal Carbon Rationing (or Allowances), Rate All Products and Services, and the Ayres Scheme.[77] Such systems are intended to provide incentives for more environmentally benign behaviour, both in the purchase and use of goods and equipment.

The suggested possible schemes vary in terms of their base unit (individuals, households, companies, and combinations of those), the exceptions they allow (including/excluding children, economic sectors, etc.), the types of emissions regulated (direct and indirect individual emissions), the respective complementarity with industrial regulation, and the technical details of the scheme (cap setting, allocation, monitoring, etc.).

76 Cap-and-Trade systems are an alternative to pollution taxation. From an economic perspective, both alternatives are conceived as being able to reach the optimal level of emissions. The main difference is in the starting point: quantities or prices, respectively. Economic theory suggests the choice is dependent on the relative levels of uncertainty from the regulator's perspective.

77 Under the Ayres proposal, 100% of the units are allocated for free to individuals on an equal per capita basis ,whereas under DTQs, market makers obtain the majority of units from one source, the tender (and, in addition, obtain some from below-allocation emitters). However, under the Ayres scheme, market makers must buy units solely from the tens of millions of individuals holding a surplus (Starkey and Anderson 2005).

Experiences

– Redgrove and Roberts (2007) review a number of Community level experiences (voluntary):
– Carbon Rationing Action Groups (CRAGs) are communities of individuals that have agreed to limit their carbon emissions. Participants agree to pay a penalty for each kg of CO_2 emitted above that target.
– CRed brings individuals, businesses and other organisations such as schools together to reduce their carbon emissions through targets (with a general aim of a 60% reduction by 2025) and concrete measures for reaching those in specific themes. The scheme is voluntary through pledges from participants.
– RSA CarbonLimited[78] is intended to provide an experiment and policy recommendation on individual carbon trading. Besides a compilation of information and advice for emission reductions, the website offers its users the possibility of familiarising themselves with such a scheme, and to participate to a virtual experiment.

Outlook

Generally, the lack of practical implementation examples hinders the development of such schemes, as reminded by Seyfang (2007). Other practical issues, such as the technology to be used, the eventual use of a parallel currency, interactions and compatibility with global trade as well as implementation and political acceptance, are other obstacles to individual carbon trading.

2.3.5.2 Congestion charges

Description

Congestion pricing is an interesting new instrument that has arisen in a local context. It is applied in several cities. Congestion (or traffic) charges are market-based instruments consisting of a charge for incoming vehicles in a particular urban area (centre). Their general aim is to reduce traffic at peak hours (thus emissions) and the number of users, to encourage public transport, and to contribute to infrastructure expenses (e.g. better buses) with the generated income. They rely on the recognition of the problem of congestion as an externality and charges as an appropriate response. As charges are implemented, drivers are stimulated to adapt their behaviour and the externality is reduced. There are however concerns of equity and detractors of such schemes emphasise their detrimental effects on lower social classes and business. Charging is flexible and may be designed as depending on time, vehicle type and residency. Congestion charges remain local instruments implemented at city level in the frame of urbanisation plans and local transport planning. They require infrastructure (parking options on the fringes of the regulated area, public transport…), specific monitoring technologies (video tracking, satellite tracking…), and fiscal architecture enabling payment and fining. While implementation costs are high, the generated income can be substantial and re-distributed to support the system and alternative transportation options such as public transport.

Experience in London and Stockholm

Since early 2003, motorists driving in central London on weekdays between 7:00 am and 6:30 pm are required to pay £5 (€ 7.30), increasing to £8 (€ 11.70) in July 2005 (Litman 2006). There are discount prices for residents of the central London area and some exemptions for motorcycles,

78 The Royal Society for the encouragement of Arts, Manufactures & Commerce (RSA).

taxis and emergency vehicles. Payments can be made by cellular phone messages, payment machines in the area or via the Internet. Motorists can pay any time during that day or purchase weekly, monthly and annual passes. A network of video cameras records the license plate numbers of all vehicles entering the cordon-pricing zone and matches them with the paid list. A vehicle owner who has not paid the charge receives a £80 (€ 116.80) fine. The system covers an eight square-mile area, representing 1.3% of the Greater London area.
The impacts on transport are so far (ibid.):

– Average traffic speed during charging days increased by 37%, from 13km/hr to 17km/hr (including time stopped at intersections),
– peak period congestion delays declined about 20% to 30% and bus congestion delays about 50%,
– excess waiting times for passengers at bus stops decreased by 30% in the cordon pricing zone during charging times,
– taxi travel costs declined 20% to 40% due to reduced congestion, and
– prior to the congestion-pricing scheme, 12% of peak-period trips to central London were by private automobile. After the introduction of the congestion charge, this number dropped slightly to 10%. In consequence, bus use increased 14% and subway use about 1% (see Litman 2006).

Sweden's capital Stockholm introduced a congestion charge in August 2007 (Trängselskatt).[79] Stockholm initiated a trial period of cordon pricing for its central district for the first half of 2006. In a referendum later that year, a majority of Stockholmers voted to introduce the system permanently. Similar to the London congestion charge, Stockholm's system imposes a fee on motorists entering the city centre using number plate recognition cameras to record the identity of vehicles. However, unlike London, the level of the charge in Stockholm depends on the time of the day the driver enters or exits the cordon-pricing zone. The system operates weekdays from 6:30 am to 6:30 pm and charges more in peak periods (20 SEK = 2.2 €) than during the day (10 SEK = 1.1 €). Also, motorists have to pay for each new entry into the cordon-pricing zone – with a maximum limit of 60 SEK (= 6.6 €) a day. Over 400,000 drivers in Stockholm have already equipped their cars with a transponder for easy payment and can pay automatically from their bank account.
The Stockholm trial was assessed as fairly successful (see Stockholmförsöket 2006):

– Traffic in the cordon-pricing zone decreased by 22%. As a result of this reduction in motor traffic, access to the central district improved and travel times shortened.
– Both CO_2 and particle emissions in the inner city decreased by about 14%.
– The congestion charge seems to have increased travel by public transport by about 4.5% (total public transport figures in spring 2006 were 6% higher than the year before, but 1.5% of this increase is attributed to rising gas prices).

Outlook

The congestion charge can be regarded as innovative in the sense that it links environmental nuisances (air pollution, noise emissions, etc.) with congestion problems. The instrument faced strong opposition beforehand. But, after a number of promising trials this policy intervention, driven by municipal authorities, was widely accepted. First discussions on the instrument began when prob-

79 The Stockholm congestion charge is administered by the Swedish Road Administration.

lems with local traffic jams and ensuing air pollution became increasingly obvious and part of public debate. At that stage, politicians were ever more willing to act and to find solutions for the pressing problems connected with inner city congestion.

Congestion pricing touches different sustainability dimensions. First of all, it is bound to steer mobility behaviour in a way that individual travel is reduced, and thereby (local) environmental impacts from vehicle use diminish. Secondly, a congestion charge generates revenues that can be used to fund improvements in transport. Thirdly, every charge has an impact on people's income and, hence, unintended distributional effects might come along with its introduction. Congestion charges actually aim at making unsustainable behaviour less easy, as people have to pay a fee for driving in the congestion zones. This would in turn make travelling by public transport, walking or cycling the cheaper, and possibly easier, option.

At the European level, on March 11th 2008, the European Parliament adopted a non-legislative resolution on sustainable European transport policy, in which it gave its explicit support for market-based instruments and schemes, to reduce the environmental impacts of local transportation systems such as congestion pricing (see European Parliament 2008).

2.3.5.3 Guiding systems for sustainable products

Description

The range of products on offer, as well as product positioning and marketing can have a tremendous impact on consumer decisions. Research indicates that most consumer decisions are taken at the retail interface;[80] making the retail premises a key arena for communication and guidance towards more sustainable practices.

Guiding systems for sustainable consumption include any marketing activities promoting sustainable products or services at the point of sale (POS). However, other complementary activities, such as advertising, the distribution of brochures, sending letters to customers, labelling and website information, can accompany guiding systems at the POS. Consumers take in product information at the POS, just before making their purchasing decision (see Schmidt-Pleska and Dickhut 2005). It is, in other words, the distribution chain that has a significant influence on making consumers more conscious of the environmental and social impacts of their consumption habits. Guiding systems are intended, on the one hand, to raise awareness. On the other hand, by giving consumers personal advice at the POS, buying more sustainably is made easier for the consumer, requiring less research work from them.

Guiding consumers at the point of sale with targeted guiding systems is a method that has been used in product marketing for a long time. For example, many large brand names use marketing tools and promotional campaigns at the point of sales to influence consumer decisions. The same concept could be, and is currently applied, to help consumers identify sustainable products. A number of different marketing tools such as posters, big tags at the shelves, marking on the floor and indicators hanging from the ceiling can guide customer choices. A possible negative factor is overcrowding of information at POS, leading to further confusion. Additionally, large brand names are in a position to make sustainability marketing lose visibility with their sizable marketing budgets (see De Baets 2008).

80 See DTI Sector Sustainability Challenge and Department for Environment, Food and Rural Affairs (2006).

Experiences

The German Die Verbraucher Initiative conducted research on guiding systems from 2003 to 2005, and published guidelines; Guiding systems for sustainable products in the retail industry: A practical guide for consumer communication enhancing sales at the Point of Sale.

The objective of the project was, first of all, to establish the basics for the development of guiding systems that help draw the attention of the consumer to the product at the moment of making a purchase decision, to increase sales of these products, and to compile them in a practical guide. The Die Verbraucher Initiative developed a set of green marketing and sales promotion measures applicable at POS.

Based on the research, using a variety of emotionally effective sales-enhancing measures at POS is a feasible approach to take.

The study also identified certain criteria that are important for maximizing effect of the guiding system for sustainable consumption. These include:

– Use of brands or labels. Retailers want to use recognized and credible brand names that signal product quality to the consumer,
– use of pictures and creative campaigning (addressing the consumer emotionally) is an important factor,
– the sustainable product or service should also have other attractive features, such as high quality and reasonable price,
– to convey both the ecological and social benefits of a product or a service and at the same time show individual added benefits to the consumer, and
– personal communication at the POS where the consumer is provided with personal information that addresses him/her directly. Taking individual consumer's values into account is appreciated by him/her.

In a second project phase, the guiding system developed was tested in two pilot projects in collaboration with retail companies; one with a retail chain for construction and DIY-products ("OBI Baumarkt") and one with a mail order and online-shopping company ("OTTO Versand"). The specific sales promotion implemented at the shops comprised promotion displays (signs, show cards), information leaflets and handouts, posters, customer magazines, events, lotteries, etc. (see Schmidt-Pleska and Dickhut 2005). .

The results of the pilots were promising. An online-shopping site equipped with guidance elements showed an increase in sales of sustainable products of 8 %. In the case of a DIY retail outlet using the guidance system, sales of selected sustainable products increased by 12 %. Also, consumers appreciated the system. In a customer survey, 80 % regarded the guidance instruments as "very useful" or "useful". However, after the pilots had ceased, neither the companies involved, nor other retail industries implemented the system. This was, on the one hand, due to general changes in corporate policies, and, on the other hand, the fact that the developed guidance system was a generic tool. In order to be acceptable for companies, it would have required adaptation to specific company needs and corporate designs – and this was not within the scope of the project. Hence, the project's main value was in exploring the benefits of guidance systems at POS, and in providing guidelines for the design and implementation of such concepts.

Outlook

Based on another study conducted by the Flemish Public Waste Agency of Flanders (OVAM 2008), the main limitations of guiding systems identified include:

– the impact will vary between product groups. For instance, the impact is higher on food products than on cosmetics,

– loyal customers will continue to buy the same product as usual, and may be less likely to be influenced by POS marketing,
– there is an array of other lead systems and publicity campaigns for other issues, and sustainable products may not be able to compete with large brand names, and
– effectiveness of POS marketing is limited by time. After campaigning efforts conclude, so does the rise in sales. Thus efforts must be repeated on a regular basis (see De Baets 2008).

POS guiding systems can be implemented at individual shop level, and equally as collaboration between several retailers, at a municipal, regional, national or even multinational level. Especially for large scale projects, governments and NGOs have a role to play in project management and of providing research background and financial backing. The retail sector is a key agent for this instrument, in bringing sustainable products to the attention of the consumers, educating them and making the sustainable choice easy for them. A guiding system could additionally be combined with other systems such as labelling and with bonus systems (see section 2.3.5.4).

2.3.5.4 Bonus systems

Description

Bonus systems are based on the same principles as customer loyalty cards, often used at the retail level. They are used as a means of improving the retailer/customer relationship by offering additional benefits to the customer (see Scholl and Konrad 2004). Consumers can obtain credits for sustainable products that they purchase, or receive a direct discount, thereby rewarding their sustainable choices in order to influence their behaviour. In this way, consumers gain a perspective and means to increase their environmental awareness and to purchase more sustainably (see OVAM 2006). The system could also be applied to the return of recyclable waste, labelled products, or other sustainable consumption behaviour patterns.

By applying a practice used by private commercial actors such as supermarkets, Bonus systems for sustainable consumption practices can be considered innovative as a public policy. A Bonus card would link consumption behaviour very clearly to an economic benefit. The main drawback here, as with other systems that subsidise green consumption, is that they may inherently lead to an increase in overall consumption, which, albeit “green”, is still likely to be environmentally detrimental.

Experiences

Nu-Spaarpas, Rotterdam

The Nu-spaarpas pilot project ran in Rotterdam, The Netherlands for an eighteen month trial period from 2002 to 2003. The project was initiated by the local government, Rabobank and NGOs, with the support of the EU (LIFE III) and the province of South-Holland.[81]

An electronic card was created, and for the first year, sold for €1.50 (people receiving credit points worth €1.50), and later distributed free of charge.

Consumers were able to use their Nu-Spaarpas cards when purchasing a sustainable product from participating companies. In return, bonus points were earned on the card. Cardholders could then use their bonus points as money to purchase from partners.

81 Nu-Spaarpas.

The partners had a broad range and the focus was on promoting independent SMEs, Waste collection, reuse and recycling, promotion of public transport and bicycle use.
There was a mix of public-private participation, including over 100 shops. Among partners were sustainable shops (providing labelled products), repair and second hand shops, borrowing/lending/hiring services, green electricity providers, and museums. The Nu-Spaarpas could also be used for collecting points at waste collection points and for public transport.
The target group for the bonus cards was primarily passive consumers. They are open to environmental issues, but do little in practice.[82]
By the end of 2003, 10,000 households were in possession of the card, and 1.5 million points had been issued (see Seyfang 2006). Based on a survey with a sample of cardholders, 5% reported changing their behaviour by buying organic products, separating their waste, and buying second-hand goods due to the Nu-Spaarpas. The main influencing factor mentioned was being 'rewarded' for making certain choices (see Seyfang 2004).
The pilot project came to an end in 2003. Despite the initial plan of possibly continuing the savings programme after the trial period, it became apparent during the trial period that there was a need for more structural as well as substantial contributions from various partners. At the end of 2003, with the exception of the Rotterdam Municipal Authority, none of the partners were prepared to contribute financially to a continuation of the project in Rotterdam (see Van Sambeek and Kampers 2004). According to the final report and recommendations, it was not possible to estimate the success of the project in changing consumer behaviour, as the project was run over a short period of time. Additionally, the slow build up of members, changes in strategies for issuing points and the time it took to make the project understood and familiar to people, could be factors making a declaration of the success difficult. Nonetheless, there was an increase in the number of points issued from shops over time (see Seyfang 2004). The Nu-Spaarpas pilot is intended to serve as an example for further implementation, and there are hopes to make the system self-sustaining in the future, under the name of Nu-Spaarpas or through a new project, by charging clients such as the government. The mainstreaming approach, of creating an alternative money system that fits easily alongside conventional money (see Seyfang 2006) requires less effort by consumers, and makes it easy for them to consume more sustainably.

82 See Van Sambeek and Kampers (2004), OECD (2008).

In the assessment after the trial period, the general success factors identified for bonus systems were:

– Distinguished features – a unique card, different from other loyalty cards,
– local implementation – making it possible to address local priority areas,
– broad research basis – understanding and planning based on evidence from various sectors,
– Public-Private collaboration – despite the challenges due to the different nature of these organisations,
– fast start – building a critical mass and high market penetration quickly,
– securing idealistic objectives – not allowing commercial interests to override sustainability factors,
– measurable objectives – for learning and building credibility, and
– sufficient savings value – approximately 10€ savings per year is the minimum necessary to keep users motivated (see Van Sambeek and Kampers 2004).

umwelt.plus.karte, Heidelberg

The umwelt.plus.karte (eco.plus.card, upk) is a bonus scheme that was launched in Heidelberg, Germany in May 2003. It has been developed by the Institute for Ecological Economy Research (IÖW) in collaboration with many local actors within the framework of local Agenda 21 (in particular regional actors engaged in environmental protection and social affairs), and a communications agency.[83] The development and market introduction of the upk was funded by the German Federal Ministry of Research and Education (BMBF).

The card was promoted with the dissemination of an information booklet to 22,000 households in Heidelberg. For the first 5 weeks, people could buy the card at a special price. Several marketing initiatives took place around the launch of the card (see Scholl and Konrad 2004).
Since June 2004, the upk has been a completely market based project funded by the fees of the cardholders. Consumers can purchase the card for an annual fee of 15€. The card is not readable electronically. At the time of purchase, a discount of 3-10% is given directly. Cardholders are sent an electronic newsletter by e-mail. In 2008, about 1,400 consumers owned an umwelt.plus.karte.

83 See Scholl and Konrad (2004), BMU and UBA (2004).

As with the Nu-spaarpas, the card can be used at a variety of shops and organizations. In 2008, consumers could use their card with 46 suppliers. These include ecological grocery stores, repair stores, car sharing services, tool rental services, a museum, a music hall and a language school (see Scholl 2003). The participating suppliers have to comply with sustainability standards.
For the consumer, the umwelt.plus.karte provides both the opportunity to make sustainable purchases, and a chance to save money. The target group consists of consumers with at least some degree of environmental awareness, families, lower-medium income households and students. However, a survey conducted in 2004 among cardholders (n=161) found that all segments of the target group had not been reached. The average profile of owners was women between 30-49 years old, with children. They had a relatively high level of education and were full time or part time employed. A small portion, 8.9% used the card daily, and around half of the cardholders used it weekly. In general, there was a high level of satisfaction with the card (see Scholl and Konrad 2004).
Apart from the survey on the social structure, purchase behaviour and attitudes of cardholders conducted in 2004, the success of the card in increasing the level of sustainable consumption or environmental effectiveness has not been assessed.
Currently, the umwelt.plus.karte scheme is undergoing some changes and will be re-launched.

Outlook

In a study conducted by the Public Waste Agency of Flanders (OVAM), "Can we 'save' the environment?" Research into the feasibility of using Bonus Cards to stimulate environment-friendly Consumption", several different Bonus card systems were analysed. The study concluded that consumers generally speak very favourably about the systems. The main reasons given for positive opinions on the card schemes were financial savings and benefits for the environment. Retailers participate for marketing and/or environmental reasons. Bonus schemes seem to be an efficient instrument for targeting those with high and medium level environmental awareness and interest. For the less aware or non-interested consumers, other more stringent measures are recommended. Another finding from the research indicates that consumers usually prefer a direct discount for their sustainable consumption behaviour rather than a credit scheme that rewards at a later time.
The cost of developing Bonus schemes, especially at a governmental level, and using an electronic chip card, can be very high. The two examples described here have not, or at least not yet, been able to become cost neutral. OVAM proposes using existing electronic cards such as the electronic ID-cards, in order to lower costs. Finally, a clear cut communication strategy, and simple schemes that are easy to understand and adapt to, are important additional success factors (see OVAM 2006).

2.3.6 Conclusions

The government: a facilitator in changing roles

The instruments applied for making sustainable consumption easier or unsustainable consumption more difficult were often not regulatory tools.[84] But, there remains a mandate for governments to

84 This is rather remarkable, considering that the ASCEE project focused on finding tools with government involvement, rather than on bottom-up initiatives from the private sector. In the long term, this would seem to imply that the relative share, if not the absolute number, of tools where the public officials have a central, rule-setting role is on the decrease.It may be speculated that the ASCEE project's emphasis on innovative policy tools may have directed the respondents to intuitively think of non-regulatory tools. Another explanation may be that sustainable consumption is

take action. However, the scope of such action has changed. The government increasingly acts in various, changing facilitator roles in redirecting consumption. In a process that might be described as circular or hermeneutic, the responsibilities move in phases towards and away from the government. There are considerable roles and responsibilities granted to the involved non-governmental players (OECD 2007: 22). In the context of making sustainable consumption easy, a strict, classic top-down and bottom-up division seems therefore outdated and futile. Most innovative instruments on sustainable consumption are mixtures of both kinds of measures.

The case studies chosen for the dimension of making sustainable consumption easy brought forth these kinds of perceptions of the government's role. First of all, the position of the authorities was not exclusive, or even central, in any one of the seven case studies on making sustainable consumption easy, except the congestion charges. Then again, in many of the case studies – e.g. the R/G Calculator, Together, and the umwelt.plus.karte– the government had a crucial role in (co-)initiating the project. The case studies provide an array of initiation techniques: political, scientific and financial. After the initiation, the role of the public authorities changed, however. In the R/G Calculator, for example, Defra continues to manage the technical-scientific backbone of the Calculator. While it is up to the retailers to choose the extent to which they apply the Calculator, the authorities continue to guide the developments by linking the contents to the work continued under the Market Transformation Programme. In Topten, the initial financial support by regional and national institutions in Switzerland, has been continued by authorities such as the City of Zürich, who support the tool by linking it to their procurement policies.

The systemic dilemma: linking incremental changes in behaviour with the fast pace and grand problems of the modern consumption society

The making sustainable consumption easy dimension findings reflect the fact that sustainable consumption policy is about understanding and managing behaviour. Changes in human behaviour are usually slow. They require, for example, breaking away from the old habits and customs. The biases in personal behaviour need to be redirected towards sustainable choices. Because consumers are not always rational, awareness raising will in many cases not be sufficient, and hence the critical mass for changing behaviour patterns will not be attained. Sustainable consumption has to be made easy and obvious – even forced, by removing the most unsustainable options. But these steps can usually only be incremental. Otherwise the majority of consumers, who are not the 'deep green' environmentalists, will not follow. For example, the case studies' Bonus systems and POS guiding systems are means that are already familiar to the consumers. They are now simply applied for the benefit of sustainability. The incremental approach could apply to the other stakeholders as well. Together, Topten and the R/G Calculator encourage the manufacturers and the retail sector to gradually alter their product offers. The most advanced, easily applicable solutions are brought forth, while the most detrimental choices are removed. The vast majority of the familiar offer in-between, however, remains unaltered. The congestion charges in Stockholm and London already stretched the limits of consumer acceptance. The politicians needed to overcome considerable suspicions and resistance in implementing the measures. The case for changing behaviour was again made incrementally, but in this case in terms of the scope of the measures. Successful small-scale pilot studies convinced the audience, which has remained sympathetic ever since (Knott et al. 2008: 62).

such a vague and fragmented area of policy-making that the most useful instruments are likely to be soft, non-regulatory tools as well.

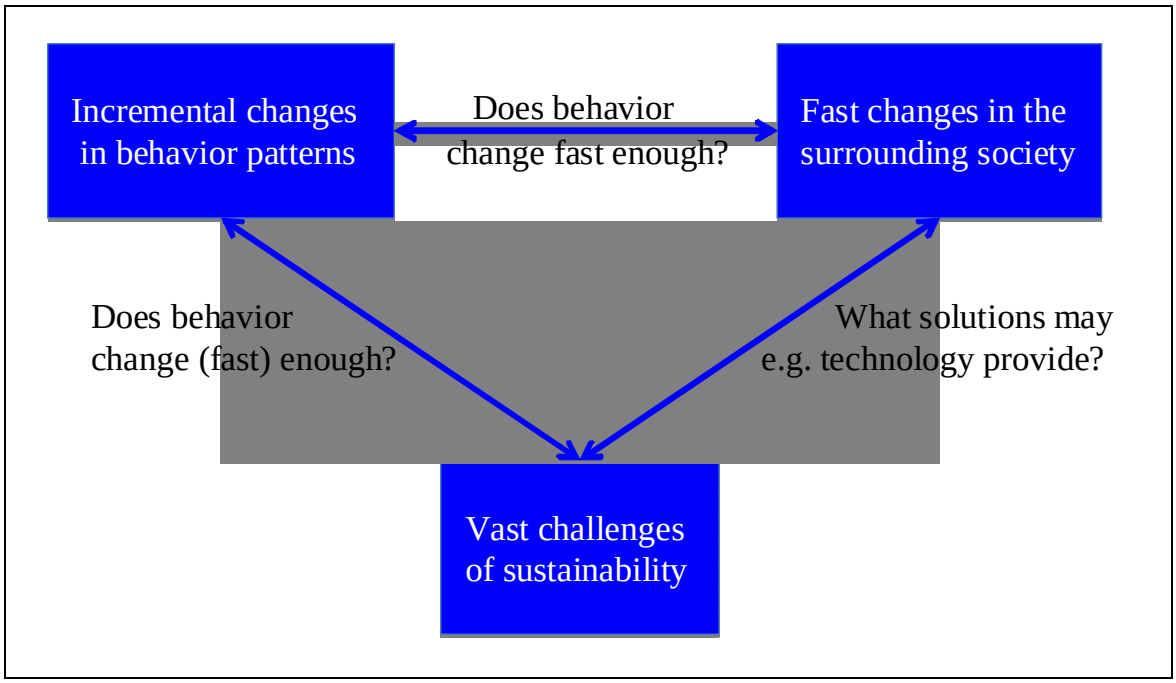


Fig. 2.8: Societal change, behaviour change and challenges of sustainability

An incrementalist approach may suffer from a systemic shortcoming, however. Developments in many sectors of society have become very fast-paced, and are only becoming faster, still. Technological advances are the most obvious example. The strides in fields such as ICT are outstanding. Moreover, it appears increasingly more probable that solving fundamental sustainability issues, such as climate change and sufficiency of natural resources, will require drastic action. Moving in small steps may simply not be enough. Thus, slow, incremental changes appear insufficient in two different ways: in reflecting the fast pace of the developments in the societal framework around, and in measuring up to the environmental challenges at stake.

In the “making sustainable consumption easy” case studies, there may be seeds of ideas on how to bridge this systemic gap on how to link the slow pace of behavioural change with the fast pace and cast problems of the today’s consumption society. The R/G Calculator and the Topten have explicitly linked the incremental steps to technological developments. In both measures, the actual product offer on the market forms the flexible base line. Strides in technological development lead to a corresponding change in the stringency of the criteria. Thus, the faster the technological progress, the greater the change in the instrument.

There still remains the issue, however, of how to ensure that such dynamic, technology-driven changes do not outpace the evolution in consumers’ will and actions. One part of the response may lie in the nature of the making sustainable consumption easy -measures. In addition to further awareness raising, the ability of consumers to behave sustainably must be addressed – and in particular their ability not to act unsustainably. An element of active promotion, if not pure coercion, is brought in. For example, the R/G Calculator may ultimately lead to the elimination of the worst laggard products of an older, technologically far inferior generation. The calculator may thereby help in accelerating a relatively large shift in terms of sustainability.

Coercion in the society is usually a government prerogative. Thus, government involvement may be assumed to increase as a function of the coercion required. Thus, the more effective coercion is driving change – this is surely not always the case – the more involved would the authorities be. This would in turn imply that making sustainable consumption easy -measures are more prone to government involvement than e.g. awareness raising measures. To state this differently: perhaps

the measures that make sustainable consumption easier and unsustainable consumption more difficult, even impossible, can be seen as some type of a middle ground between top-down mandatory and bottom-up voluntary actions. The measures consist of "active promotion" and "indirect forcing". As such, they could be key to bridging the gap between slow and incremental changes in consumer behaviour, on the one hand, and the possibilities and need for more substantial change, on the other.

Incentives

If an element of active promotion or indirect forcing is understood as a key characteristic of measures on making sustainable consumption easy, it comes as no surprise that all of the case studies contain an economic incentive[85]. Economic incentives may be very effective in promoting change, in pushing consumption more strongly in the desired direction. In five of the cases, the economic incentive is a positive one. Bonus systems reward the consumer financially for green purchases, and the collected credits may only be used for sustainable purchases or public transportation. Topten brings forth the long-term savings of energy efficient products. Together promotes sustainable products that make economic sense to both seller and buyer; a classic win-win scenario. CO_2 household certificates (i.e. individual carbon trading) attempt to harness the two sides of the market logic; the (more) sustainable parties reap the economic benefits, while the laggards are punished financially and/or through a weakening competitive position. The congestion charges apply the disincentive of fees on consumers' driving. In the R/G Calculator, the economic incentive is built into the way in which the retailer may make his/her product range more competitive, on the one hand, and into how the producer's energy efficient products become more attractive, on the other hand. Overall, the conclusion on the importance of actively rewarding and discouraging consumers is in line with other research, which emphasises incentives in achieving cultural change.[86]

Science – a means of governmental oversight?

The paradigm of science-based policy making is clearly evident in the case studies. The R/G Calculator is closely linked to the Market Transformation Programme's in-depth market analysis and projection of longer term [developments] in the market. It is also closely associated with scientific work done by Defra. Together is an offspring of several studies and strategic planning by, and for, the government. Topten and the congestion charges have grown from similar "science-government" backgrounds.

The significance of science in policy making may be linked to the "circular" role of the government, mentioned in the first subsection above. Because the government is both an important financial source for scientific work as well as a locus for such activities, the authorities are likely to be involved in numerous policy developments even where they would not be actively pursuing them. Scientific work can therefore also be seen as a means of influencing the policy agenda.

Multiple tools

The integrative nature of policy making also leaves its mark on the characterization of the policy tools on sustainable consumption. It has become difficult to group the ensuing outcomes in a clear-cut, unambiguous manner. Overlaps are numerous, and usually intentional. Indeed, the "dimensions" of consumer policy–triangle (see Fig. 2.1 on page 66) is an attempt to structure the discussion in a new manner. Moreover, many policy tools need to be operated in parallel to reach the de-

85 This aspect was in no way considered in selecting the case studies.

86 See e.g. Knott el al. (2008).

sired objectives effectively and efficiently. Together, Topten, the R/G Calculator and CO_2 household certificates are likely to contribute positively to reducing the energy consumption of home appliances and electronics. Yet, each one of them individually will have only a minor part in the overall efforts towards energy efficiency and, further, a more sustainable society. They are only a part in a much bigger puzzle. A complex issue such as sustainable consumption calls therefore for a systemic approach, where the strategic, collaborative use of policy instruments plays a decisive role (OECD 2008: 25-27). Some countries, such as Austria, Finland and Sweden have introduced comprehensive lists that include a multitude of policy instruments. While well thought out combinations of instruments are beginning to emerge (see OECD 2008), the plans still lack precision and cohesion. Which combinations of measures exactly can be foreseen for what target? How are they believed to interact, and how to can one optimise the synergies from such interactions? These questions have not yet been properly addressed in terms of the instruments under analysis in the case studies.

A structural problem

Finally, a structural problem with all instruments that intend to "make sustainable consumption easy" needs to be noted. Even green consumption is still consumption. No consumption at all would obviously always be the most sustainable option. That is nonetheless not often, or at least not always, a tenable baseline of assessment. To the extent that "no consumption" is not an option, it must then be assumed that the promotion of more sustainable consumption choices will lead to a replacement of a worse choice, but not to an overall increase in environmental impacts. In other words, making an individual consumption decision easier should not lead to an increase in purchasing decisions being made, because then sustainability in the aggregate could worsen. It was not possible to assess the different kinds of rebound effects within the scope of the ASCEE project. This structural problem nevertheless deserves to be kept in mind.

2.4 Greening of markets

2.4.1 Introduction

Moving along the path towards a sustainable economy requires a plethora of components and actors. As one essential component, it is necessary that products offered and sold are more sustainable.[87] Obviously, we are far away from reaching this general requirement. A greening is necessary on both the supply and demand sides of the market. There is a close interaction between the two. We understand greening of markets as either the creation of new, green markets, i.e. segments where eco-efficient products and technologies are placed into the market, or the greening of existing markets where available products are gradually substituted with 'greener 'alternatives. Greening is not restricted to the environmental dimension of sustainability, but our research was focused primarily on this dimension. Nevertheless, we considered also the social and economic pillar of sustainability if information was available.

Greening of markets encompasses several strategic components (seeFig. 2.9)

1. "Improve products" – i.e. enhancing the environmental performance of products and considering eco-efficiency requirements for future product development.

87 We will not discuss here the challenges and indicators connected to the identification of greener and sustainable products.

2. “Disseminate in markets” – i.e. increasing market shares of environmentally leading products and, thereby, up scaling green market niches into mainstream market segments.
3. “Phase out of the laggards” – i.e. restricting and phasing-out of products with a bad environmental performance.

These three components are complementary. The intention is to influence the curve of distribution of the products offered and bought. We would move from the curve describing the status quo to a

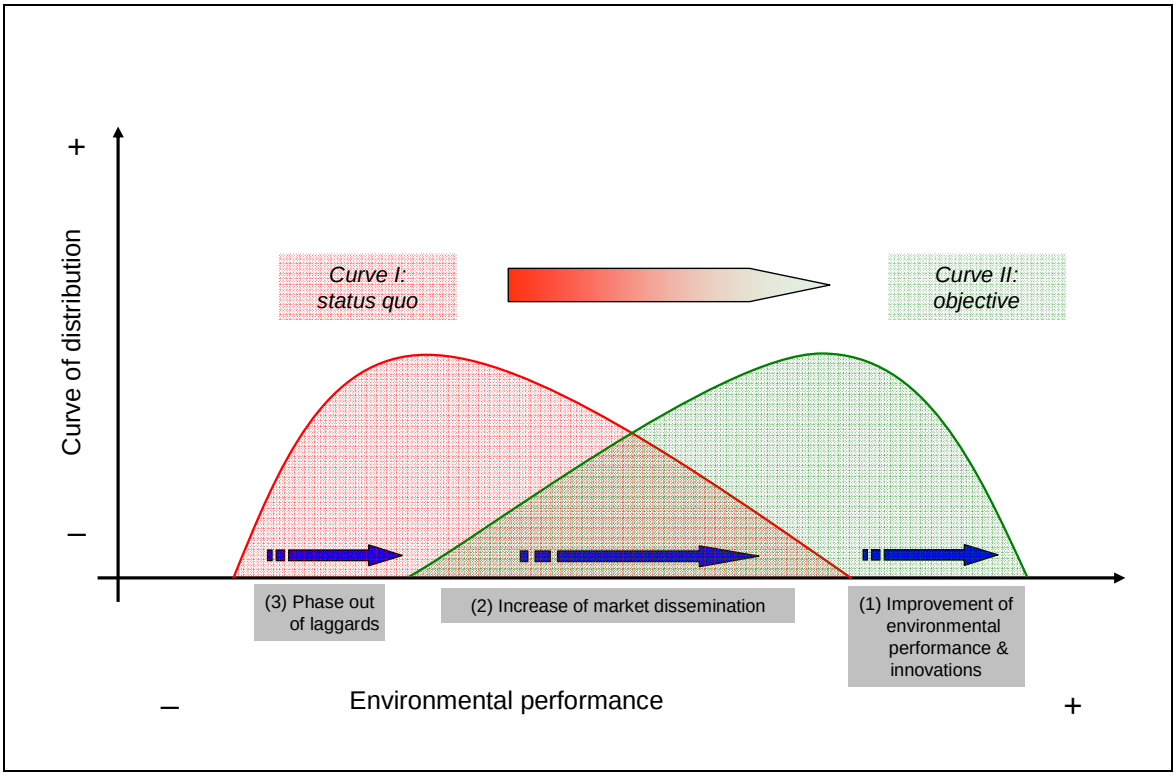


Fig. 2.9: Strategic components of a greening of markets (own elaboration)

new one with an improved average environmental profile of the products, a bigger market share of environmentally more benign products and the disappearance of the laggards. These components are ***some*** components, which need a series of others, like orientation of private, commercial and public consumers towards eco-efficient products, the sustainable use of products (e.g. repair und up-grading), and environmentally sound waste management.

Dealing with a greening of markets, we focus on interesting, instructive and innovative tools which are supposed to contribute to greener products on greener markets. We look at the experiences with product panels, technology procurement and green funds.

Technology procurement is a specific application of green public procurement (GPP). It is oriented towards the stimulation of sustainable innovations to develop new technologies pushing suppliers’ innovation processes, in order to develop “greener” products. It pushes the development of new technologies in order to develop “greener” products. It is an instrument which mobilises the economic demand power of public institutions. The intention is to trigger environmentally benign innovations (1st strategy) and to contribute to market dissemination of the innovative products (2nd strategy).

Product panels are an interactive and co-operative approach among different stakeholders in order

to promote, market and disseminate cleaner and more eco-efficient products in the market, considering the supply and demand sides. Products panels are a voluntary approach facilitated by the government and arranged in a discursive manner. They are intended to bring relevant actors together and to improve market performance (1st strategy) and market dissemination (2nd strategy).
The Dutch Green Funds Scheme (GFS) is a tax incentive instrument to encourage environmentally more benign projects. Individual investors – private consumers – lend their money to banks, at a lower interest rate, which is compensated by a tax incentive. The Dutch government provides the necessary legislation, supervises the banks issuing green funds or offering green savings and ensures that green projects are properly assessed against the ecological criteria set by itself. Banks offer cheaper loans to environmental projects and thereby improve their financial condition. The GFS contributes to an improvement of environmental performance (1st strategy) as well as innovation (2nd strategy).
In addition to these three cases, we shortly report on two other interesting tools which might contribute to a greening of markets, namely white certificates and an exemplary connection between product charges and eco-label.
The empirical basis of this chapter is phone interviews with 29 experts from public authorities, academia and consultancies, based on interview guidelines and intensive desk research.

2.4.2 The Dutch Green Funds Scheme

The Dutch Green Funds Scheme (GFS) is a tax incentive instrument used by the Dutch government to encourage environmentally friendly initiatives. Investing in the Green Funds means that individual investors lend their money to banks, at a lower interest rate, compensated by a tax incentive (environmental tax credit). The green banks can then offer cheaper loans to environmental projects and thereby improve their financial situation.
The GFS is an economic instrument promoting access to finance for environmentally sound projects. It contributes to the greening of markets in two different ways. On the one hand, it supports, for instance, the proliferation of wind energy, energy efficient greenhouses, and organic farming methods, i.e. contributes to creating greener markets in energy production and in agriculture, through incentivising consumers to offer cheap loans. On the other hand, it creates a market for socially responsible investments that provide the opportunity for consumers to invest their money in an environmentally friendly way in line with their green preferences.
The Dutch GFS, as fiscally-facilitated investments, are unique in Europe. No such scheme has been implemented in other European countries at the present time. Green Funds, however, are part of a more comprehensive discussion on socially responsible investments (SRI).

2.4.2.1 Development of the Green Funds Scheme

The development of the GFS goes back to the initiative of two former members of the Dutch parliament in the early nineties. The GFS was finally implemented in 1995. At the very beginning, it was fairly difficult to find suitable investment projects. But, after a while, this problem was solved so that the number of certificates, in particular for greenhouses, renewable energy projects and organic farming initiatives began to grow rapidly (see below). The system is being reassessed at present. A revised GFS will come into force; probably, in 2009.

2.4.2.2 Description of the Green Funds Scheme

The GFS is a tax incentive instrument to encourage green projects. Under this scheme, individuals who invest in a green fund or save money with financial institutions practicing green banking re-

ceive a rate lower than the market interest rate, but a tax incentive ("environmental tax credit") compensates them for this. In turn, the banks charge green projects a lower interest rate and, hence, provide them with financial resources they otherwise would have to acquire at a higher cost. Fig. 2.10 provides an overview of the roles and relationships of the actors involved in the scheme. The Dutch government provides the necessary legislation, supervises the banks issuing green funds or offering green savings and ensures that green projects are properly assessed against the ecological criteria set by the government. The consumer provides money and receives below average returns, which are ameliorated, however, by the available tax deduction. The banks supply the green funds to the consumers and the cheap loans to the companies. They also assess the economic performance of the business applicants. Finally, the companies offer the green projects that require additional investment capital and provide some minimum expected economic returns to the banks.

According to the Dutch tax system, investors normally pay 1.2% capital gains tax of the amount saved or invested. Investments in green funds are fully exempted from this tax (up to an amount of 53.421 € per person in 2007)[88] and are additionally granted another tax subsidy. Investors in the Netherlands also have to pay an income tax on their investments, which, for green investments

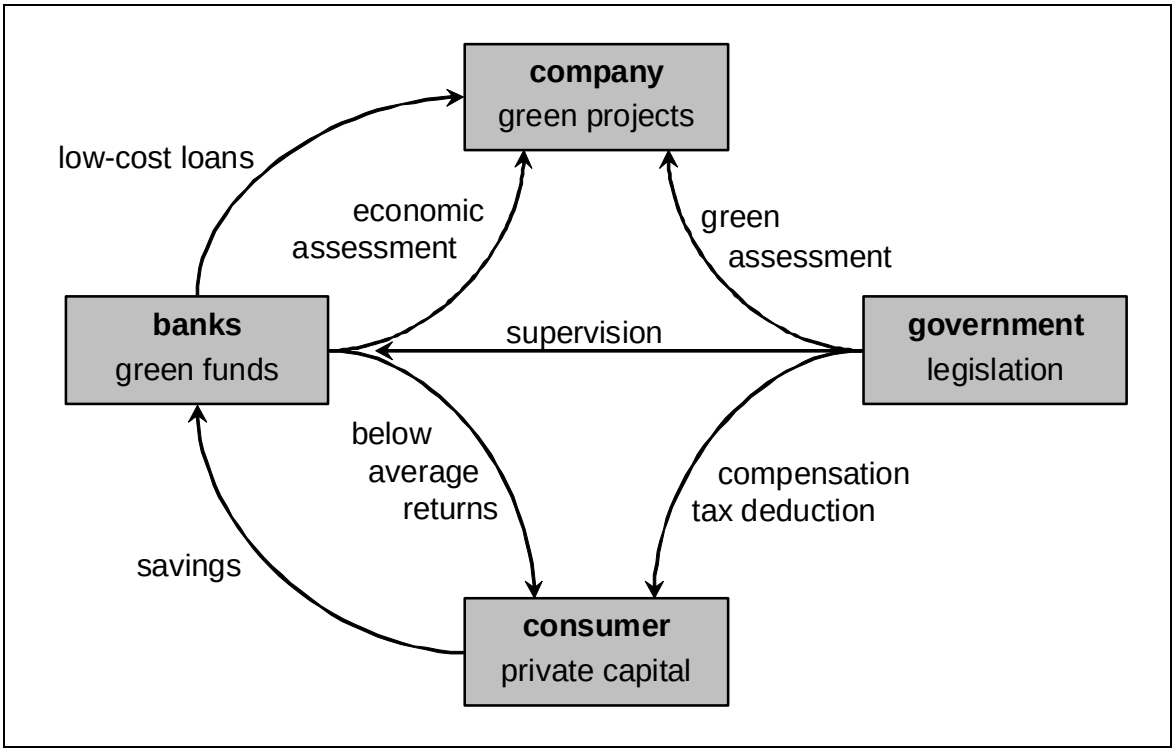


Fig. 2.10: The Green Funds Scheme
(SenterNovem 2005a:2)

only, is lowered by 1.3 percentage points. Compared to standard savings, investments in green funds thus are taxed 2.5% less.[89]

88 This ceiling is indexed annually.

89 This overall discount of the GFS is allocated among the three parties in the system, i.e. consumers, banks and companies. Its allocation depends upon the amount of money available from private investors and the companies' demand for funds. At present, the latter group obtains 0.75 to 1.0% of the entire 2.5% advantage. The banks receive approxi-

The GFS comprises the *Green Projects Scheme,* establishing the criteria for the ecological projects and the *Green Institutions Scheme,* regulating the role played by financial institutions.
All projects supported by the GFS have to provide an immediate and substantial environmental benefit. They range from high-tech environmental innovation to low-tech improvements of the natural habitat. Projects eligible to the GFS fall under the following categories: nature, forests, and landscape, organic farming, green label greenhouses, agrification, renewable energy, sustainable construction, cycle-track infrastructure, voluntary soil decontamination, and other projects. According to the *Green Projects Scheme,* all projects applying have to pass a kind of sustainability test, at the end of which a "green certificate" is awarded (see below). The technologies or operating methods supported by the GFS must be new and have a low market penetration of about 5 to 10%. The scheme, thereby, explicitly addresses 'spearhead' projects. But, it also applies to projects that have passed the development phase and are desirable from social point of view, as in the case of organic farming (KPMG and CE 2002: 7). The criteria for the green projects are set by Dutch government, i.e. the Ministry of the Environment (VROM), and the two public authorities responsible for the implementation and administration of the scheme. They are adjusted regularly to maintain the innovation incentive incorporated into the scheme. For instance, criteria have been tightened for green label greenhouses and sustainable buildings.
Every green fund and green bank participating in the GFS has to meet the strict requirements of the *Green Institutions Scheme*. The banks are obliged to put at least 70% of the money they receive into certified green projects. They may invest the remaining 30% elsewhere to spread the risk and to compensate for financing barely profitable projects. The Central Bank of the Netherlands and the tax authorities supervise this obligation. The financial institutions offer bonds with a fixed value (e.g. 1,000 Euros or € 5,000), fixed term (often 3, 5, or 10 years) and fixed interest rate or they offer shares in a green investment fund. Usually the interest rate or dividend paid by the bank is lower than the market rate, which means that the bank can in turn invest the funds in green projects at a lower interest rate. The time frame of the loan is a maximum of 10 years. In the case of nature development projects, it is 30 years. In 2005, eight institutions or banks are described in the Green Institutions Scheme as green banks or banks with green funds – among them conventional banks with green products, such as ABN AMRO, and purely green banks, such as Triodos. The list covers the majority of Dutch financial institutes. Thus, one can presume that Green Funds are, in principle, available to 99% of Dutch consumers.
With respect to the government, different ministries are engaged in the system: Ministry of Housing, Spatial Planning & the Environment (VROM), Ministry of Finance (FIN), Ministry of Agriculture, Nature & Food Quality (LNV) and the Ministry of Transport, Public Works & Water Management (V&W). VROM is responsible for coordinating the implementation of the scheme. The Applications Department (Dienst Regelingen) at LNV and SenterNovem, an agency of the Dutch Ministry of Economic Affairs, are authorised by VROM to issue green certificates on behalf of the Environment Minister. The Ministry of Finance supervises compliance with the requirements of the Green Institutions Scheme. Consumers are represented in the GFS by VBDO ("Verenging van Beleggers voor Duurzame Ontwikkeling") which is the Dutch counterpart to the European Social Investment Forum (Eurosif). VBDO represents the interests of institutional and individual investors.

2.4.2.3 Assessment of the Green Funds Scheme

The Green Funds Scheme does not formulate explicit goals, e.g. with regard to the number of certified projects, a minimum spread over the different project categories, total capital raised, number of

mately 1%, amongst others, to cover their costs of administrating the system. And finally, 0.8 to 1.2 % is the real advantage for the private investors.

savers/investors reached, etc. Hence, the impact of the GFS cannot be assessed in relation to concrete targets.

Success

By the end of 2006, i.e. eleven years after introduction of the GFS, almost 5,000 green projects have been certified. These projects comprise a total allocated project capital of 8.8 billion Euros.[90] The figures, however, did not follow a continuous upward trend. The amount of allocated capital dropped for the first time in the year 2000, when there was uncertainty regarding the new fiscal scheme that was due to come into force on 1 January 2001. There was a similar slowdown effect in 2003, when the government suggested terminating the tax reduction for citizens (SenterNovem 2005b: 5). Also, in 2006, there were less certificates and a smaller allocated project capital; due to the fact that investors invested more in 2005 in anticipation of expected changes (increased environmental requirements) for Green Label Greenhouses.[91]

However, during the last three years, there has been an ongoing increase in the number of savers and investors respectively. In 2006, almost 230,000 people[92] were responsible for a total invested volume (amount of money supplied by savers/investors) of almost 6 billion Euros which corresponds to approximately 25,000 Euro per saver/investor.

Scholtens (2005) mentions a representative survey from 2002, showing that apart from tax regulation, the age of investors is a significant driver, too (Das and van Soest 2002). According to this survey, the propensity to invest in green funds increases significantly if the financial decision-taker in the household is at least 65 years old. Other variables, such as household income, gender and education turned out to be insignificant. SenterNovem (2005a: 5) reports, that one in seven individual investors buys green bonds or shares in green funds. Just recently, a survey among clients and non-clients of the GFS[93] revealed that

- the information level with respect to the GFS between clients and non-clients showed little differences,
- clients of the GFS knew little about the projects financed with the available funds and, hence, not very surprisingly envisaged that at least parts of them were given to projects in foreign countries,
- there are three different types of investors: those that go into Green Funds for ethical and environmental reasons, those that do so because their banks had advised them, and finally those clients mainly driven by the tax advantages,
- favoured projects categories are those dealing with sustainable energy sources, organic farming and sustainable buildings; in addition, recycling and re-use projects were addressed as another interesting category, and
- clients want to continue with the Green Funds and non-clients became interested in them.

90 The total allocated project capital is the amount of money granted to projects that received a green certificate. In 2006, it was 0.8 billion € (676 certified projects) and in 2005 it was 1.5 billion € (396 certified projects). The total allocated project capital in the period 1995 to 2006 accounts for 8.8 billion € (4,895 certified projects).

91 Moreover, the drop from 2005 to 2006 was strengthened by an issuing of certificates in the category “nature, forest, and landscape” in 2005 which was far above average.

92 The Netherlands have 16 million inhabitants covering 6.4 million households. Assuming that one person per household provides savings or investments to the green funds, only 1.4% of all Dutch households have been engaged in the GFS in 2006.

93 The study was commissioned by VROM. The personal interviews were conducted in autumn 2007. In total, 25 individual investors were interviewed, the majority of them already investing in the Green Funds.

Environmental impacts

An assessment study on the GFS (KPMG and CE 2002) did not cover all project categories, but rather focussed on sustainable energy, organic farming, and the category “other projects”. At the time of conducting the study, this scope corresponded to half of all projects certified under the GFS. Hence, the results provided by the study may underestimate the total effects of the GFS.

With regard to the environmental benefits, the report reveals that for the year 2001 the GFS achieved significant environmental improvements as compared to “standard techniques”. They refer to emissions of CO_2, NO_x, SO_2, and NH_3 avoided– in particular the reduction of CO_2 caused by penetration of renewable energy sources – and reduced use of pesticides and also to the positive effects on biodiversity, realised mainly through organic farming methods. Organic farming, however, lead to increased spatial use. This negative effect must be balanced with the fact that more space for plants and animals improves biodiversity.

Moreover, the environmental impacts of the GFS are contingent upon the requirements set up for the different categories. They are not revised on a regular basis, but updated if the number of applicants in the specific category reaches a market penetration which is significantly higher than 10%. For instance, the share of greenhouses qualifying for the scheme is about 50% at present, so that an enhancement of criteria is due to come.

Economic impacts

According to VBDO, the GFS had a market share in all individual savings and investments of 1.8% in 2006, after 1.65% and 1.4% in the years before. If non-fiscally facilitated savings and investments from individuals are included as well, the market share of socially responsible savings and investments in all individual savings and investments increases to 3.5 % in 2006 (VBDO 2007).

In order to assess the economic impact of the Green Funds Scheme, the KPMG/CE study employs the shadow pricing method. This method takes the costs of environmental measures that have been avoided owing to the application of the scheme as an indicator for the economic benefits. With regard to the reference year 2001, the study finds out that every Euro the Dutch government invests via the Green Funds Scheme, i.e. every Euro of tax income loss provides 40 Euros from the private sector for investments in green projects. These 40 Euros are then used to achieve environmental objectives. The entire economic benefits of the green projects covered by the study, therefore, amount to 51 million Euros in the period from 1995 to 2001. This is the amount of money that would have to be spent without the Green Funds Scheme in order to achieve the same environmental relief.

The system is sometimes criticised, in particular by the Ministry of Finance, because of the diminished tax revenues. Scholtens (2001a: 5ff.) reveals, though, that this perspective on the macroeconomic effects is too narrow. He argues that the net effect results from the loss of income tax due to the tax exemptions plus the corporate taxes obtained from those companies receiving the cheap loans plus the VAT on goods and services generated through GFS facilitated projects. Taking fairly conservative assumptions, e.g. with respect to the number of green projects that would have been undertaken even without the GFS and the difference between GFS interest rate and conventional market interest rate, the net fiscal effect still turns out to be positive. Hence, in total, the scheme causes no financial losses to the government, but rather generates additional income.

Social impacts

The GFS delivers social benefits – in a broader sense – by raising awareness of the participating actors. The scheme succeeded in reinterpreting the meaning of environmental protection – from environment as a threat, to environment as an (economic) opportunity.

Customers began their participation in the scheme due to the financial advantage they received. Later, they became more and more interested in the environmental quality of the scheme, and in the meantime they complain if they believe a certain project is not green enough or a bank does

support other non-green projects etc.
All the top Dutch banks have a green bank or green funds in their product portfolio now. They are actively looking for green projects to finance which is a complete turnaround, as compared to the time before the introduction of the GFS. There is a new willingness to fund such projects, and banks have expanded their expertise on green projects significantly (SenterNovem 2005a: 5).

2.4.2.4 Barriers to success

The analysis of the case revealed a number of obstacles:

- The instrument is more difficult to implement and operate than e.g. subsidies.
- The co-operation between VROM and FIN is sometimes conflict-laden, due to their, at least partly, diverging interests.
- Loans are normally offered for 10 years. Hence, if the government ceased the GFS, i.e. stop providing the tax advantage of 2.5%, the banks would have to bear the losses generated by the remaining projects receiving the cheap loans. This perceived risk might curb the engagement of financial institutes.
- Investors react very sensitively to any (planned) changes in fiscal policies. Thus, the more discussions on the framework of the system, e.g. the amount of the environmental tax credit, the more difficult it is for the banks to assess the expected number and volumes of green project applications, and of private investments respectively.
- Knowledge of the scheme among the general public is not adequate, as yet. A government promotional campaign is lacking. According to VROM, the promotion of the GFS is, however, the responsibility of the banks, since they have to cope with possible in-balances between money input (from investors) and money output (to the projects) arising from successful public information campaigns.
- The ceiling value (50,000 Euro), up to which savings are tax free, is perceived as being too low. Raising it would attract even more investors, and, also, green projects with larger investment volumes.

2.4.2.5 Innovativeness and transferability of the Green Funds Scheme

For Dutch environmental policy, the tool does not represent an innovative approach. It can be regarded innovative in the sense that it is applied in the Netherlands only and might provide a promising instrument for other European countries as well. The successful implementation and operation of the GFS, however, relies upon several *preconditions*:

- The higher the income tax people have to pay the bigger the incentive that is obtainable from tax rate discounts. Hence, if the national tax regime leads to fairly small income tax payments, either due to low tax income rates or due to tax evasion, the chances for success of a scheme that depends upon tax advantages will be very limited.
- According to the interviewees, trust and partnership, in particular between banks and the government, are crucial for the success of the GFS. If this is not available, such a scheme will not work properly.
- The Ministry of Finance needs to principally support the scheme – although it results in loss of direct taxes. Therefore, a clarification on the maximum budget for the tool, i.e. the loss of tax income that can be borne by the government, is vital.
- Green projects must be available, and at least some banks should have experience with socially responsible investments.

In other European countries, there is not much debate on such an approach to promoting green or sustainable investment. In Sweden, for instance, the concept has been discussed by the Swedish EPA, but no specific action has been taken. Although SRI is an emerging issue in Sweden, there is no discussion at a government level how this development could be stimulated by (fiscal) policy instruments.

2.4.2.6 Conclusions

The Dutch Green Funds Scheme "has had a catalysing effect on socially responsible saving and investment" (Scholtens 2005: 135), and therefore can be regarded a very successful policy instrument. The approach is convincing in that it provides a clear incentive to change to more sustainable (investment) behaviour, and in that it reframes the symbolic meaning of the environmental dimension of sustainability – from environment as a threat to environment, as an (economic) opportunity. By this intended side-effect, the system significantly contributes to raising awareness for ecological concerns, especially in the banking sector where sustainability is only gradually entering the agenda.
The implementation of the GFS and its proper operation depend, however, on a number of preconditions referring, amongst others, to the (stability of the) fiscal policy regime and a culture of trust and partnership between the involved parties, in particular between the government and the banking sector.
Furthermore, by adjusting the underlying criteria for the green certificates in a way that only best-in-class, i.e. 5-10% of the market, may qualify for the green funds, the GFS provides an incentive for innovation. However, the revision of the requirements is not conducted on a regular basis.
With respect to the transferability of the instrument to other European countries, one has to take the following issues into account:

– Besides changes in tax regime, policy makers have other economic instruments at their disposal to compensate for the comparative cost disadvantages more sustainable technologies have to bear.[94] The GFS would compete with these other instruments. Hence, to properly assess its pros and cons, a more comparative study of the different economic approaches would be necessary.
– The topic of green and/or social investments represents a rather new sustainability issue not yet widespread in Europe. Thus, it appears fairly unlikely that less developed European economies, such as Romania or Slovenia, would start engaging strongly in this issue while other – possibly more pressing – sustainability concerns, such as waste management or environmentally friendly product design, have not yet been tackled.

2.4.3 Product panels

Product panels are an interactive and co-operative approach among different stakeholders in order

94 In Germany, for instance, the promotion of renewable energy sources for electricity production is achieved via a consistent fee for this green electricity that has to be paid by the grid operators. According to the German "Renewable Energy Sources Act" the grid operators and energy supply companies can pass on the difference in costs for electricity from renewable energies to the final consumer. Hence, the refunding of renewables is allocated among all electricity consumers

to develop, promote, market and disseminate cleaner and more eco-efficient products on the market, considering the supply and demand sides. They are based on changes of governance perspective, where cooperation between players gains importance (see chapter 3.2). Product panels are based on interaction between the participating players by learning, negotiating and exchanging information. Insofar, they build bridges between the state and the market reflecting the cooperative nature of IPP. “Product panels also serve as an opportunity to actively endeavour to develop new approaches and legislative initiatives” (Nissinen and Parikka 2007: 1675).
We will first describe the development of the panel approach, Afterwards, we focus on the experiences of the Danish product panels using three examples.

2.4.3.1 Development of product panels

Product panels have their origin in Denmark and started mid nineties.[95] The Danish Environmental Protection Agency published discussion paper 1996 on a product oriented environmental strategy (Danish EPA 1999) which “(…) was illustrated as a triangle connecting a product, market and stakeholder perspective” (Remmen 2006: 108). Remmen (2006) mentions that in the past an imbalance between these three corners existed because the market has been approached from a rational point of view by corresponding tools like LCA (see also Remmen 2001). The inclusion of the stakeholder perspective was an important, innovative and core aspect of the Danish product oriented environmental strategy. Product panels have been considered as the main approach, it “(…) represented a new approach to putting the environment on the agenda from a product life cycle perspective” (Knudsen et al. 2003: 35). Based on the discussion paper, and the discussions that followed, a statement of the EPA confirmed the panel approach: “The product area panels are to promote the establishment of a binding dialogue and strengthened co-operation between the participating stakeholders, who can promote the development and marketing of cleaner products within their line of business” (Danish EPA 1998: 37). Afterwards, three different product panels began work, namely in the area of textiles (1998-2004), electronics (1998-2006) and goods transportation (1998-2002); followed by four additional panels in the next five years; namely, building and construction (2000-2002), agricultural products (2003-2005), retailers (2002-2006) and professional environmentally-conscious buyers (since 2003, still ongoing).

95 See Knudsen et al. (2003: 11ff.) and Remmen (2006: 106ff.) for an overview.

Overview on product panel approaches and derivates:
Belgium, Flanders: *2006 the Flemish government carried out several stakeholder meetings in order to develop concrete actions on the issue of how to enhance the information flow regarding energy saving in the field of construction.*
European Union: *The European Commission has carried out two pilot projects based on the product panel idea, namely in the areas of mobile phones and of garden furniture. The projects run from 2004-2005/06 (Collins et al: 2005; Singhal: 2006); the implementation of the agreed actions is still ongoing.*
Finland: *A textile panel has been formed in 2001 and worked until 2003; a furniture panel was arranged in 2004 and is still ongoing.*
Germany: *The Ministry for the Environment and the Federal Environmental Agency commenced a national stakeholder dialogue on sustainable consumption in 2004. The process aims to achieve a broad understanding about objectives and innovative approaches through which potentials of business and civil society can be tapped. The first kick-off conference was held in February 2004. In following years, three conferences took place dealing with "Eco design and energy efficiency" sustainability impacts and potentials of ICT, and "Energy efficient use of the internet".*
Germany, Baden-Württemberg: *Baden-Württemberg set up one pilot project in 2001-2002 for paper (Frings et al. 2002) and another in 2002-2003 for textiles (Rubik and Keil 2004, Keil and Rubik 2004).*
Germany, Bavaria: *Two so-called "product bodies" were set up in 2002 on the initiative of the Bavarian Ministry of the Environment. These product bodies, taking the examples "kitchen" and "sports footwear", are to examine the possibilities of cooperation between players along the life cycle of such product groups. Both projects have been finished (StMUGV 2005, 2006, see also IHK and Umweltministerium 2002).*
Netherlands: *In the Netherlands, three panel-similar projects concentrated on the three product groups clothing, food (meat substitutes, fish, biological products), and home furnishing (furniture, lighting).*
Norway: *Panel projects were initiated in 1999 for paints/coatings, in 2003 for textiles and for building/accommodation.*
Spain: *The Catalan government subsidises a panel project on electric and electronic toys which started in 2005 and is still ongoing. Another panel activity is planned for 2008.*
Sweden: *The Swedish "Environmental advisory council" which has been set up on the initiative of the Swedish Ministry of the Environment initiated two discussion for a for "Building and managing properties" and "Future convenience goods trade" (Näslund: 2004).*
United Kingdom: *The British Market Transformation Programme (MTP) is a consultative programme involving stakeholders at different policy stages. It has some of the panels' core elements like stakeholder participation, sharing of burdens and activities (AEAT 2006).*

The idea of this new co-operative approach to product policy issues was disseminated, and several other countries started similar approaches (see box). The European Union became aware of this approach while working on the formulation of a Green paper on Integrated Product Policy (IPP) (European Commission 2001a): "One possible route towards this goal would be to set up stakeholder groups to work on how environmental goals can be achieved, or obstacles overcome, in relation to their particular product group" (European Commission 2001a: 22). The IPP communication of the Commission published two years later (European Commission 2003a) did not directly promote the panel approach, but announced a comparable approach by two voluntary pilot projects,

which have indeed been carried out in the meantime.
Although the nomenclature differs in places, the idea of a cooperative approach of product-related policy making disseminated: experience with product panels is available in considerable volume, especially if one includes similar cooperative approaches. Besides these approaches, there exists – of course – a series of other cooperative approaches in the area of environmental policy and policy as such. Some of them are also related to product issues, like some eco-labelling competent bodies with a pluralistic composition of different stakeholders.
In the following, we report on three Danish panel experiences selected due to their instructiveness and availability written documentation and material in English; namely, textiles, electronics and building & construction.

2.4.3.2 Description of product panels

The Danish panel work intended to introduce a stakeholder perspective to product-related environmental policy. Stakeholders should be involved, play an active part in structuring future developments, by the creation of new innovative approaches and looking for the setting of policy initiatives. The specific motivation for different panels is derived from context-specific backgrounds.
A core element of the approach was to bring together decision makers who were really interested to move and change things. The involvement of frontrunners is considered a key driving element in the panel process. The identity is characterised as: “We are the important innovators in the field – we can do it” (DK-1). In the case of the textile panel, the role of two retailers was important: due to their high market share (> 65%), they were able to push environmentally friendly textiles on to the market .
There are different foci of the seven product panels: the “classical” – *vertical* – product focus considering a product’s life cycle was supplemented by a service approach, namely transportation, and an actor-oriented – *horizontal* – approach, namely retailers and public and commercial procurers, who took into consideration a specific stage of a product’s life cycle.
The Danish EPA indicated as meta-goal “(…) to promote the development and sale of relatively cleaner products in these product areas and to test and demonstrate a number of instruments in the Product-Oriented Environmental Initiative” (Danish EPA 2003: 2). In addition, four specific objectives have been indicated, namely to:

– “Create a dialogue forum for the important players within a product area for the purpose of introducing and coordinating measures that can contribute to the development and sale of cleaner products,
– provide and maintain a consistent overview of important activities in the product area in question, for the purpose of meeting the overall objectives of product initiatives,
– draw up an action plan for the area in question and organise and implement concrete activities outlined in this plan, and
– evaluate initiatives on an ongoing basis and help communicate results to the players of the product area in question” (Danish EPA 2003: 2).

More specifically, the goals of the three reported panels were:
– Textile panel: The goal of this panel was to generate a market for green textiles, especially to strengthen the demand side. During the work of the panel, specific emphasis was given to increasing the application of the European eco-label by Danish companies and the demand for them. This was supported by coordinated action by business, retailers, NGOs, the eco-labelling competent body and public authorities to push the European eco-label on the market.

– Building-construction panel: The panel was oriented to increasing environmental awareness in the branch. The panel was a successor of several previous activities of the Danish EPA which started in 1993 with activities to incorporate environmental design challenges in the branch.
– Electronics panel: The panel began its work focusing on initiatives aimed at reducing environmental impacts of producing and using electronic products. This goal was the basis for the work of the panel within the early years and also became fixed in the first action plan. In 2003, the emphasis changed slightly to focus on exploiting the knowledge gained within the previous work with the intention of changing consumer behaviour and developing tools which support private and commercial consumers making more environmentally sound purchasing decisions.

Composition of Danish product panels

- *Textile panel: The panel consisted of about 20 members representing textile companies, retailers, associations, NGOs, and research, all of them have been selected and invited by the Danish EPA; the chair was up to a director of a frontrunner textile company who pushed the work of the whole panel. The business' members of the panel were decision-makers (e.g. marketing directors) among them several frontrunners; the panel incorporated all important stakeholders (DK-5). The panel was supported by an external consultancy; two employees of the Danish EPA joined the panel, they acted as facilitators, they supported the panel work to make things happen and, together with the chair, they pushed the panel (DK-5).*
- *Building-construction panel: About 20 members of different stakeholders joined the panel representing producers, planers (architects), contractors, public authorities, researchers & consultancies. The panel was supported by an external consultancy; representatives of the Danish EPA, of the Danish Energy Agency and of the Danish Ministry of Housing and Urban Affairs joined the meetings.*
- *Electronics panel: The panel has had about 20 members coming from producers, industrial associations, consumers and NGOs, in general, decision makers were underrepresented and mostly technicians took part (DK-6). Besides them, two representatives of EPA have joined the meetings. The first chair retired after one year and was replaced by a representative of a company.*

The panels were not exclusively oriented towards the benefits of the participating companies; it was intended that results be disseminated to the whole branch.
The panels have been initiated by the Danish EPA. They received funding from public sources, with two components: a basic funding for operative work and a project-oriented funding targeting to finance specific projects of each panel.[96]

96 This funding has been paid out of the Danish Programme on Cleaner production; the textile panel, for example, has received about 800,000€ for 12 different projects (Nissinen and Parikka 2007: 1677), including the costs for an EU eco-label campaign in Denmark.

The Danish product panels are intended to bring together stakeholders from different backgrounds to discuss and elaborate specific actions. In addition to that, the panels should give administrations some hints on impacts of different policy measures on market actors, i.e. to stimulate the interaction between market actors and administration. The chair of each panel has been appointed by the Danish EPA. Their members have been appointed by public authorities in cooperation with the chair and consist of representatives of different stakeholders (see box).
In general, the role of public authorities has been a facilitating one. However, the authorities nominate the chair and the participants.

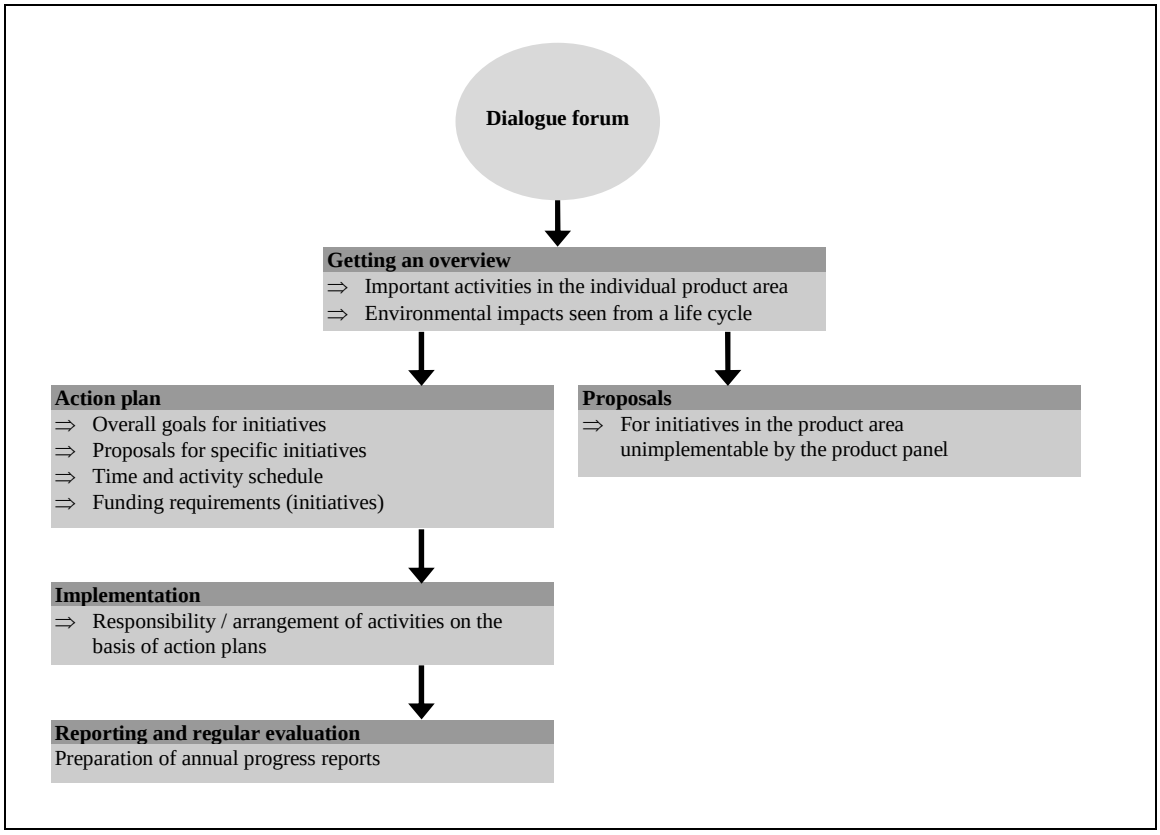


Fig. 2.11: Specific objectives of established Danish product panels
(Knudsen et al. 2003: 1e).

The panels were asked to prepare an overview of the most important challenges, mainly environmental ones, to draw up action plans which indicated different activities of panel members, to implement them and to prepare annual progress reports (see the process in Fig. 2.11). The central elements of the panels have been to come voluntarily together and to look for production of, marketing of and demand for cleaner products.

2.4.3.3 Assessment of product panels

In 2001, the Danish EPA ordered an evaluation of their panel approach (Knudsen et al. 2003). This was to be based on the experiences of the three panels which started at the end of the nineties.

Successes

– Textile panel: The panel could point to some successes related to its activities:
– The panel's work reached the objective with European eco-label, the Flower: In February 2001, 11 European eco-label licenses have been granted to Danish producers. This number increased in 2004 to 23, and in autumn 2007 to 30.
– The knowledge of the Flower among Danish consumers increased considerably from 3-4% to 37%, after an additional campaign was carried out in spring 2004 (Kvistgaard Consults 2005).
– The Flower is known and applied in the business-to-business market. Most Danish retailers ask for it.
– An environmental knowledge centre, financed by the Danish textile branch itself, was created and existed for some years. It was closed down. Parts of it have been integrated in the focus of a textile centre.
– Building panel: The panel elaborated an Action Plan which was a great effort as such. However, after its elaboration, the panel members decided to stop the panel work. No implementation of the action plan occurred. The main reasons for this failure were the considerable dissent among stakeholders, and also among public authorities, on the goals and the scope of the panel work. The different stakeholders did not actively support the actions and measures indicated in the action plan of 2001. Also the various public authorities involved did not represent a unique common position. The central competence for the panel was within the Ministry of Housing and Urban Affairs. It did not pursue a strict environmental strategy. Within the EPA, panel responsibility was within a department which was responsible for waste and did not take into account the whole objectives of the panel approach.

Nevertheless, an indirect outcome of the panel process was the initiation of seven projects in the branch, e.g. the treatment of slacks, the challenge of PCB in building material or the preparation of an IT tool for chemicals in buildings.

– Electronics panel: The panel has prepared two action plans, one for the period 2000-2003, and another one for 2003-2006. During the early years, the panel gained knowledge about the construction of greener electronics and disseminated that knowledge amongst Danish industry, especially amongst the larger Danish companies[97], e.g. by a guideline. By virtue of this, environmental issues were placed on the agenda of Danish business, and contributed also to some degree of greener products. After this phase, the focus moved towards retailers, procurement and final demand. It was believed that Danish companies that made "greener products" could act as good examples, also for importers . Success is regarded as modest. One of the proposals was to look for the application of an eco-label like the Nordic White Swan, but this initiative failed because producers did not support it.

Beside the modest visible *direct* outcomes, an important strength, and surely success, was the elaboration and application of a new type of dialogue among key actors which improved the understanding of each other. An exchange of opinions and insights increased knowledge and raised awareness in the participating sectors. The results of the panel work were disseminated to each of the branches. But, the take up of the companies was different. Whereas the textile branch was strongly influenced, the building and the electronics sector were not really active in implementing them.

97 Denmark mainly imports electronics. Only a few Danish producers like Danfoss, Bang & Olufsen or Grundfoss exist.

Environmental impacts

The Danish product panels have different patterns and degrees of success. All panels contributed to a spreading out of a common understanding, of a better understanding of each involved persons' opinions, strategies and thoughts and herewith they created a starting point for a spreading out of environmental awareness. Panel work was perceived as a come-together was not settled before the panel work started. In this respect, the work of the panel was effective although its degree of environmental impacts is hard to measure. Herewith, the panel work contributed to an awareness rising.

The construction panel focused on the supply side, the electronics started with the supply side and supplemented it by retailers and demand side afterwards. A direct impact to green products did not take place, in the short run. In the long run, there may be stimuli exist causality of which may often be unclear. In contrast to them, the textile panel tried to link supply and demand based on the experience that greener textiles need environmental aware consumers, remarkable is a campaign which linked suppliers, media, public authorities with the objective to push the European Flower on the Danish market.[98] These activities contributed to green(er) textiles available in the Danish market.

Economic impacts

The direct measurable economic impact of the Danish panels on turnover, competitiveness and profit[99] is modest, at least for the panels we examined. Of course, environmental benefits could result in reduced consumption of resources and reduced emissions which could reduce economic burdens, but very little evidence exists for this statement. However, there might have been benefits in being ahead of EU products regulations such RoHS and EuP in electronics.

Social impacts

The Danish panels did not dedicate much effort to social aspects. Awareness raising of producers and consumers are of relevance in this context. Social aspects of sustainability (such as child labour, and gender issues) were hardly dealt with, though the later procurement panel dedicated more attention to this challenge.

Political effectiveness

The Danish panels were intended to supplement the "classical" approaches of regulation and economic measures by a cooperative approach forming a triangle. Panels were one important element of this triangle. Knudsen et al. (2003: 37f.) stress the point that these three elements interact closely and strengthen interaction between the market and public authorities. One important outcome of the panel work was that bringing together people from different institutions increased and improved the common understanding. The exchange of opinions was considered as "inspiring for the future". That means that the idea of cooperation resulted in a new type of policy making which might change the governance system over the long run. The chairs of the panels also played a role in the political arenas. They acted as external voice at hearings of the authorities.

However, the change of government in 2001 from social democratic to liberal-conservative influenced the panel approach. The new government, which reduced environmental initiatives did not pursue this approach further. Most of the panels were closed. This change of government is a bar-

98 Nevertheless, Remmen (2006: 113) mentioned the inadequate marketing activities of textile companies for the EU flower as a key problem.

99 Pedersen and Neegaard (2006: 26) mention that a price differential between textiles with and without the European eco-label was almost non existent.

rier to judging the political effectiveness of the approach.

2.4.3.4 Barriers to success

The panel experiences have had some success, but some factors crucial for success could be identified:

- Panel work must have a clear mandate and a clear target. Product panels are not an end in themselves. They need *objectives*. Objectives should be agreed within an action plan which encompasses also intended action, a timetable and also vision. The action plan is an important management tool. The Danish construction panel is an example of a too broad a scope negatively influencing panel work.
- The *composition* of product panels is a "delicate" point. The members of a panel must represent the considered life cycle. On the one hand, it is essential to involve decision makers, i.e. persons who have a real decision power. But, one must be aware that time is a scarce resource for them. On the other hand, at least some front running companies are needed which really want to move things and change the market. This is demonstrated by the Danish textile panel. Awareness, interest and openness to new insights, discussions and proposals of committed people are necessary– without such attention, a panel will not work. The chair as the leader of a panel plays an important role. In the case of Danish textile panel, it was reported that the chairs, as enthusiastic and engaged persons, contributed largely to their successes.
- Product panel work needs a *budget*. Budgetary constraints might either stop or limit the ambitions and the action within panels. Continuous subsidies for panel secretariat and meetings and for actions and projects agreed within panels are needed to support these activities.
- Clear dissemination strategies sometimes did not exist, and panel work remained in the circle of the participants.
- Sometimes, there were insufficient linkages between supply and demand sides and insufficient involvement of retailers, who connect both sides.
- Uniform public authority strategies were missing, such as in the case of the Danish construction panel.
- Product panels need *rules*[100] of work which constitute the internal "mechanism". Rubik and Keil (2004: 25ff.) hinted to some key points such as a principle of consensus, voluntary participation, no sanctions, mutual acceptance and fairness, working groups. These rules should be agreed during the early meetings to clarify the playing ground.
- Imprecise or missing action plans indicate that goals could not be agreed.
- Small national markets and missing national global players.
- Foreign free-riding companies do not join the Danish panel approach and do not intend to share national policy initiatives.

2.4.3.5 Innovativeness and transferability of product panels

The Danish panel approach, as such, has been an innovation within Denmark. It has found a promising dissemination within environmental policies of the Commission and within a series of EU-Member States. The latter use a different term, but seem to have some relationships with this ap-

100 Rubik and Keil (2004) elaborated a summary of points important for a successful product panel. Complementary guidelines have been published based on two Bavarian pilot projects (StMUGV 2005, 2006).

proach. The expansion of the panel approach to countries like Spain is new and innovative to that country.
Although the Danish panel approach is almost completely over, its thoughts have been “exported” to future activities. The recently published Danish ETAP strategy (Danish Government 2007) incorporated elements of the panel approach in their initiatives, especially the one on a partnership for innovation (Danish Government 2007: 18ff..
This shows that a transfer of the panel approach has taken place. It seems that there are no “inherent” limitations for the transferability of the approach. The approach is linked to policy making. The panel approach needs some funding from public sources and it needs a “shadow of hierarchy” in the background. Public authorities must indicate their intention with, and expectation of, the panels and also announce what they intend to achieve.

2.4.3.6 Conclusions

Product panels are a new type of a co-operative approach to link and supplement the traditional regulatory approach and the market approach involving co-operation and self-direction. Panels are not an instrument in themselves.
Different contexts influence type and design of a product panel, such as the governance concept, and the visibility of “shadows of hierarchy”, market conditions (e.g. vertical range of manufacture, state of environmental knowledge and competences, size of the market). The experience of panels shows that a certain degree of common “identity” is needed to build up trust and to strengthen common approaches. Some of our interviewees stressed this point. Participants of panels need to meet and this is easier in a regional context (as in Bavaria, Catalonia and also smaller countries such as Denmark and Finland).
Product panels are a *procedural* approach, which co-ordinates actions among participants. This means that the implementation of different measures and instruments are an outcome of a panel effort. Most of the Danish product panels have contributed to an increase in awareness among participants and also the branch. They contributed to moving beyond compliance. A greening of markets is in most cases hard to observe. A clear indication of a certain change in the market is presented by the Danish textile panel. There, eco-labelled textiles, supposed to be more eco-efficient than others, are offered in the shops and consumers are aware of the eco-label.
Future panel efforts have to consider the above mentioned preconditions for success; namely, clear objectives, an appropriate composition, a sufficient budget and agreed rules. Their fulfilment might result in the contribution of panels to a greening of markets.
It is not appropriate to judge the outcomes of product panels on a short time axis. Things take time. In addition, environmental changes linked to product panels might fail to be judged on the short run. However, there is an obvious trade-off with the global dimension of strengthening environmental challenges. But, as said, experiments with panel work for encouraging more radical technical innovations miss their mark. This would be an interesting challenge for future panel efforts.
After all, the panel work and its implementation is a task (and challenge) for the participating actors and stakeholders. It is their final decision to do, or not to do it. The monitoring of outcomes, of actions and of challenges is important to ensure feedback loops; needed for policy to assess and evaluate the success of panels and to justify public subsidies. But, also, companies need to know if their investments have returns. Nissinen and Parikka (2007: 1681) proposed that “(…) the first checkpoint with respect to continuing/ending the panel may apply already after the first 3-5 meetings”.
Finally, we want to stress the contextual point of product panels. Panels are not a stand-alone approach. As the case of the Danish textile panel shows, co-ordinated action among public authorities, an eco-labelling competent body, business, retailers and NGOs formed the “critical” mass to

push eco-labelled textiles on the market. But, also the relationship between panel and business is of importance: product panel for general awareness raising and discussions of general ideas, company specific measures for innovative solutions.

2.4.4 Technology procurement

Technology procurement is a means of developing new technologies pushing suppliers' innovation processes, in order to develop "greener" products. Outgoing from an underlying environmental or socio-economic problem or need that has not yet been resolved, technology procurement gives the possibility of developing and demonstrating new technological solutions that are not yet available (CREST 2006: 15).
In this subchapter, we will look closer on the Swedish experiences.

2.4.4.1 Development of technology procurement

The tradition of technology procurement harks back to the public procurement for the specific purposes, especially defence materials, but also for development of large infrastructure systems (e.g. power supply, telecommunication, road building, water and sewage treatment). Those procurements had one, or a few, large buyers, as well as suppliers of equipment and systems (Nilsson 2003: 4).
In the context of sustainability, technology procurement is a seldom applied instrument which has not really spread in European countries.
An important frontrunner in applying technology procurement is Sweden. Since the end of the eighties, sustainable technology procurement[101] has been an issue for Swedish institutions. The Swedish Government considers public procurement as a powerful instrument to create innovative technologies, and as a strong competitive advantage for the country. Since the end of the eighties, technology procurement has been a key element in transforming the Swedish energy system towards increased use of efficient technologies. The Swedish national roadmap for implementing the European Environmental Technologies Action Plan (ETAP) mentions two actions related to technology procurement. These are: encouraging the procurement of environmental technologies, and investigating technology procurement describing the long lasting experience Sweden has had with this instrument. Sweden has worked with environmental criteria for a long time and in the nineties, local and regional initiatives were developed (Ministry of Sustainable Development 2006: 22f.).
In Germany, technology procurement has been rarely discussed as a viable instrument of innovation policy. Although a study has been commissioned to analyse innovation stimulation through public procurement in the early eighties (NUTEK 1993), an orientation towards demand-side innovation policy did not take place. Today, the Federal government reviews its strategy recognising that a demand-side innovation policy enforces the development of innovations and contemporaneously offers firms new market potential.[102] Technology procurement is also mentioned as one of the framework conditions in a progress report of the BMBF's high tech strategy (BMBF 2007: 9).
In its "Sustainable Procurement Action Plan", the British government intends "to reach UK to be among the European Union (EU) leaders in sustainable procurement by 2009" and formulates am-

101 In the Swedish literature, the term sustainable procurement is frequently used. The cases described fit with the above mentioned definition of technology procurement.

102 A famous example for innovation oriented technology procurement in Germany is the development of the toll collect system and costumers from all over the world show interest in this innovative system. See http://www.toll-collect.de.

bitious goals for its procurement strategy in order to achieve a low carbon, and more resource efficient, public sector (Defra 2007: 3).
Until now, there have been no comparative studies on technology procurement allowing a detailed insight into the degree of dissemination of the instrument in Europe.[103] For the Nordic countries, a report has been published recently (Bauer et al. 2008).

2.4.4.2 Description of technology procurement

Technology procurement can be considered as part of Green Public procurement (GPP), as a means of developing new technologies pushing suppliers' innovation processes in order to develop "greener" (e.g. energy efficient, resource saving) products. According to Bouwer et al. (2006), "Green Public Procurement is the approach by which public authorities integrate environmental criteria into all stages of their procurement process, thus encouraging the spread of environmental technologies and the development of environmentally sound products, by seeking and choosing outcomes and solutions that have the least possible impact on the environment throughout their whole life-cycle" (Bouwer et al. 2006: 5).
In contrast to regular public procurement, where public institutions buy existing products and no further R&D activities take place, public technology procurement occurs when a public institution "places an order for a product or system which does not exist at the time, but which could (probably) be developed within a reasonable period" (Edquist et al. 2000: 5). Two main concepts of technology procurement can be distinguished:

– If completely new products are created, Edquist et al. (2000: 2) talk about "developmental public technology procurement".
– The diffusion of products that are new in the specific context or country where procurement takes place is described as "adaptive" or "diffusion oriented" technology procurement (Edquist et al. 2000, 2). The respective technology must be adapted to another context, with other conditions, and therein lays the innovative effort.

Technology procurement is used to launch new products on to the market and/or to raise the market dissemination of products with superior performance characteristics (Nilsson 2003: 4). The linkage between both concepts is close. Other authors, e.g. Bauer et al. (2008) do not consider the second concept as technology procurement, but as aggregated or cooperative procurement.
In the following, we analyse the Swedish technology procurement activities. First, such approaches can be traced back to the eighties. Tab 2.2 summarizes some examples from the Swedish Technology Procurement Programme launched in the eighties.
These examples illustrate the applicability of technology procurement to several sectors, technologies and purposes. The required performance was mostly surpassed with a good margin by the winner, (Nilsson 2003: 5) and could be considerably improved compared to the best available products (between 17 and 50 %) (Suvilehto and Öfverholm 1998, appendix 1).

103 The report "Green Public Procurement in Europe" Bouwer et al. (2006: 9) states that seven EU Member States (Austria, Denmark, Finland, Germany, Netherlands, Sweden and UK) are currently implementing more elements of GPP than the "Other-18" Member States. The "Green 7" are characterised by national programmes or other strong political drivers addressing GPP for a number of years and information sources on GPP (e.g. national websites and other information resources providing product related criteria and specifications). 60% of the questionnaire respondents of the "Green 7" are using innovative procurement techniques (dedicated tools as life cycle costs) compared with 45% from the "Other 18".

Until the end of 1997, the Swedish National Board for Industrial Development (NUTEK) was responsible for technology procurement. At times, up to thirty five employees dealt with technology procurement (Bauer et al. 2008: 29). Afterwards, the Swedish Energy Agency (STEM) took over the responsibility. Currently, three employees deal with technology procurement issues (ibd.: 32). The National Programme for Energy Efficiency[104], funded by the Government and operated by STEM, aims to speed up the transition to a sustainable society through public procurement, by promoting the development of energy-efficient technical solutions.

Tab. 2.2: Technology procurement examples
(Suvilehto and Öfverholm 1998, appendix I, shortened).

	Programme	Year of announcement	Year of delivery	Required performance	Winner	Improved performance (%) compared to…		
						Best available	Average in market	Existing stock
Domestic	Fridge & Freezer	90	92	1kWh/liter and year	0.79 kWh	28	32	61
	Apartments' washing machine including drying	94	96	0.7 kWh/kg of dry washing good	0.6 kWh	50	80	-
Detached houses	Windows	93	95	1.0 W/m², K	1.0 W/m², K	17	44	-
	Heat pumps	93	95	Saving 8 MWh/ year for a specified type of house	8.3-9.0 MWh	-	-	30
	Water heaters	96	97	Max power loss 70 W	58 W	30	56	60
Transport & industry	Traffic lights (LED)	-	-	8 W per unit	compiled	87	-	-
	Electric cars	94	96	0.2 kWh/km and tonne	compiled	-	-	67

In the nineties, the Swedish Government established the Committee for Ecologically Sustainable Procurement, to promote sustainable public procurement by implementing guidelines and developing a common instrument. The central outcome of the Committee's work was the so called EKU tool which provides private and public purchasers with sets of environmental criteria for 20 different product groups. These criteria are based on scientific evidence and discussed and reviewed in

104 See http://www.sweden.gov.se/content/1/c6/06/36/35/8cc80743.pdf.

working groups consisting of representatives from all relevant actors, whenever necessary. This encourages a continuous dialogue between stakeholders, public purchasers, experts from governmental agencies and scientists. Afterwards, a decision committee reviews the outcome and publishes the criteria on a common internet-based platform for the public sector. This platform works as a voluntary guideline to support environmental considerations when purchasing goods and services. Furthermore, a network is installed in order to share new information regarding environmental procurement in the country. Even though the EKU tool in its original form generally supports GPP activities, it was a valuable basis for technology procurement. The EKU tool is more operational and specifically adapted to purchasers' needs, For example, it makes suggestions for mandatory requirements, award criteria and contract clauses. Through educational courses, which explain the conditions for environmental requirements in public procurements and present the EKU instrument, public purchasers are also activated (Ministry of Sustainable Development Sweden 2006: 21). Due to the institutionalised dialogues including all relevant actors, the EKU tool delivers a platform for technology procurement processes. A further development of the EKU tool[105] started in early 2008, with the aim of offering three different levels, providing more specific information for the entities, in order to ease the procurement process. At the moment, the criteria consist of technical specifications for different product groups, but only of one list of requirements, which has to be fulfilled. This is mostly at the lowest common working group level. The new three levels can be differentiated in basic, advanced and spearhead requirements; offering public entities the opportunity to choose which is most applicable for them. It is planned to provide detailed information of market coverage related to the certain level, but this requires a very good information basis and regular updates of market development.[106] Depending on the product, the formulation of spearhead requirements can be part of a technology procurement process. With the redesign of the tool, frontrunners especially should be pushed to improve the environmental performance of their products .
Technology procurement may be run in different ways. The model used with success by the Swedish Energy Agency includes a pre-study, the formation of a purchasers group consisting of both public and private purchasers, the formulation of a requirement specification, the tendering process and the evaluation of tenders. In the end, the winner of the tendering process is announced and the agency also supports the spread of information about the new product (Stigh and von Sydow 2007: 6). Unlike technology procurement in earlier times (e.g. weapons), where there was usually a single buyer only, many buyers must be bundled to create high demand. Because of the necessity of finding a common description of needs for elaborating the tender, this is also mentioned as a problem regarding the procurement process. A provision of funding can also be part of the agency's work, enabling purchasers to buy products at lower prices based in the bundled demand. In some cases, the innovation process itself has been financially supported by the agency. As accompanying activities, the agency makes relatively high investments for information campaigns around the new products and the activities of the agency. The costs for the procurement process are covered by the agency, funded by governmental programmes.
Swedish technology procurement has been accompanied by several activities:

– Development of guidelines for public entities that show how to use environmental management schemes and public procurement,

105 This tool will not called EKU anymore.

106 The elaboration of the new procurement criteria is very ambitious, requiring a market analysis before start up, a tender analysis considering the state of the art in tendering processes, the inclusion of national and international standards in the specific area and LCA data of the specific products, and finally a permanent information update.

- support for procurers with the verifying of their procurement processes, especially evaluation, by validating methods to measure environmental performance,
- provision of information for procurers with the aim that they understand technology procurement as interlinked process containing need analyses, market analysis, criteria formulation, evaluation methods, award, follow up, and
- information campaigns for new products.

The last point, in particular, played an important role in earlier projects of the Energy Agency; where sometimes 50% of the budget was spent for marketing campaigns. Also, it is worth mentioning that each technology procurement is a specific project with certain conditions, to which accompanying activities are adapted to.

2.4.4.3 Assessment of technology procurement

Between 1990 and 2005, the Swedish Energy Agency has performed more than 55 technology procurements; most of them in the building sector, a few in the transportation sector[107] (Stigh and von Sydow 2007: 10).
Regarding the EKU tool, it is generally difficult to say how the public entities use it. In its yearly assessment of the EKU tool, the Swedish EPA stated that around 60% of public entities are using environmental criteria in procurement and 40% use the EKU tool (data from 2006). But, in the assessment it is not considered how, and to which degree, they use the criteria – particularly, if the ecological award criteria have a high score compared to other criteria as purchasing costs. It is assumed that the criteria are mostly used for weighting in the award.

Successes

Anyway, even though the numerous projects were not evaluated with special focus on innovation potential, the interviewed experts (representing NUTEK/SMR and the Swedish Energy Agency) have no doubt about the effectiveness of technology procurement in order to push innovations. Bauer et al. (2008: 29) mention that about 40 led to innovative actions. They consider public entities an important player for pushing innovative technologies. For particular products, a market change towards more sustainable consumption and better performance standards was observable (e.g. heat pumps, fridges). Particularly worth mentioning is that technology procurement always addresses the frontrunners by using award criteria with high scores and that it “moves forward the front”. The major part of innovation addresses the stepwise performance improvement of existing products, e.g. reduction of energy consumption during usage, material usage). This correlates with the literature, where also for the majority of cases the effect was described as stepwise improvement of product performance, and not the development of a new product.
Finally, a continuous innovation process is more probable when several large buyers request a product or technology, as in an oligopsonistic market.[108]

Environmental impacts

107 The report “Technology Procurement in Sweden” summarising experience from technology procurements in Sweden gives a good overview of the projects (Stigh and von Rydow 2007).

108 For further specification see Edquist et al. (2000).

Positive environmental impacts which are an outcome of technology procurement activities have been realised. Tab. 2.3: Results and environmental benefits of selected Swedish technology procurement activities
(Bauer et al. 2008: 29) reports on some Swedish experiences connected with technology procurement activities.

Tab. 2.3: Results and environmental benefits of selected Swedish technology procurement activities
(Bauer et al. 2008: 29)

Project area	Result	Energy reduction
Refrigerator/Freezer	From 1.2 kWh/litre comparable volume per year to 0.8	By 33%
Clothes washers & dryers for laundry rooms	From 2.6 kWh/kg laundry to 0.8	By 70%
Ventilation. Replacement of fans in residential area	From 750 kWh/apartment and year to 380	By 50%
High-frequency ballasts for lightning	Price reduction by half Accelerating market	By 20%
Windows	From 5,900 MWh/year to 3,300 MWh in one project in Västerås	By 44%
Heat pumps	Two different suppliers were chosen for further development and deliveries	By 30%

Also Defranceschi and Hidson (2007) report on positive impacts of technology procurement activities.

Social impacts
Social impacts have not been reported in the case of Swedish technology procurement.

Economic efficiency
When evaluating the economic efficiency of technology procurement, one has to differentiate between the procurement process on the one hand, and the efficiency of the products on the other hand. Through the incorporation of environmental criteria technology, procurement takes more resources than conventional procurement. And, due to the development phases and the intensive information exchange between the procuring entity, buyers groups and potential suppliers, the procurement process takes more time than a comparable conventional procurement. Therefore, the financial support by Governmental programmes is indispensable; particularly, for small public entities. The implementing agencies also gave financial support to the technology development of some products. Further, there are always promising supporting activities that cannot be covered by the procuring entity without governmental support. Therefore, the success of the instrument depends on the duration of financial supporting and the resources available for information and dissemination campaigns.
The costs of a whole procurement process depends on the kind of product and testing standard and varied for the selected procurements of the STEM between 2 and 10 million SEK (~ 200,000 to 1 million €) (Stigh and von Sydow 2007: 28). They are covered by the government through the programme. From a selection of technology procurements within the energy sector, the costs of technology procurement processes can be divided into project leading and purchaser group administration, information (labelling, education), technical specialists, tests and evaluation, grants to bids

which fulfil the obligatory requirements and premiums to buyers of the winning product. Where the money is needed most, depends on the product. Generally, marketing, requirement specification and evaluation are the largest costs (Stigh and von Sydow 2007: 28).
More eco-efficient products are often more expensive in their production. But, for estimating the economic effectiveness of the products, the purchase price represents just one aspect of the total cost of ownership. Therefore, the most advantageous product has to be selected using concepts like life cycle costing (LCC) (w.N. 2007: 15f.).
But the price premium is not given, Bauer et al. (2008: 31) report that the Swedish technology procurement of heat pumps resulted in a reduction of energy consumption of 30%, as well as a price reduction of 30%.

2.4.4.4 Barriers to success

Technology procurement has had some success, but there are also some crucial success factors affecting the influence of this approach:[109]

- Framework setting: It is important that the government provides a legal and financial base which should be supplemented with accompanying activities (e.g. information campaigns improving the dissemination and market establishment of the products).
- Political commitment: technology procurement needs an appropriate political context by signalling the will of authorities to pursue this approach.
- Sufficient competence, capacity and commitment of procuring entities: The ability of public entities to manage technology procurement processes depends on their technical know-how, their experience and respective awareness and capacity building measures. Particularly, when the technical know how is limited, market knowledge needs to be developed and regularly updated. Formulation of technical specifications in a way that leaves open the possibility of innovation requires attentiveness and information on existing guidelines and international standards, and creating a fair and equal evaluation is not possible without well formulated and tested evaluation criteria.
- Long-lasting approach: Technology procurement might take several years. This implies that technology procurement can only be successful, if it is integrated in long-lasting programmes with the aim of optimising products that are planned to be used in sufficient quantity.
- Dialogue and market surveillance: public procurers should “act as an ‘intelligent’ customer” (w.N. 2007: 8) and communicate plans to suppliers. Dialogue and cooperation with the enterprises establishes trust and increases the enterprises’ willingness to engage. The dialogue and market survey is further important to meet the tender requirements regarding the formulation of specifications in a way that at least three suppliers can afford with an offer. Such dialogues enable a procurer to consider the views and experiences of suppliers, before starting the procurement process.
- Change from requests for specific technologies to setting specific performances: For a competitive innovation process the formulation of criteria should be performance and function based instead of describing the characteristics of a product. This enables the suppliers providing a necessary technology to achieve the set levels without determining a certain technology (Hidson and Müller 2003: 26).

109 See also the guide on ten elements of good practice supporting innovative solutions in public procurement (w.n. 2007) and Rüdenauer et al. (2007a, b).

– Measurable criteria: the evaluation of product performance requires measurable and comparable criteria that ensure an equal and fair evaluation. It is not easy to prove whether the new technology to be supported has the expected stage of environmental friendliness. If there is no standard measurement method, it needs to be developed, and in some cases there are many different performance categories of a product one has to look for (e.g. noise, design, maintenance). The measurement development has to be financed by the agency that is managing the procurement.
– Combining management responsibilities: to allow an effective management and controlled information flow, the whole process needs to be managed from the same agency. A more efficient coordination ensures the learning process for future procurements.
– Demand side management: the producing industry needs a certain commitment that someone will buy their products. Otherwise, they will not invest money in development. Therefore, the building of a buyers group is an important step and the managing agency should try to convince potential buyers, and try to ensure that the new product will be bought at the end (e.g. through letters of intent or preliminary agreements). This also means that technology procurement is easier to realise for big communities or agencies coordinating country-wide demanding groups to create the required demand. Another possibility is cooperation between several communal authorities in order to reach the necessary demand strength.

2.4.4.5 Innovativeness and transferability

Technology procurement as a tool of SCP has been pursued in some countries, like Sweden. Their more intensive application is not an innovation. But the transfer to other EU Member States can be regarded as an innovation.
A transfer of this concept seems possible, but must be embedded in the national procurement framework and traditions. It seems to be more appropriate in countries with entities responsible for a larger demand volume. In decentralised countries, the critical mass for stimulating innovations might be too small.

2.4.4.6 Conclusions

Technology procurement requires widespread structural commitment at the highest policy level. Its effectiveness depends on its political prioritisation, e.g. the importance of environmental aspects in general, and particularly in innovation policies, the existence of flanking regulations and the degree of obligation regarding the implementation of the strategy. Flanking measures like awareness raising and information campaigns, financial incentives for enterprises, and research and development activities should support procurement activities.
However, the application of technology procurement as an innovation strategy means “shifting from old and comfortable habits to a new method” (CREST 2006: 15).
The change from “traditional” procurement, where the investment costs were the determining factor, to technology procurement needs a lot of time and awareness raising efforts. Due to the fact that according to public procurement directives, procurers are urged to buy the most economical offer and to implement their procurements in a transparent and non-discriminatory manner, there lies a natural risk-aversion in the purchasing behaviour of procurers. Here, the OECD findings highlight, that the barriers “(…) do not relate to their overall cost, but rather to the means by which public expenditure decisions are taken” (OECD 2007: 22). Further, the OECD report indicates with respect to the legal concerns, “that it is not so much the existence of explicit legal constraints on the use of environmental criteria in pubic procurement which is slowing the take-up of GPP, but rather risk aversion by procurement officers with respect to the interpretation of the legal framework” (OECD

2007: 22).
To turn public procurement into a strategic tool for pushing technology innovations, risk-incentives will be indispensable (National IST Research Directors Forum 2006: 29).
Summarising, it can be stated, that the challenge lays in moving from pioneer activities to general rules of procurement. Success lays in the combination of political appreciation for the instrument with a structural and focused information offer for the executing and implementing municipality and support by experience (Erdmenger 2005: 21). Further, technology procurement is not just an issue for procurers, but many other actors need to be involved and influenced. If technology procurement it to become part of an innovation policy oriented towards sustainability, the overall perspective is an important precondition in order to include the innovation potential of all policy resorts (Kuhlmann 2005).

2.4.5 Other innovative instrument for a greening of markets

In addition to the three approaches and tools presented above, there are other interesting examples of greening the markets that we collected. Two of them will be presented here, namely white certificates and a connection between product charges and eco-labels.

2.4.5.1 White certificates

Description
Emission Trading Schemes (ETS) have become quite well known in recent years. An instrument with some similarities is a “White certificate” – also referred to as Energy Efficiency Title (EET). White certificates are instruments of modern energy policy that are generated through increases of energy efficiency and correspondingly certified. The idea is that public authorities impose energy saving targets on power suppliers or distributors. To this end, power suppliers have to implement energy efficiency projects with certain end-customers – mainly households or industry, but the sector coverage varies with the policy maker’s objectives from one country to another. Obliged parties demonstrate the fulfilment of their target by presenting white certificates that attest a certain amount of saved energy. Thus, target compliance requires submission of the number of white certificates that corresponds to the pre-assigned energy saving target. Parties that save more energy than they were required to can sell the additional certificates to other obliged parties who use the certificates to meet their own targets. Prices for certificates are set openly by the market.
The targets are set by public authorities which should find the right level in setting the initial saving targets. Overly ambitious targets risk stalling the scheme; while targets that are too lax will decrease the value of white certificates so much that that the incentive for energy savings becomes very low (Bertoldi et al. 2005, Langniss and Praetorius 2004).
Whether parties decide to implement energy efficiency measures themselves, or to buy white certificates from other parties, depends on their marginal cost structure. If the price for a white certificate exceeds the cost of implementing an energy efficiency measure the party will choose the latter. If, on the other hand, the energy efficiency target can be attained in the least costly way by buying white certificates from others, this would be the logical choice. The setting of obligations guarantees that the energy saving target is achieved; whereas the tradability aspect of the certificates enables the objective to be met in a cost-effective way (Oikonomou and Patel 2005: 3f.).
The innovative aspect of white certificate trading is that an environmental good, in this case energy efficiency, obtains a monetary value for power suppliers and distributors, who otherwise would not have any interest in saving energy, as their business is selling electricity and not energy efficiency. Market forces help, through the price mechanism of the certificates, in finding the most efficient means of reaching the set target; encouraging their clients to some savings in their own activities.

Experiences

There is no common European EET scheme yet. Only national or sub-national white certificate systems exist. These systems, in turn, vary in their technology and sector coverage as well as in their measurement category. Some country examples are:

- The World's first operational White certificates scheme started in **Australia in 2003;** more precisely, in the state of New South Wales (NSW). White certificates in NSW are part of a larger scheme, the "NSW Greenhouse Gas Abatement Scheme", which is a mandatory system to reduce the greenhouse gas (GHG) intensity of electricity generation. The scheme establishes annual state-wide GHG reduction targets for electricity retailers and certain other parties, which together are called "benchmark participants". For each benchmark participant, the scheme sets an individual reduction target for GHG emissions, based on their share of the electricity market in NSW. If these parties fail to meet their benchmarks, a penalty is assigned. Monitoring the performance of benchmark participants is undertaken by state authorities. However, benchmark participants can also surrender "NSW GHG abatement certificates" to offset their excess emissions above the level of their GHG benchmark. One abatement certificate represents one tonne of CO_2 that would have otherwise been released into the atmosphere.

These abatement certificates can be created in four different ways – one of which constitutes them as "White certificates":

– Carbon sequestration,
– low-emission generation of electricity,
– on-site GHG-emission reduction, not directly related to energy consumption, and
– activities that result in reduced energy consumption.

The latter way is also called "demand side abatement" and creates certificates that meet the definition of a white certificate. They serve as a proof that energy saving measures were implemented and the demand for energy was reduced.

All abatement certificates created under the NSW scheme may be traded for one another, regardless the way of their creation. The fine for non-compliance with benchmark participants' reduction targets sets the maximum price for one certificate.

To March 2005, 8% of all certificates created under the NSW GHG abatement scheme resulted from energy efficiency projects and are thus White certificates. As energy efficiency is increasingly recognised as the lowest cost GHG abatement option, White certificates' share of all certificates in the market is due to rise. However a major issue has been the large transaction costs for small energy efficiency projects. Applicants have to pay a fee for each project to be verified and accredited (Crossley 2005). In 2006, the certificates offered for surrender increased by 45 % compared to the 2005 compliance year (IPART 2007: 12).

– In **France**, energy saving obligations have been set for the suppliers of energy since 2006. Suppliers of energy (electricity, gas, heating oil, liquefied petroleum gas – LPG, heat, refrigeration) must meet government-mandated targets for energy savings achieved through the suppliers' residential and tertiary customers. The Government's stated goal is energy savings equivalent to 54 TWh between 2006 and 2009[110]. In principle, all energy saving measures in all sectors are eligible, as long as they are not covered by the European CO_2 emission trading

110 See http://www.industrie.gouv.fr/energie/developp/econo/f1e_eco.htm (accessed August 21, 2007).

scheme. The measurement category used is avoided final energy. Certificates are delivered after the efficiency programs are carried out. There is no formal market organized by the French state; yet energy suppliers are able to trade the certificates among themselves. A maximum price for the certificates corresponding to the fine for non-compliance is set (Monjon 2005).

– Up to July 2008, three enterprises contributed to most of the energy savings: Électricité de France with 55 % of the obligations, Gaz de France (25 %) and Ecofioul with 10 % In July 2008, i.e. one year before the end of the scheme, only 40 % of the aspired energy savings had been realised. For the next period, i.e. after 2009, it is envisaged that the transport sector might be included[111].
– **In Italy** the white certificate scheme started in 2005. The obligations are set for distributors of electricity and gas with more than 100,000 clients, who carry out energy efficiency projects in their clients (households and all kinds of industries) to meet these obligations. At least 50 % of the energy savings have to be achieved through direct energy savings of electricity or gas. Up to 50% of energy savings may be realised through changes in fuels. In the year following distribution of the certificates, the Italian Authority for Electricity and Gas verifies the distributors energy efficiency projects and allocates the corresponding white certificates to the distributors. Distributors can then trade the certificates among themselves to fulfil their obligations in the least expensive way (Oikonomou and Patel 2005: 14-16, Langniss and Praetorius 2004: 8). The Italian scheme uses units of primary energy as its measurement category. At least within the first five years after the introduction of the white certificates, suppliers are not allowed to increase energy prices which means that the economic risks are born by the providers.

  The objective of the scheme is to save between 8 and 9 million tons of CO_2 before end of 2012 (about 8% of the Kyoto-goal). The objectives for the energy savings nearly double every year. In the first monitoring, measures that led to an energy reduction were: the use of efficient household appliances (33 %), efficient street lighting (27 %) and the usage of cogeneration, photovoltaic and local heat (21 %). During the first year of the saving quota, the energy saving measures contributed to the prevention of 0.75 million tons CO_2 which was already beyond the stated objective (Bürger and Wiegmann 2007: 32-36).

– In 2002, the **UK** government launched “Energy Efficiency Commitment (EEC)1”, an energy saving programme that ran until 2005. Currently EEC2 is in operation for the period 2005-2008. The programme sets efficiency targets measured in avoided final energy to the suppliers of energy to households. Suppliers are required to meet their obligations by assisting domestic customers to take up energy efficiency measures. There is an additional requirement to realize at least half of the savings in the social housing sector (i.e. households with low income) and to carry out the remaining efficiency projects for pensioners and other low-income customers (Oikonomou and Patel 2005: 17-19, Langniss and Praetorius 2004: 7). Strictly speaking, this is not a white certificate scheme as no certificates are being issued. Yet, power suppliers can trade their obligations. They are just not being translated into a tradable commodity.[112]

  During the period of EEC1 0.32 million tons CO_2 were saved (0.3 % of the British Kyoto-goal) and the objective for the current period to 2008 is to save 0.5 million tons CO_2. To finance the

111 See http://www.actu-environnement.com/ae/news/objectif_certificats_economies_energie_5464.php4 (accessed 17 July 2008).

112 See http://www.defra.gov.uk/environment/climatechange/uk/household/eec/ (accessed 21 August 2007).

energy saving measures, the companies are allowed to pass costs on to the consumer (for the consumer this meant an extra cost per year of about € 5.35, but lower energy usage). The most used measures to save energy were house insulation (56 %), energy saving lamps (25 %), the introduction of energy efficient domestic appliances (11 %) and measures concerning heating systems in houses (9 %).
The enterprises were also allowed to transfer their energy-savings from the first to the second period when they had already achieved their targets (but these surpluses are discounted with 3.5 % per year). For certain defined measures, it is possible to upgrade the energy savings ("uplift factor") when they are particularly innovative and lead to a faster market transformation (e.g. for household appliances[113]). These measures must not exceed 10 % of the total objective.
The UK approach is, in a strict sense, not a white certificate scheme because certificates will not be allocated to the companies. But the regulatory organisation could be asked for permission to trade energy efficient measures.

– Energy saving targets as instruments to induce energy efficiency projects and reduce the demand for energy are also used in the Flemish part of **Belgium**. There, like in Italy, obligations are set to the distributors of energy and the measurement category is primary energy. However, there are no White certificates, as there is no market to trade energy efficiency targets or the resulting energy savings. Thus, an important feature of white certificates is missing; the tradability aspect that leads to cost-effective ways of energy saving.

All countries have prepared lists with standard measures which could be applied to reduce the consumption of energy.

Outlook

A common European market could prove difficult to attain, as national schemes vary largely. Italy uses primary energy for the measurement of energy savings and thus as the unit of a certificate, while in France and Great Britain the unit of avoided final energy consumption is used. Great Britain, in turn, includes not only environmental objectives but also a social objective in its "Energy Efficiency Commitment" programme. Neither country would be pleased to adapt to a European scheme which deviates from its national definitions and objectives. Not surprisingly, there are still no plans whatsoever to link existing white certificate schemes at the broader European level. Only a European project named "Euro WhiteCert"[114] exists that tries to push the establishment of a European system.

113 Indeed, a market transformation took place for refrigerators and washing machines as the sales of washing machines with the energy efficiency class A has grown since 1996/97 with more than 60% and of refrigerators with about 40%.

114 See http://www.ewc.polimi.it/ (accessed July 17, 2008).

2.4.5.2 Product charges and eco-labelling

Description

In Hungary, a system of product charges has been introduced in 1995[115].Their level is different for each product and is calculated on the basis of the products's weight. The following products fall under this charge:[116]

- Lubricating oils. The basis of the product charges is the volume of other crude oil products, amounting up to 0.43 €/kg,
- tyres are taxed between 0.12€ per kg (new imported tyres) and 0.48€ per kg (old imported tyres),
- refrigerants are subject to two different charges: concerning the use of ozone depleting substances the charge is 0.40€ per kg (soft Freon used) or 0.99€ per kg (hard Freon used); additionally, refrigerants are taxed between 2.84€ and 13.24€ per unit when they are disposed as waste,
- packaging materials are charged from 0.01€ to 0.04€ per kg (or in case of different beverages, alcoholic drinks or in case of plastic bags, one has to pay per product up to 0.24€)
- the product charge for batteries is between 0.49 and 0.68 € per kg (batteries for radio telephones are charged 4.15€ per kg); according to an OECD-database car batteries are taxed 0.15€ per kg,
- commercial printing paper is charged 0.10€ per kg (if they contain advertisements),
- electrical appliances and electronic equipment are charged 0.36€ (major household appliances, except refrigerators (since 2008 they are also in this category); small household appliances; electric do-it-yourself machinery and tools), 0.39 € (information and telecommunication equipment; control, monitoring and surveillance equipment), 0.40€ (vending machines) or 0.44€ (home entertainment goods; games, toys and sporting equipment) per kg. Radio telephones, on the contrary, are taxed 41.95€ per kg.
- packaging of beverages are charged per unit. Depending on the material, and the size, the price is between 0.01€ and 0.29€,
- plastic bags (enterprises which use the "Green Point" or a similar label get a reduction of 75%; if they use additionally an eco-label, the whole charge is omitted).

The charge must be paid by the first domestic (i.e. Hungarian) distributor if the products are manufactured in Hungary or the European Union. For products that are imported from outside the EU, the person treated as customs debtor is obliged to pay the charge. In the case of retail packaging[117], also extra, the resale buyer of the domestic distributor must discharge the tax.

Product charges priority is on incentive effects. They have a motivational effect on consumers if they discourage the purchase of polluting products and on the producers if they facilitate the production of environmentally sound goods that are not subject to the charge.

The second aim of these product charges is to create a fund to finance those activities that can prevent or decrease the impacts of products on the environment during production, usage and after usage. Revenues from product charges could also be used to sponsor other environmental poli-

115 See http://www.uneptie.org/Ozonaction/information/mmcfiles/3946-e-hungary.pdf (accessed July 28, 2008).

116 See http://www.magyarorszag.hu/english/keyevents/a_vallalk/a_adopenz/a_vallalkadok/a_kvtermekdij20080425.html?highlight (accessed July 28, 2008).

117 This term is a collective name for bottle packaging of different drinks and plastic bags.

cies.

The Hungarian government set up a special incentive for producers to include environmental concerns in their product design. Products regarded as “environmentally safe” obtain a 25% reduction on the product charge. The Hungarian eco-label serves as proof. This means that producers that have successfully applied for the eco-label only pay 75% of the normal product charge rate. For example, electronic equipment having been granted the eco-label would be taxed 0.30€ per kg instead of 0.40€ per kg.

The legal framework for a Hungarian eco-labelling system was introduced in 1993.[118] A producer applying for the eco-label must meet predefined criteria. Currently, requirements have been elaborated for 52 product groups.

The Ministry for Environmental Protection and Water decides on the applications. The decision is based on the recommendation of the “Certification Committee”, consisting of representatives from public authorities, science, environmental organizations, consumer groups, distributors and healthcare. The right to use the eco-label is granted for a minimum of one, and up to a maximum of four years.

In the case of product groups that are eligible for the European-Flower and the Hungarian eco-label, the Hungarian criteria are decisive. As for refrigerants, the criteria for the EU-flower are stricter than their Hungarian counterparts, which means that imported products that have granted the flower will also meet the Hungarian label’s criteria in order to be charged with the reduced tax rate.

Experiences

In 2003, the tax revenues of the fund which came, not only but mostly, from product charge were approximately 60 million €. This money was used mostly to motivate waste collectors and for other environmental projects waste water.

The two aims – giving incentives and building up a fund – changed over the years. The name of the fund has changed several times, and since the beginning of 2005 this fund has been dissolved, with all tax revenues going to the central budget and only the Ministry for Environment and Water officially (according to the law), should get back some money to support for some waste collecting activities concerning those products which are obliged to be paid product charge. In 2007, the total revenues from product charges were 91.4 million €.

In 1999, a report on environmental policy in Eastern Europe concluded with the criticism that the product charges only partially visualized the connection between a product and the environmental

118 For more information see the official Hungarian website: http://www.kornyezetbarat-termek.hu/angism.htm.

damage. The revenues were directed into the central environmental protection fund: As long as no further instruments are introduced and product charges are used to provide environmental subsidies across other sectors, the Polluters Pay Principle is only partially implemented (Klarer et al. 1999).
Almost half of the Hungarian eco-labelled products belong to product groups covered by the environmental taxes. The number of certified products and their producers in Hungary is increasing. By June 2008, there were 31 companies producing 325 eco-labelled products. In contrast, six years earlier 19 companies produced only 120 certified products (Scherlowsky 2006: 118-121). However, the progress of the eco-labelling system in Hungary is not so much driven by the environmental awareness of Hungarian customers. Rather, this growth is advanced by the reduction of environmental taxes, but mostly in the field of plastic bags. But critics say that the incentive does not work. According to them, the incentive aim is only nice wording in the preamble of the Hungarian regulation; it functions mostly as an extra taxation for these products with little environmental effects.

Outlook
The example of a connection between a fiscal incentive and an external certification system, namely an ISO-type I eco-label is an interesting one because, on a conceptual basis, this could stimulate the dissemination of eco-efficient products. Nevertheless, the experiences are not very promising. It is necessary to examine the system more deeply to look for strategic consequences, especially in the context of the just published EU SCP action plan (see chapter 1.2).

2.4.6 Conclusions

General impressions
The cases presented in this chapter demonstrate that the term “policy instrument” is an ambiguous one. The Dutch Green Funds Scheme and technology procurement are unique policy tools. Product panels are a cluster of different tools and approaches. Therefore, they are less of an instrument; rather a *procedural* approach for agreeing measures and activities among a group of different stakeholders.
The instruments presented pursue the goals to improve the environmental performance of products and services and to increase their market penetration. A phasing-out of laggards is not dealt with by these tools. Also, we have not found innovative tools and approaches dealing with this strategic component introduced above (see Fig. 2.9, p. 72).
The temporal horizon of the tools is different. After their implementation, some instruments like white certificates and technology procurement might green the market within a shorter period. Other instruments, like GFS and the combination of product charges and eco-labels, have a longer impact chain and needs more time to support greening of markets. Product panels could have a lasting effect in the long run only.
The focus of the tools is concentrated towards the environmental dimension of sustainability. Social and economic aspects are partly considered, but are not the main aspects dealt with. Extension towards other dimensions is possible, but needs some additional efforts, especially because the operationalisation of the social dimension is difficult and the opposition of stakeholders is supposed to be stronger.

Government, governance and involved actors
The instruments we considered need different forms of public involvement. We have not found clear evidence that self-regulatory approaches work without any government involvement. We conclude that a shadow of hierarchy is needed to “encourage” the success of self-regulatory instruments. We got some hints that a hybrid type of governance, instead of a pure change from a strong

government to strong governance (Jordan et al. 2007) is pursued:[119]

- Instruments need the involvement of public authorities, e.g. framework conditions (for technology procurement, GFS, white certificates), financial support (e.g. in form of governmental programmes and budgeting).
- Instruments like product panels need a clear signal that public authorities support them and would act, e.g. by implementing regulation, if the outcome of the collaborative efforts is not enough.
- GFS, white certificates and technology procurement need a public based and monitored verification regime of the fulfilment of the requirements to justify public funding and to check fulfilment of obligations.
- A retreat of government from the market and a reduction in the public budget is often considered as a more cost-efficient approach which reduces public involvement and contributes to a leaner and better regulation. We observed that the instruments we considered need public money; they are not free of costs tools. Technology procurement especially requires the mobilisation of public procurement and the corresponding public funds; but also GFS and product panels need public finances. This might contradict the retreat request.

Multi-actor perspective

The instruments we considered in this chapter are focused on supply and demand. They are not restricted to one side of the market. GFS needs a plethora of actors involved, besides the consumers as investors, the banks and the target group, namely the producers. Technology procurement defines customer demands and transmits them to manufacturers. And, product panels try to engage a plethora of different stakeholders in the process and might link product development with market dissemination.

This aspect hints also to the strong need for cooperation among different stakeholders. Product panels, GFS and technology procurement will not work if trust and partnership do not exist – they are needed for getting reliable atmosphere and a clear and calculable framework must exist.

The formulation and implementation of some of the instruments we analysed needs time. The building up of a network of actors who agree on coordinated policy action requires some patience and acceptance that this could not be carried out in a few months. This request for patience might be in conflict with policy requests asking for quick and visible results.

Flexibility, adjustment and update

The tools we considered possess interesting dynamic components. Technology procurement is an approach requesting environmentally more benign offers than available on the market and gives some incentives for product innovations. Product panels are flexible and possess a dynamic aspect if frontrunners join the group which intend to green the market and to improve the environmental features of the products available on the market. Herewith, markets could receive incentives to improve and become more dynamic.

In contrast to this case by case adjustment processes, the requirements of GFS and of the Hungarian eco-label could be updated, but this must be agreed according to formal procedures which might take some time and decrease the flexibility and adjustment potentials. White certificates are a tool which needs an appropriate and reliable planning horizon that means that the freedom to up-

119 See section 1.3 for a broader view on this aspect.

date them might exist, but might be restricted due to policy barriers (missing acceptance of target group).

Impact chains, assessment and monitoring

The length of the potential impact chains differs between the tools considered. If implemented, white certificates intervene directly in the market and stimulate corresponding adaptation measures. The impact chain is “short”. To the contrary, product panels have a complicate, multi-level adjustment process which results in a “long” impact chain, and which depends upon the specialities of a panel. GFS, technology procurement and product charges/eco-labelling are positioned in between the two poles.

We did not find any formative, i.e. ex-ante, evaluation of the potential impacts of the cases we considered. An evaluation of the instruments does not seem to be a prior-ranking aspect for the initiators.

Comprehensive, summative evaluations have seldom been carried out; either due to the change of the Danish government which closed panel activities, or due to a restricted objective of assessment reports. Therefore, effectiveness and efficiency in the cases we analysed are hard to report except for the case of GFS.

In most cases, the effectiveness of an instrument strongly depends on long term governmental support (financial, legal) and a generally positive political attitude. Measurable success can often not be noted until a period of several years, and there is the risk that successful approaches become victims of a change in government.

Transferability

In general, a transfer of the cases we considered to other countries might be possible. Whether a policy instrument could be recommended, not only depends upon its effectiveness and efficiency in a specific context. It is also a matter of fit with the (sustainability-related) political and social culture, i.e. the level of policy development. It appears fairly unlikely that some of the Eastern European Member States would engage strongly with innovative tools while there are other, more pressing, sustainability concerns untackled.

Product panels need a discursive culture of communication, a certain degree of common “culture and bargaining in a country, and the existence of frontrunners. Technology procurement requests the clustering of public demand from different procurers to reach a reasonable demand to mobilise innovations from suppliers. White certificates will only work if energy providers have potential to cooperative with their clients to mobilise energy saving potentials, and public monitoring and verification is a must. These examples demonstrate that the contextual situation influences the application potential of instruments.

Also, the level of consumer environmental consciousness has an impact on the social acceptance of certain instruments (e.g. the involvement of private consumers as target group of energy providers, interest to invest in the green funds).

3 Empirical Insights

This chapter reports on the ASCEE team’s insights from the empirical research carried out. Firstly, we discuss the findings from the point-of-view of the main addressees of the policy interventions, i.e. the producers/suppliers on the one side and the final consumers on the other side (see section 3.1). The following section, 3.2, puts the empirical results in the context of the government-governance debate introduced in section 1.3. Closely linked with this, the role of stakeholders in a sustainable consumption policy is elaborated on (section 3.3). During our empirical work, we also

discovered some new elements in the design of policy instruments. We report on them in section 3.4.

3.1 From Production-Oriented to Consumption-Oriented

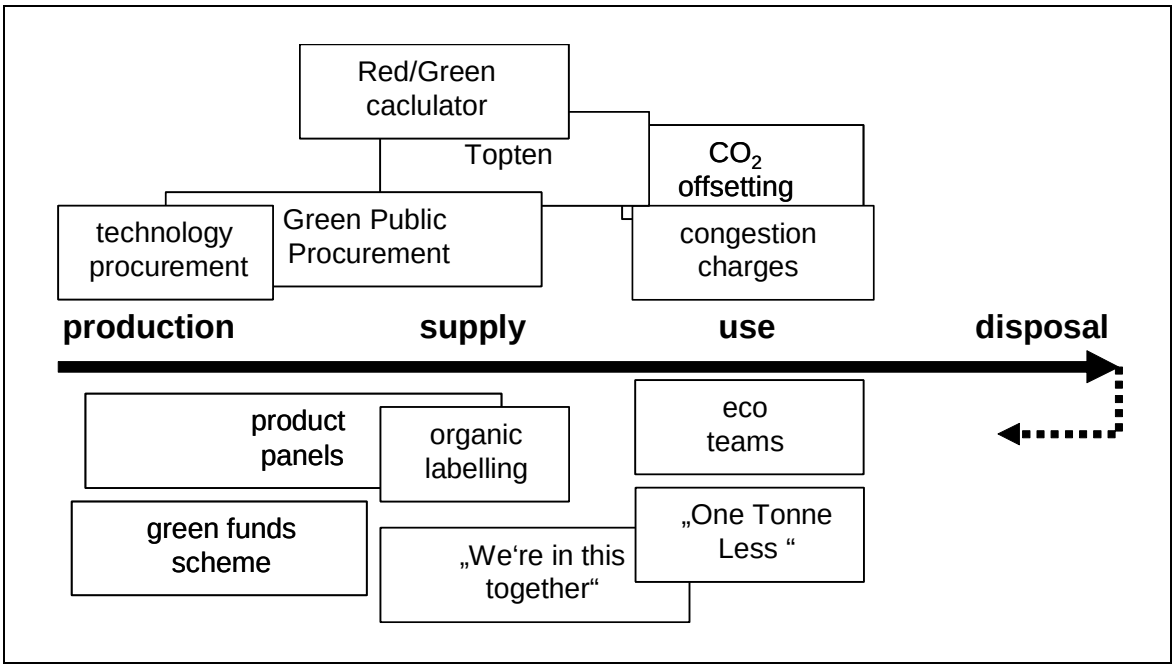


Fig. 3.1: Touchpoints' of selected policy instruments along the life-cycle of products

Policies

The focus of the ASCEE project is on public policies to promote sustainable consumption patterns. In its instrumental overview (see section 1.2), and also in the case studies (see chapter 2), the project provides some evidence of current government policy priorities. The majority of instruments identified address the supply side, i.e. product-efficiency and (green) product dissemination issues. Few measures put consumers centre stage, i.e., product usage, lifestyles and consumption patterns (see Fig. 3.1). The policy measures directly related to consumers are often confined to the provision of information; such as with eco-labels, and consumer awareness-campaigns.

This observation may, at least to some extent, be biased by ASCEE's focus on innovative policy approaches. The project aim was not to come up with a comprehensive overview of *all* existing and discussed policies and tools to promote sustainable consumption. But, bearing this in mind, the observation – that current innovative policies are as of yet very often supply-side and information-related – might be even more striking. Apparently, sustainability policies explicitly addressing consumption issues do not yet sufficiently reflect the novelty and complexity of their subject; namely, consumption routines which encompass daily shopping (i.e. low-involvement products), and the purchase of durables like consumer electronics (i.e. high-involvement products). Therefore, production-related policy should be supplemented by a policy more explicitly related to sustainable consumption issues.

As we have argued in section 1.3, based on insights in e.g. behavioral sciences, information alone is not sufficient to change people's behavior. Everyday consumption practices are strongly driven by habit and context. Hence, in order to achieve substantial and durable alterations in consumer

lifestyles, a more far reaching, or different kind of intervention, is needed; one that systematically develops an ability to consume in a more sustainable fashion as well as generating further opportunities for greener consumption. In this perspective, an important approach is creating an infrastructure that supports sustainable choices, e.g. by developing public transport services and by encouraging spatial planning that reduces mobility needs, or introducing motivational instruments that, for instance, give behavioral feedback and stimulate positive peer influences (Tukker et al. 2007).

As it appears from the ASCEE research, current European policies to foster sustainable consumption have not yet sufficiently reflected this extended scope of policy intervention. One reason may be that consumption-oriented policies are often derived from cleaner production and integrated product policies, that, by definition, focus on the production and supply side of the market and follow the *efficiency* paradigm and performance improvements. However, in order to exploit the full sustainability potential of public policies relating to consumption, a more explicit consideration of the behavioural and contextual aspects is required. In particular, taking into account the fact that efficiency gains, i.e. improvements in the specific environmental performance of goods, are often offset by an increase in the absolute amount of their consumption ("rebound effect", see Hertwich 2005). As it is illustrated in Fig. 3.2, a re-consideration of the *sufficiency* paradigm, i.e. of our way and amount of consumption, might be required. That implies that policy-making does not restrict it-

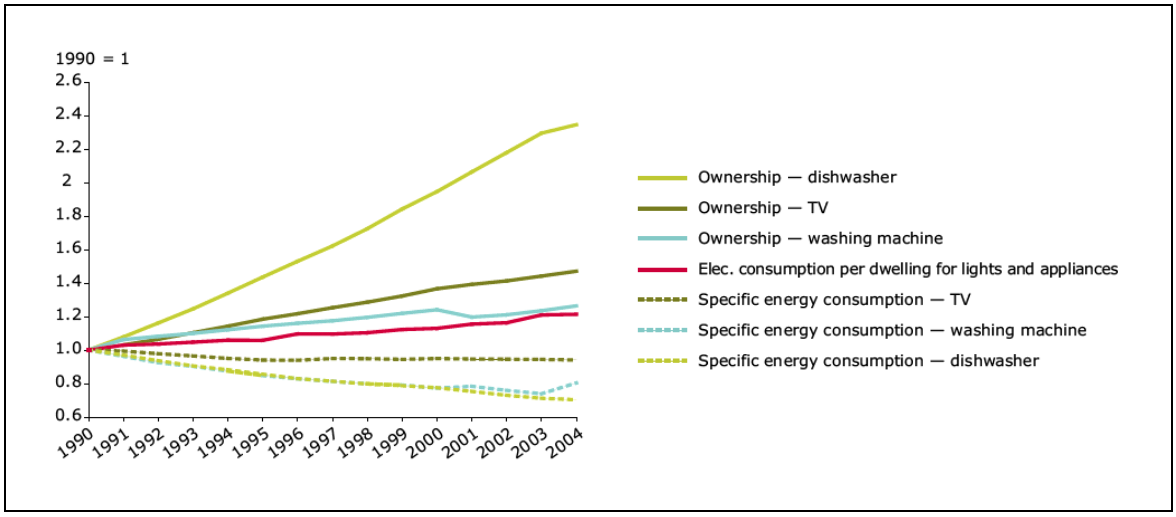


Fig. 3.2: Trends in energy efficiency, ownership, and overall electricity consumption of selected household appliances, EU-15
(EEA 2007: 273).

self to improving the environmental performance of current product ranges; but, rather, starts to reflect underlying needs, the complexities and dynamics of modern consumption patterns.

As a consequence, knowledge on those factors that determine consumer behaviour becomes more important, and a sound evidence-base, crucial for successful policy making. This is another shortcoming of current SC policies, as the ASCEE research clearly shows. While data on products and production processes becomes increasingly comprehensive and more easily available, (see, for instance, the "European Reference Life Cycle Data System" [ELCD])[120], socio-economic data is still

120 See http://lca.jrc.ec.europa.eu/lcainfohub/datasetArea.vm.

scarce and/or on a fairly aggregate level (see, e.g., the Eurobarometer Survey Series, such as European Commission 2008g), and rarely employed for policy formulation. Such data could report on consumption practices (e.g. purchasing patterns, consumption of resources during product use), consumer values and attitudes, heterogeneity of consumer groups, barriers for change in everyday life, etc.).

This reasoning is not to argue for placing responsibility for more sustainable consumption patterns on consumers alone. Certainly, they have a more active role to play. But, at the same time, they have to be provided the means and resources enabling them to change. And, it is this latter responsibility that remains with governments and other stakeholders, such as business. Hence, sustainable consumption is a shared responsibility, as will be further explored in the following section.

3.2 In The Shadow of Hierarchy: Design of Sustainable Consumption Policy

As mentioned above, modern policies promoting sustainable consumption are characterised by a mix of traditional government and new governance approaches. The government-mode stands for a more regulatory policy of top-down interventions, while the governance-mode represents a policy approach exploiting the potential of co-operation and self-commitment by all relevant stakeholders. However, the gradual shift from government towards governance does not follow a linear, but rather an iterative, pattern. The prime goal is to supplement classical command-and-control policies by more stakeholder-related and 'soft' approaches – at least in those cases where a mix of government and governance promises efficiency and effectiveness gains (see section 1.3). The ASCEE project highlighted this aspect in the considered cases (see chapter 2). Some examples:

- The Danish *product panels* were a cooperative and strategic approach; embedded in the Danish strategy of a new triangle connecting market, policy and stakeholder perspective. Its cooperative approach did not mean a retirement of policy. Governmental authorities selected and nominated the chairs of each product panel, they funded operative work and projects agreed within the panel, and they participated at the panel meetings, at least as observers. Hence, they still played an active role within this voluntary exercise; thereby indicating how serious they take the process and how keen they are to obtain substantial results.
- The UK *Red/Green Calculator* is an outcome of the British Market Transformation Programme (MTP) run by the British environmental ministry, Defra. The conceptual development of this tool has been financed by the state. The empirical data needed to carry out calculations is provided by manufacturers and retailers. The calculator is a voluntary tool whose success largely depends on its usefulness to retailers, manufacturers and other potentially interested parties making procurement decisions. The UK Government efforts will only be fruitful if the retailing sector is convinced of the benefits the calculator can bring, and cooperates in the initiative. In this sense, the *Red/Green calculator* represents another cooperative and voluntary approach attempting to exploit further sustainability potential along the product lifecycle.
- The aim of Swedish *technology procurement* activities is to take market leadership by supporting the quicker market entrance of environmentally more benign products and technologies. These activities demand a strong role be played by public authorities. They need to know technical and environmental characteristics of products of the same product group, have an idea of the impacts of the technologies under development, be in touch with the suppliers, and sometimes, coordinate purchasing activities to come up with a critical mass of public authority de-

mand. Again, by co-operation with market actors policy makers try to enhance a ‘greener’ market transformation without employing traditional regulatory policies.

These examples illustrate cases where governments’ activities are not restricted to a regulatory role, but also an active role as facilitator and activator of stakeholders, business and retailers in market transformation. Public authorities increasingly change their level of activities as situations require – in an iterative or circular rather than linear process. They closely co-operate with business, consumers and stakeholders by exchanging opinions, insights and strategies – and by indicating policy targets. Policy designs have become more versatile and less static.
In the case of sustainable consumption, the pure government mode has “inherent” restrictions and the governance mode is valuable for several reasons:

– Consumption is a complex domain touching different areas. It ranges, for example, from housing occupational and leisure time travelling, to food purchase and preparation. Accordingly, different types of consumer behaviour – from short term everyday routine consumption (low involvement decisions) to long term consumer investments (high involvement decisions) – are involved, as well as different types of stakeholders.
– Consumers themselves have multiple roles. They are purchasers, users, family members, friends, citizens, employees, voters etc. and all roles they take might have some impact on their consumption patterns. As an employee, they may commute by public transport. As a mother or father, they may ride a family van. As a citizen, they may boycott certain products and brands. As a friend, they may imitate the consumption habits of others for social bonding, etc. Again, this calls for a multitude of actors entering the stage of sustainable consumption policies.
– Some stakeholders are actually closer to consumers than public authorities. This is the case for the retail sector which provides everyday consumption items. It is also true for private associations, such as sports and other leisure time clubs. Considering such actors in the formulation and implementation of SC policies, again, is a reasonable strategy.

However, governance-oriented policy approaches might be more time-consuming than traditional regulatory top-down policies. Businesses and civil society organisations need to be taken on board and compromises often need to be found to act together. Exchange of opinions, consensus-findings and also political decision-making needs time. This is relevant for policy formulation and policy implementation (see the examples in the box). Policy makers have to take this into account when formulating policies to promote sustainable consumption. All the more,

Between 2003 and 2005, the Finnish government established a Committee on Sustainable Consumption and Production (KULTU) that produced a report containing 75 suggestions for strengthening sustainable consumption in Finland.

The German Federal Ministry for the Environment has begun a national process on sustainable consumption and production involving all relevant stakeholders (see www.dialogprozess-konsum.de). The process aims to achieve a broad understanding about objectives and innovative approaches; through which potentials of business and civil society can be tapped.

as this more long-term-oriented policy perspective might conflict with shorter policy cycles and short-term environmental pressures.
Taking into account the potential risks associated with governance-based approaches, the possible benefits of a “shadow of hierarchy” (Scharpf 1993) are obvious: “The shadow of hierarchy can involve legislative threat or inducements” (Héritier and Lehmkuhl 2008: 2). Its existence implies that the governance-mode would be re-shifted to the government-mode, if the voluntary approaches failed. Hence, one can conclude that at the end of the day, even if responsibilities have been shared and many actors have started to more actively engage in market transformations *policy makers can't outsource politics* (Berg 2006).

3.3 Role of Stakeholders: New Priorities?

What is meant by the concept of stakeholders? The “classical” stakeholder concept was developed within the management theory dealing with the relationship between business firms and corporations on the one hand and their environment on the other. It was an expansion of the shareholder concept. Accordingly, stakeholders can be defined as “any group or individual who can affect or is affected by the achievement of the firm’s objectives” (Freeman 1984). During the last twenty years this concept has been developed in various directions:

– First of all, we have seen the development towards a “Corporate Social Responsibility” (Carroll 1999, Windsor 2001). This concept calls on businesses to take responsibility beyond their economic performance, and consider interests other than their shareholders’.
– Secondly, the concept has been expanded from business management to society; integrating the responsibilities of organisations, policy makers, science and consumers (Dentchev and Heene 2003).
– At last, we have witnessed a discussion on the categorisation of various groups of stakeholders. The most relevant distinction is between primary and secondary stakeholders: “A primary stakeholder group is one without whose continuing participation the corporation cannot survive. Secondary stakeholder groups are defined as those who influence or affect, or are affected by the corporation” (Clarkson 1995: 196f.).

With sustainable consumption, a relatively large topic is addressed. It covers various economic and social activities, and the potential stakeholders are numerous. Furthermore, they vary substantially from one case to another. Stakeholders include producers, retailers and consumers, business associations, banks, insurances, consumer/environmental NGOs, the scientific community and the media. This is illustrated, for example, by their participation in the global discourse on climate change. The setting of these stakeholders differs according to the context dealt with.
In the following, the role of different stakeholders will be briefly discussed. Primary and secondary stakeholders will be identified, their role (mandatory or voluntary) and their kind of engagement (formal or informal) will be characterised. Finally, the way individuals are drawn into the case, as citizens or as consumers (see section 3.1), will be commented upon.

– The *One Tonne Less* campaign is a traditional, top-down awareness raising information campaign; well inside the “government” paradigm. A lot of business partners have joined, but it is not obvious that these businesses are “stakeholders” in the campaign. They do not really seem to have a stake in the impact of the campaign. Instead, they seem to use it primarily for reputation purposes; in times where it is tempting to be affiliated with work against global warming. The way to associate individuals is innovative, since they commit themselves by signing up for specific measures. It is, however, hard to identify any stakeholder approach in One Tonne

Less. This campaign is more an example of a governmental approach addressed towards citizens as a target group and primary stakeholders.

– The Dutch *Green Funds Scheme* (GFS) is set up by the government, with close co-operation between different departments (environment, finance, agriculture, transport). The primary stakeholders are the green banks and their customers, i.e. those providing the funds (individual investors) and those seeking finance/cheap credit for their projects (green entrepreneurs). Secondary stakeholders are the local communities of the banks and some sub-contractors of the entrepreneurs. Consumers are recognised as secondary stakeholders indirectly through a Dutch association providing advice for the responsible public authorities. Stakeholder involvement is voluntary, but formalised. If banks, for instance, wish to join the system, they have to meet the strict requirements of the 'Green Institutions Scheme'.
– The UK *Red/Green Calculator* is a voluntary policy tool, developed by the UK environment ministry as a part of the UK Market Transformation Programme (MTP). The main stakeholders are major retailers, manufacturers and trade associations. The primary stakeholder is the retailer who uses the tool. He addresses the importers, the producers and the consumers as secondary stakeholders. Stakeholder involvement is voluntary, and mainly informal. Producers of products rated "Red" are stakeholders at the receiving end of a market transformation. They will find it very hard to compete in a market for environmentally improved products. Individual benefit comes to the citizen/consumer if he or she – as a retail client – is concerned with the products' environmental performance.
– In the campaign "*We're in this Together"* (Together), participation is based on the voluntary commitment of companies and the general public. The main body of Together is the ten participating companies. All these companies are stakeholders, since they have a stake in some of the campaigns' objectives, An example is the UK retailer Tesco setting a goal of selling ten million energy saving light bulbs in a specific year. In our perspective, the ten corporate partners are the primary stakeholders in Together. It is, however, not obvious that the "supporters" of the campaign should be defined as secondary stakeholders. Participation is voluntary and largely informal, with corporate partners called to develop a low carbon product or service or provide a special offer. Individuals benefit from the campaign as consumers, to the extent that Together succeeds in making sustainable consumption easier.
– The Danish *product panels* brought together business, industry associations, NGOs and researchers to elaborate new and voluntary approaches. These participants are the primary stakeholders; of which business has played the most important role. The agreements and outcomes of the panel work were intended to be broadly disseminated among the target audience, consisting of the participating companies, but also of the non-participants which could be considered as secondary stakeholders.

What do we learn from this brief overview? Obviously, – and this again reflects the importance of the governance mode depicted above – the success of SC policies is, to a large degree, dependent on the involvement of all strategic stakeholder groups. This does not imply, however, that one should encourage action by as many stakeholders as possible. Rather the challenge is to integrate the right stakeholders at the right point of policy formulation and policy implementation; taking into account not only the obviously necessary primary actors, but also secondary actors.
While public authorities by definition have a major role to play, alongside manufacturers and their associations and consumer and environmental NGOs, retailers seem to (re-)gain importance as gate-keepers to greener products (e.g., Ytterhus et al. 1999). This is apparent in the case of the

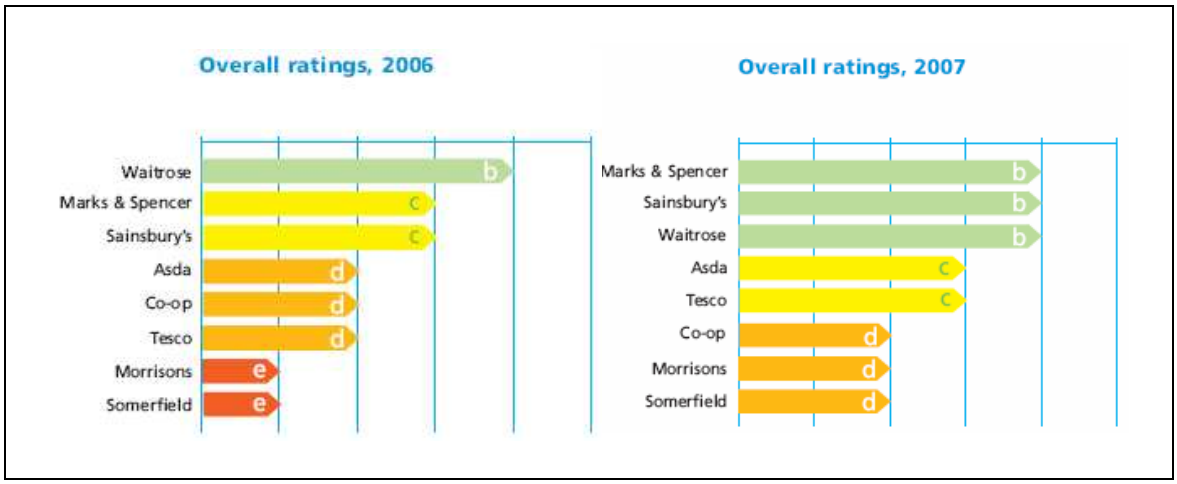


Fig. 3.3: NCC supermarket ratings
(NCC 2007).

Red/Green calculator; an instrument which is explicitly designed to support greener assortment policies in the retail industry, but it is also revealed, for example, by retail-driven initiatives on carbon labelling[121] (see section 2.2.5.1) or by the fact that the UK National Consumer Council (NCC) has started to assess the sustainability performance of retail companies on a regular basis. In 2007, the NCC has tested the environmental profile of the UK food retail industry for the second time; showing that top ratings have not been achieved yet (see Fig. 3.3).[122]
Hence, as it comes to the role of stakeholders, the retail sector is in a key position as "[i]t informs the end-user about product features (…) [and] in its position as purchaser and customer it can dictate the conditions of supply" (Sarasin 2006: 5). Bearing in mind that retail, in itself, is very heterogeneous, covering global supermarket chains such as Walmart, Tesco, and Carrefour, as well as regional suppliers and smaller specialised trade, it is a gatekeeper in many ways. Depending on their purchasing power, retail companies can provide strong incentives for their suppliers to meet environmental and social requirements upstream in the value chain. They can also edit the product choice that they offer their customers along certain sustainability criteria. And they can – downstream the value chain – provide additional information contributing to a general increase in awareness and a better informed consumer purchasing decision. Though not being a completely new priority, the retail sector should be paid special attention when allocating responsibilities among the different stakeholders necessary for policy implementation.

121 For instance, the British company Tesco, one of the biggest global food retailers, joined forces with the UK Carbon Trust, the environmental consultancy ERM and a small number of its suppliers to measure the carbon in a range of products. In April 2008, Tesco started a trial in carbon labelling for 20 products in categories, such as washing detergents, orange juice, potatoes, and light bulbs.

122 They rated the supermarkets using an A-E rating system, inspired by the energy efficiency ratings. The assessment criteria encompass reduction of CO2 emissions, reduction of waste, sustainable sourcing of fish, and sustainable farming (organic food) (NCC 2007).

3.4 New Elements in the Design of Policy Instruments

The first empirical basic instrumental overview of ASCEE identified policy instruments promoting sustainable consumption practices and contributing to a greening of the market in Europe. The focus was on policies and top-down instrument approaches, i.e. actions, measures and proposals where the European Union or a national or regional government was, at some point at least, actively involved. Furthermore, the idea was to focus on innovative approaches and instruments. In the absence of a general clear-cut definition of "innovative SC instruments", we arrived, in a pragmatic fashion and based on the interviewees viewpoints, at an analytical distinction between two forms of innovation:[123]

– "*First-order innovation*": One can speak of this kind of innovation when an instrument is completely new to SC policy. It represents any approach, or tool, that has not been applied in the context of sustainable consumption before.
– "*Second-order innovation*": This kind of innovation occurs when a policy instrument is new to a specific application context. This can, for instance, be a country where the instrument has not been applied before (e.g. organic labelling in Romania), or a new environmental issue the tool has not addressed before (e.g. extension of the scope of the EU eco-design directive towards non energy-using products).

Not surprisingly, the first type of innovation was not encountered very often. In our sample of case studies, the Red/Green Calculator, which provides retailers and manufacturers with a means of assessing, on a voluntary basis, the energy efficiency of consumer electronic products that they procure and sell, can be regarded as an example for this first-order innovation. Indeed, because of its novelty, this approach has not been fully implemented (see section 2.3.2). Similarly, the Finnish Eco-Benchmark tool, which provides consumers key information on the environmental impacts of their consumption behaviour in an easily comprehensible, illustrative fashion, appears to be innovative in this narrow sense (see Fig. 3.4).

123 It refers to the distinction made in innovation research between something 'new-to-market' as opposed to something 'new-to-the-firm' (e.g., Garcia and Calantone 2002).

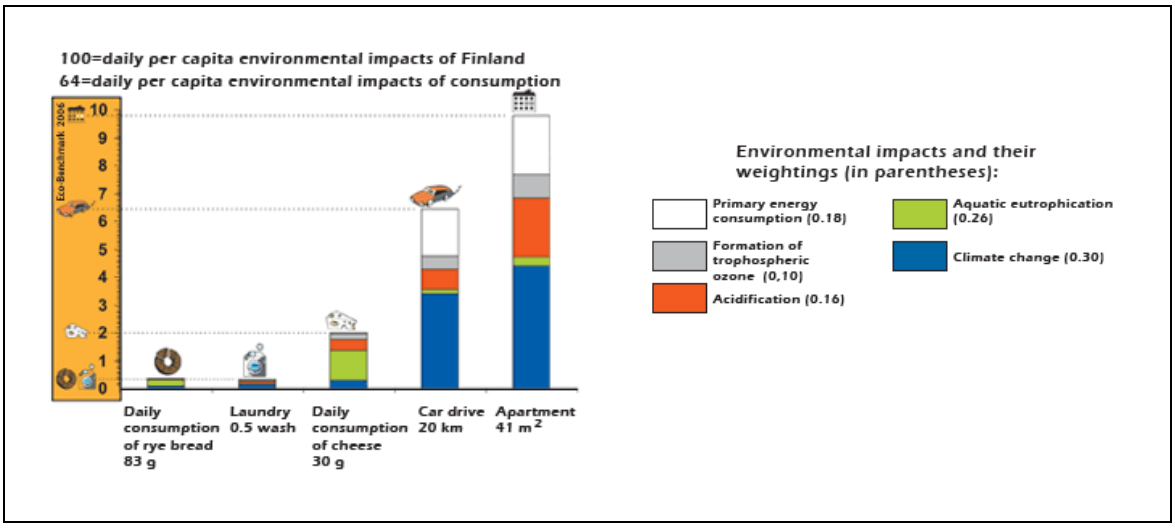


Fig. 3.4: The Finnish Eco-Benchmark tool
(www.environment.fi/eco-benchmark)

The second type of innovation, where a previously existing instrument is applied within a new context, for instance a new country, was encountered often. Examples are the diffusion of the "Top-Ten" internet platform from Switzerland to other European countries, or the uptake of Green Public Procurement (GPP) by Portugal, where the purchasing potential of public administration had not been utilised extensively for sustainability purposes before the National Action Plan on GPP was implemented in 2007. Another example for this second-order innovation is the introduction of a congestion charge in the Swedish capital of Stockholm following the London pilot project.

Though 'real' innovation can rarely be found in policy designs, the ASCEE Project identified *novel elements* with respect to modern SC policies and the instruments applied therein:

Collective action

Campaigns like "We're in this Together" or "One Tonne Less", and also the "Eco-Team" approach place strong emphasis on community-building among stakeholders and particularly among consumers., The Eco-Team is a method for having a small group of households change their behaviour in a more environmentally friendly direction. By so doing, they follow the fundamental idea of "creating a supportive framework for collective progress, rather than exhorting individuals to go against the grain", as it has been formulated in the UK "I will if you will" report (SDC and NCC 2006a).

In section 1.3, we have discussed how the consumers are strongly driven by habits and that convenience often takes precedence in pressured daily lives. Therefore, consumers tend to overestimate the costs of change. One may surmount this motivational barrier by organising real or virtual peer groups, i.e. practical forms of collectivity, within which people can demonstrate that (small) changes in everyday life are actually feasible, and within which they are provided with opportunities to 'lead' by good example.

While keeping in mind that the strength of this community-building approach must not induce governments to place the responsibility for more sustainable lifestyles on consumers alone, it is clear that it offers new potential to tie SC policies more closely to social realities.

Adaptability

Modern SC policy instruments have to cope with shorter innovation cycles and accelerated market

pace. Consumption areas characterised by this phenomenon are, for instance, consumer electronics, information technology, passenger cars, and – probably to a smaller extent – household goods such as washing machines, dish-washers or cold appliances. Obviously, in these areas, an instrument such as a 'classical' eco-labelling scheme is increasingly incapable of keeping up with rapidly progressing product developments. An instrument such as the "Topten" information platform is more flexible in this respect (see section 2.3.3), since it relies on short revision-cycles: Product assessments take place every six months. Twice a year, all product groups are re-assessed, and the assessment is usually translated into changes in the selection of the ten best available products. Furthermore, new products can be added as soon as the necessary information is provided.
The need to adapt policy instruments to altered market circumstances will be a continuing challenge assuming that product innovation remains a major force in the saturated consumer goods markets. Information and communication technologies (ICT) are a good example. A recently published German policy brief summarises the task as being "to strengthen the synergies between regulatory design requirements, obligatory labelling and voluntary eco-labelling and to dovetail the dynamisation of these instruments" (BMU and UBA 2008: 12).

Extended evidence base

Scientific evidence has traditionally played a role in environmental policy formulation, for example, in clarifying the environmental performance of one-way versus reusable packaging. Also today, a sound evidence base appears to be a major success factor for current SC policies. What has changed, however, is the thematic scope of the evidence required for proper policy design. In some of the approaches studied in the ASCEE project, the information comprises not only technical and life cycle assessment data, but also evidence from social sciences referring to issues such as consumer values and attitudes, heterogeneity of consumer groups, barriers to change in everyday life, etc. The Danish One Tonne Less campaign (see box) and the British Together campaign are one example. And also the "Framework for Pro-environmental Behaviours" developed in the UK, shows that effective policy design will benefit from a good evidence base.

One important point of departure for the Danish One Tonne Less campaign has been a consumer survey from 2005. The results from this survey functions as a benchmark for central indicators. One derived goal is, for instance, to increase consumer knowledge, i.e. the percentage of correct answers on climate change, from 58% in 2005 to 75%. In addition to these indicators, the selection of main target groups of the campaign – 'wealthy' green consumers on the one hand and children and young ones on the other – has also been informed by recent scientific evidence.

Hence, public policies to promote sustainable consumption should pay more attention to the generation and exchange of data that helps to come up with policy tools better fitting the everyday lives of consumers.

In its 2008 report "A Framework for Pro-environmental Behaviours" the UK Department for Environment, Food and Rural Affairs (Defra) sets out a framework for Defra's work on pro-environmental behaviour. It pulls together evidence on public understanding, attitudes and behaviour. It identifies behaviour goal and draws conclusions on the potential for change across a range of behaviour groups. It is designed to support policy development and implementation in Defra, in other UK Government Departments and externally. The report has been prepared by a new environmental behaviours unit established in Defra.

The social dimension: another new element?

Apart from these three comparatively new features of at least some of the policy instruments, one could envisage another new element in public policies to promote sustainable consumption; namely, a more explicit consideration of the social dimension of sustainability. As far as the ASCEE overview reveals, however, this is not the case yet. Policies still mainly address the environmental problems of consumption, while the social dimension of current consumption patterns, such as the working conditions in upstream stages of the product life cycle or the terms of international trade, have not yet been captured to the same extent (see also Szlezak 2007: 34).

Policy approaches integrating the environmental and social dimensions of sustainability are encountered, for instance, in labelling instruments (see box). In addition, the issue of ethical consumption and fair trade is sometimes a matter of public information and education campaigns. But until now a more binding consideration of social issues in policy design, e.g. in procurement guidelines or taxation policies, is not yet established. One exception is the UK Government timber procurement policy, introduced in 2000. It requires the government's central departments to actively seek to purchase legal and sustainable timber and products derived from wood. The central government departments report that certified products accounted for 75% of their expenditures spent on timber in 2003/2004.[124]

The Fairtrade Labelling Organizations International (FLO) created a "Fairtrade" label which primarily addresses the social dimension of sustainability. It ensures proper living and working conditions for those employed in agricultural production. Besides criteria such as paying a minimum price which is above world market level, the label covers, certain ecological standards, e.g. with respect to the use of pesticides. For products from organic cultivation, a premium is paid. In the meantime, fair-traded rice, wine and bananas which are sold in European markets are almost entirely grown organically. For chocolate the share of organic produce is up to 50 percent, for coffee up to 60 percent, and tea and cacao up to 70 percent.

The depicted features of policy instruments – emphasis on community-building, adaptability, extended evidence-base, and (emerg-

124 See http://www.sustainable-development.gov.uk/what/documents/timber-procurement.pdf (accessed May 13, 2008).

ing) integration of social issues – prove the observation that product policies have, at least to some extent, further developed from the early 1990ies (see, e.g., Oosterhuis, Rubik, Scholl 1996); particularly, in that consumption patterns are slowly, but increasingly, taken into account in policy formulation. The novel aspects identified by the ASCEE project with respect to policy instruments might provide important leverage to market and behaviour transformations and, hence, should be considered carefully in further development of SC policies (see below).

4 Assessment of instruments

4.1 Assessment – an integral part of making sustainable consumption policy

Policy instruments on sustainable consumption should be assessed across the entire policy cycle, i.e. from policy formulation to policy monitoring. *Ex ante* (i.e. prior) assessments can provide preliminary insights into the potential direct and indirect impacts of an instrument. The intended policy targets and their interrelationships, the expected short term and long-term outcomes, as well as the possible side effects can form a part of the analysis. Considering the novelty of sustainable consumption as a policy field, as well as the innovative nature of many of the proposed policy instruments, *ex ante* analyses seem to be very important. A properly conducted analysis will also increase the legitimacy of the planned instruments.

Ex post assessments of policy instruments, on the other hand, focus on the actual, perceived outcomes and experiences of the instruments. The assessments serve to gather empirical information on the application of policy instruments, which may in turn be used to inform future decisions. The assessment should not only look at the performance of an instrument in isolation, but aim to place the analysis in the appropriate societal framework.[125]

The main challenge in both *ex ante* and *ex post* analyses of sustainable consumption is the very large number of criteria to be assessed. Consumption policies are broad, complicated, fragmented and cover widely different areas in terms of products and consumers. An assessment needs to be dynamic, flexible and tailor-made for each particular case. At the same time, one should have sufficiently common elements to lead to practically relevant findings so as to assist informed decision-making and instrument choice.

Considering these requirements, there appears to be a lack of tools that are adapted for assessing instruments and measures in the area of sustainable consumption. In other words, the policy assessment tools that were outlined in the academic literature[126] and in the official documents of the European Commission[127], the OECD[128] and other international institutions, did not, at the time of

125 A direct consequence is that assessment criteria may be altered after implementation as a result of changing conditions and societal priorities.

126 See for example Hatch (2005), Harrington et al. (2004) and US Congress (1995).

127 See documents such as the Impact Assessment guidelines (European Commission 2005b), Impact Assessment guidelines (draft version) (European Commission 2008h) the White Paper on European Governance (European Commission 2001c), the Commission Communication on Impact Assessment (European Commission 2002), the Joint Practical Guide on Drafting Legislation (European Commission 2003c), the Commission Communication on the Lisbon Strategy (European Commission 2005c) and the Commission Communication on Integrated Product Policy (European Commission 2003a).

ASCEE Project, appear to take the above-mentioned specificities of sustainable consumption into account well.

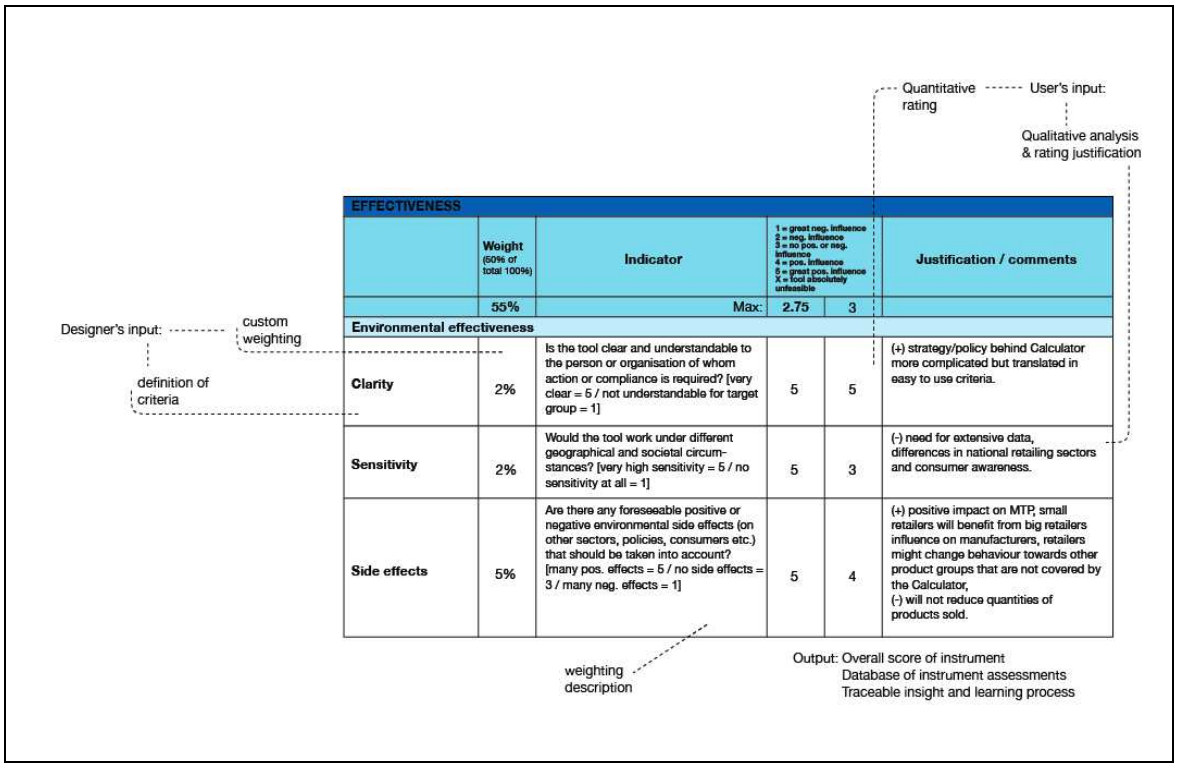
ASCEE's assessment tool

The importance of properly assessing sustainable consumption policy instruments, the challenges of actually conducting such analyses, as well as the lack of ready-made assessment tools led the ASCEE project to develop an assessment tool of its own. Existing literature, guidelines and tools as mentioned above were used as a starting point for the development of the ASCEE tool. As one of ASCEE project's main objectives was to identify and assess the most *innovative* instruments on sustainable consumption within the EU and beyond, innovativeness and transferability were included specifically as criteria in the tool. The ASCEE assessment tool was then applied to, and tested on, nine selected case studies (see chapter 2). Minor adjustments were then made to the tool.

Main Features of the ASCEE Assessment Tool

The ASCEE assessment tool has four main novel characteristics. They are outlined shortly below, and explained in more detail in the next section (How the ASCEE Assessment tool works).

– First, the created tool is adaptable for particular, focused uses. In the case of ASCEE, the focus was obviously the assessment of the sustainable consumption instruments, and the criteria were chosen accordingly.
– Second, the measurement is dynamic in the sense that the weighing of the assessment criteria may be altered in accordance with the function of the research objective (second column in Fig. 4.1).



EFFECTIVENESS					
	Weight (50% of total 100%)	Indicator	1 = great neg. influence 2 = neg. influence 3 = no pos. or neg. influence 4 = pos. influence 5 = great pos. influence X = tool absolutely unfeasible		Justification / comments
	55%	Max:	2.75	3	
Environmental effectiveness					
Clarity	2%	Is the tool clear and understandable to the person or organisation of whom action or compliance is required? [very clear = 5 / not understandable for target group = 1]	5	5	(+) strategy/policy behind Calculator more complicated but translated in easy to use criteria.
Sensitivity	2%	Would the tool work under different geographical and societal circumstances? [very high sensitivity = 5 / no sensitivity at all = 1]	5	3	(-) need for extensive data, differences in national retailing sectors and consumer awareness.
Side effects	5%	Are there any foreseeable positive or negative environmental side effects (on other sectors, policies, consumers etc.) that should be taken into account? [many pos. effects = 5 / no side effects = 3 / many neg. effects = 1]	5	4	(+) positive impact on MTP, small retailers will benefit from big retailers influence on manufacturers, retailers might change behaviour towards other product groups that are not covered by the Calculator, (-) will not reduce quantities of products sold.

Fig. 4.1: Overview of the ASCEE assessment tool

128 See for example the OECD (1997, 2004, and 2006).

– Third, the tool combines preliminary quantitative information with explanatory comments (see Fig 4.1).
– Fourth, in addition to giving policy makers a tangible assessment data, the tool helps in initiating and structuring a process of brainstorming.

4.2 How the ASCEE Assessment tool works

Defining the Policy Objectives

The ASCEE assessment tool is tailored to analyse policy instruments on sustainable consumption and greening of the market. The tool is in the form of an excel spreadsheet. The analysis of each instrument is conducted on a separate sheet. In a case where more than one person conducts the assessment, scores and comments are written on separate excel files and later combined. In fact, the analysis should take place, not just on an instrument, but against the *specified policy objective* of the instrument in question, or a combination of such objectives. The objectives may vary considerably as a function of, for example, the defined time horizon (immediate v. intermediate v. longer term objectives) or scope (small local concerns v. vast international threats). Such variance will ob-

TOOL DESCRIPTION			
Tool Name		The assessed tool could be one policy instrument or a particular mix of tools.	Red/Green Calculator
Type		Which category does the tool belong to? [regulatory, economic, performance of governments and public administrations, compulsory information, voluntary information, other voluntary instruments or cooperative approaches]	Voluntary policy tool
Definition of goal		What is/are the tool's specific goal(s)? This could entail short-term and a long-term goal(s). This assessment should be conducted with regards to this/these particular goal(s).	Intermediate goal: change offer in electronics towards more sustainable products Ultimate environmental objective: reduce energy consumption and CO2 emmissions

Fig. 4.2: Defining policy objectives in the assessment tool

viously directly impact the analysis. The first part of the assessment tool therefore contains a slot for carefully defining the policy objective(s) of the instrument under analysis (see Fig. 4.1).
As an example, the R/G Calculator (see chapter 2.3.2 above) is identified as a voluntary policy tool. The definition of the goal is divided into two levels – the intermediate goal of making the offer of electronic products on the shelves of retail outlets more sustainable, and the ultimate environmental goal of reducing energy consumption and thereby CO_2 emissions. For *We're in this Together* (see chapter 2.3.4 above), the identified overarching goal was the reduction of CO_2 emissions. Additionally, there were several intermediate goals such as increasing availability of sustainable products, raising awareness on CO_2 measures and the means of avoiding them, and developing collaboration between different players. The definition of the goals provides the basis for the assessment, so it needs to be done very carefully.

The Assessment Categories and Criteria

The ASCEE assessment tool is divided into three broad categories of criteria:

- The first category addresses the environmental and political *effectiveness* of the policy instrument. There are also supplementary ASCEE-specific criteria, which deal with innovativeness and the transferability of the instrument to other countries or areas of consumption.
- The second category of criteria is dedicated to *economic impact*. These criteria analyse the instrument's costs, administrative burden and impacts on competitiveness.
- The third category assesses the *social impacts* of the policy instrument.

These three general categories are further split into *assessment criteria, 24 in* all. These 24 criteria are the core of the analysis and cover the major aspects relevant to sustainable consumption measures. Additionally, there are seven slots that give the option of adding criteria under the heading 'other'. It is also possible to remove inapplicable criteria. Thus, the assessment tool provides the opportunity to adjust for particular situations.

The ASCEE assessment spreadsheet contains a column that provides a short explanation on what the criterion is set to assess next to each criterion. For example, the criterion of 'Side effects' under the broad category 'Environmental effectiveness' is supplemented by the explanatory question: "*Are there any foreseeable positive or negative environmental side effects (on other sectors, policies, consumers etc.) that should be taken into account?".* Looking at the R/G Calculator, for example, potential positive and neutral side effects were identified. A positive impact on small retailers is that they will benefit from big retailers' influence on manufacturers in bringing down prices for efficient products. Also, the educational effect of the tool could lead retailers to change their behaviour with respect to other product groups, i.e. those not covered by the R/G Calculator.

As for the TopTen instrument, positive side effects could include improved public procurement activity, which could multiply the use of the tool. There is also a general consumer education aspect to the instrument, and Topten could induce manufacturers to better take into account efficiency criteria in their product design. On the other hand, Topten is not based on complete life cycle thinking. Thus, the focus on energy efficiency may undermine the environmental aspects of the products' other life-cycle phases (such as manufacturing and end-of-life management).

The tool, as mentioned above, is focussed on assessment of sustainable consumption instruments. In particular, the assessment criteria needed to take into consideration the key characteristics of ASCEE's objectives, i.e. the innovative nature of the instruments as well as their transferability to other countries or areas of consumption. Therefore, the questions that the tool poses relating to ASCEE specifically include:

- Is the tool innovative? Does it use a new approach to addressing the respective problem?
- Would the tool work under different geographical and societal circumstances?
- Is the instrument suitable for the proposed level of governance or would another level be more suitable?

The tool may be further adapted for use outside the framework of the ASCEE project. Additionally, the tool can be used for assessing individual instruments or for comparing instruments that have the same policy objective. The used criteria may be tailored to the analysis in hand. Such changes will then also need to be inserted into the calculations of the excel sheet.

In the Table 4.1, all the assessment criteria are listed in the left column, grouped by category, while in the middle the weighing of each criterion, that was used in the ASCEE project, is presented. These inputs are initially provided by the designer of the tool, but may be altered (see Fig. 4.1). The right column contains an explanation of each criterion.

Tab. 4.1: Criteria and description of each criterion

EFFECTIVENESS		
	Weight	**Indicator**
	55%	Max:
Environmental effectiveness		
Certainty of achieving goal	20%	Is it likely that the declared goal will be met? Are there many uncertainty factors? *[almost absolute certainty = 5 / great number of uncertainty factors = 1]*
Side effects	5%	Are there any foreseeable positive or negative environmental side effects (on other sectors, policies, consumers etc.) that should be taken into account? *[many pos. effects = 5 / no side effects = 3 / many neg. effects = 1]*
Time required	2%	How quickly will the declared aim be met? Are there many factors slowing it down? *[almost immediate effect = 5 / very long = 1]*
Clarity	2%	Is the tool clear and understandable to the person or organisation required to act or comply? *[very clear = 5 / not understandable for target group = 1]*
Sensitivity	2%	Would the tool work under different geographical and societal circumstances? *[very high sensitivity = 5 / no sensitivity at all = 1]*
Dynamic features	5%	Does the tool include dynamic features such as progressively increasing requirements to adjust to technological progress or other societal developments? Can it easily be adjusted to changing circumstances? *[extensive dynamic features = 5 / no dynamic features = 1]*
Preventive quality	2%	Will the instrument prevent negative environmental impacts or control/repair them afterwards *[very preventive = 5 / no prevention at all = 1]*
Life cycle approach	2%	Does the tool address its goal from a life-cycle perspective? *[whole life-cycle considered = 5 / no life-cycle consideration at all = 1]*
Other	0%	Are there any other aspects in this category that would be of relevance to the tool?
Political effectiveness		
Political feasibility	3%	Is the tool politically controversial? Are problems to be expected with adoption? *[not controversial at all = 5 / highly controversial = 1]*
Subsidiarity	2%	Is the instrument suitable for the proposed level of governance or would another level be more suitable? *[proposed level is best suited = 5 / proposed level is absolutely not suited = 1]*
Compatibility with EU & international law	2%	Does the tool take the EU internal market and international agreements into account? *[complies 100% with all existing agreements = 5 / major problems are to be expected = 1]*
Other	0%	Are there any other aspects in this category that would be of relevance to the tool?
ASCEE-specific		
Innovativeness	8%	Is the tool innovative? Does it use a new approach to addressing the respective problem? *[highly innovative = 5 / no new element whatsoever = 1]*
Other	0%	Are there any other aspects in this category that would be of relevance to the tool?
ECONOMIC IMPACT		
	Weight	**Indicator**
	25%	Max:
Cost-efficiency		
Government costs	3%	Does the tool place a high financial burden on government to introduce, to enforce and to monitor the requirement? (The *administrative* burden is assessed separately below.) *[reduction of burden = 5 / low burden = 3 / very high burden = 1]*
Industry costs	3%	Does the tool place a high financial burden on industry to comply with the requirements? (Note: the cost for the company to merely compensate for the environmental damage it causes (i.e. "internalisation of externalities") should not be taken into account as a burden) *[reduction of burden = 5 / low burden = 3 / very high burden = 1]*
Consumer costs	3%	Does the requirement place a high financial burden on consumers? *[reduction of burden = 5 / low burden = 3 / very high burden = 1]*
Other	0%	Are there any other aspects in this category that would be of relevance to the tool?
Administrative efficiency		
Government administrative burden	3%	Does the tool place a high *administrative* burden on government to introduce and to enforce the requirement? *[reduction of burden = 5 / low burden = 3 / very high burden = 1]*

Industry administrative burden	3%	Does the tool place a high *administrative* burden on industry to adjust to and to comply with the requirement? [reduction of burden = 5 / low burden = 3 / very high burden = 1]
Other	0%	Are there any other aspects in this category that would be of relevance to the tool?
Competitiveness		
International competitiveness	3%	Does the tool influence the competitiveness of the industry targeted by the tool in one country with regard to international competition? *[very positive influence = 5 / no influence = 3 / very negat. influence = 1]*
Level playing field	3%	Does the tool create a horizontal level playing field within the sector targeted by the tool? (i.e. will some actors have to carry an unjustifiably high burden)? *[absolute level playing field = 5 / very high inequality of burdens = 1]*
Side effects	4%	Are there any foreseeable positive or negative economic side effects (on other sectors, policies, consumers etc.) that should be taken into account? *[many positive effects = 5 / no side effects = 3 / many neg. effects = 1]*
Other	0%	Are there any other aspects in this category that would be of relevance to the tool?
SOCIAL IMPACT		
	Weight	**Indicator**
	20%	Max:
Fairness, ethics and gender	8%	Are the intended burdens and benefits of the tool fairly divided between the different societal groups such as youth, elderly, women, men; industry, SMEs, consumers, public administration? Does the tool raise ethical issues? *[high fairness = 5 / high unfairness = 1]*
Employment	3%	Does the tool lead to an overall net gain or loss in jobs (taking possible job losses in certain areas into account) *[high overall level of job creation = 5 / neither gains nor losses of jobs = 3 / high overall losses of jobs = 1]*
Stakeholder involvement	4%	Does the tool involve all relevant stakeholders? *[High involvement = 5 / no stakeholder involvement at all = 1]*
Side effects	5%	Are there any foreseeable positive or negative social side effects (on other sectors, policies, consumers etc.) that should be taken into account? *[many pos. effects = 5 / no side effects = 3 / many neg. effects = 1]*
Other	0%	Are there any other aspects in this category that would be of relevance to the tool?
OVERALL ASSESSMENT	**100%**	

Combining Preliminary Quantitative and Qualitative Assessment

The assessment takes place at two levels:

– there is a column dedicated to a quantitative score and
– another one next to it made for a qualitative descriptive assessment.

The quantitative element is a rough numerical rating of the policy instrument against each of the criteria. The tool thus allows for the assessment of each criterion numerically on a scale from one to five, where five presents the best score and one the worst. The exact scale for each criterion is always explained on the corresponding cell of the respective row.

The numerical rating is then combined with an open-ended qualitative assessment and discussion of the criterion, and the main findings are filled in the respective cell of the spreadsheet. The qualitative part is essential because in many cases the numerical rating will be equivocal. Inserting the open-ended information on the sheet helps to keep the analysis transparent, and the results verifiable. The combination of a rating and qualitative assessment per criterion makes the assessment more versatile. These two assessments are conducted for all criteria, so that in the excel sheet, they form two columns on the right hand side of the table (see Fig. 4.1 above).

Using the R/G Calculator again as an example, it scores 5 points for several of the criteria. For instance, on '*Dynamic features',* the assessment brings forth its long-term approach and continuous readjustment of requirements. On the other hand, the R/G calculator scores only 1.5, on average, for the criterion '*Life Cycle Approach'.* This looks at whether the instrument addresses its goal from a life cycle perspective. The R/G Calculator focuses currently on the use phase. Although usage has been identified as the most important phase of the life cycle, leaving all the other phases outside of the calculator's analysis cannot lead to a full life cycle approach.

Weighing the Categories and the Criteria

Another novel aspect of the tool is that it allows the analyser to weigh the different categories (environmental and political effectiveness, economic aspects and social aspects) in relation to each other. The weighing of the assessment criteria may be altered to align with the function of the research objective. In the ASCEE project, the environmental and political effectiveness of the tools were considered clearly predominant. They thus counted for 55% of the overall assessment of the instruments. Economic impacts were weighted slightly higher (25%) than the social impacts (20%).

While an accurate weighing is usually not sought, nor even possible, a rough division of the categories may be helpful in various respects. First of all, the mere observation that one indeed should see these elements of instruments as not necessarily having the same weight may be valuable. Second, a weighting of the categories will make the tool better adapted to conducting analyses in different socio-economic settings and circumstances. The suitability of the very same policy instrument is likely to be assessed differently in, for example, Sweden, Italy and China. It may also be different in Sweden in 2000 and in 2008. The tool may be dynamically tailored to changing circumstances. Furthermore, ideological differences may lead to different weighings, and therefore different results, in the very *same* social setting. The analysis may as a consequence be shifted from a mechanical, or in any event value-neutral, application, to a more value-bound and also interactive learning exercise.

Beneath the weighing per *category* lies a weighting of the individual assessment *criteria*. In other words, the weighing may take place either top-down, implying a vision on the relative importance of the overall categories, or bottom-up, where the understanding on the relative importance of the three categories grows from a careful consideration of the relevance of each individual criterion in reaching the defined policy objectives of the instrument. It may indeed be quite revealing to notice how policy instruments consist of many important aspects, and that more emphasis on any particular one will inevitably render other aspects less important. To say this in other words, only few criteria may, in practice, be given a high value. Most of them have only a fractional impact. Overall, the weighting exercise underlines the realisation that the criteria are heavily interdependent, and that modern policy choices are very complex decisions, filled with trade-offs and value choices. Additionally, the task of assigning each criterion a weight may provoke discussion. It allows the user to think about how important each factor is compared to the stated objectives. This will lead to further learning.

The person designing the assessment may freely choose the weights of individual criteria on the excel sheet (see designer’s input in Fig. 4.1 on top). The sheet will calculate the percentage points given to each criteria together per category, and for the tool overall. The overall figure should obviously be 100 %. It may be pointed out that analyses with different weighing are not directly comparable. If the tool were to be used in the selection of the best policy instrument for a particular policy objective in a specific setting, the same split would need to be maintained.

Illustrative Feature of the ASCEE Tool

Within the spreadsheet there is the additional, illustrative, feature of a graph, that may be used as an indicator of the level reached in each of the broad categories: Effectiveness, social impact and economic impact (see Fig. 4.3). As noted, these percentages should not be taken as absolute figures. Rather, the figures and the picture are merely a (visual) overview of the instrument with regard to the three main categories. The picture below describes the assessment of the R/G Calculator (see further in section 2.3.2).

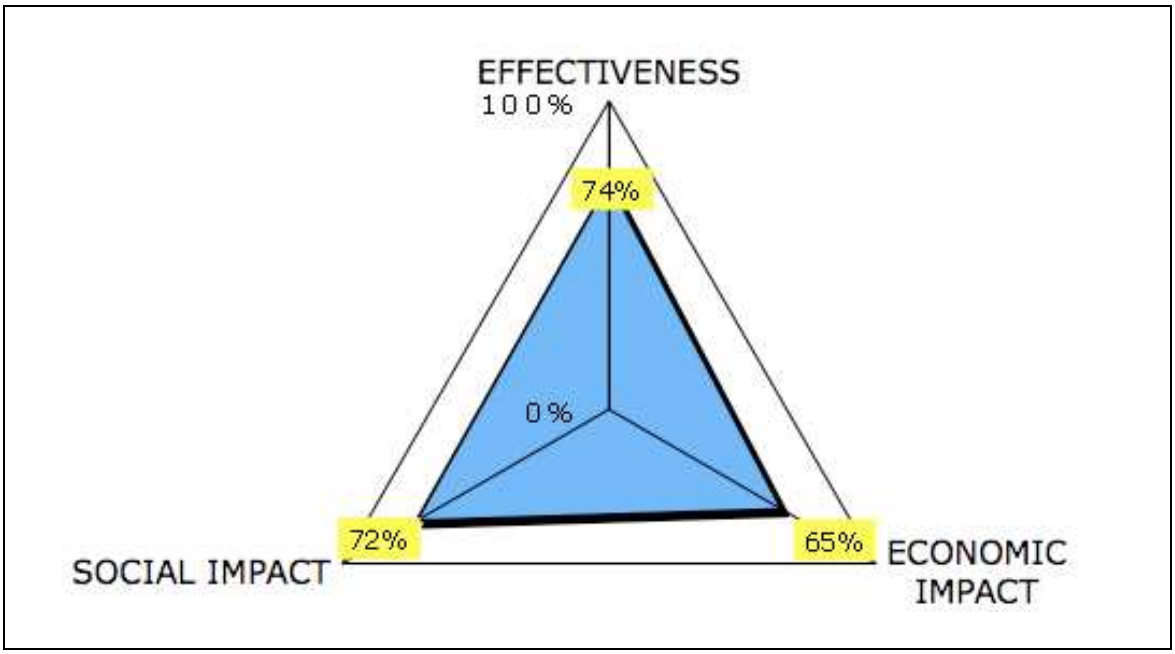


Fig. 4.3: Assessment of R/G Calculator

The R/G Calculator scores relatively high in the categories of effectiveness and social impact, and slightly lower in the category of economic impact. It is also worth remembering that in the Assessment of the ASCEE instruments, effectiveness was given the highest weight of 55%, whilst economic impact and social impact were 25% and 20% respectively. In other words, the main emphasis in ASCEE was given to the environmental and political effectiveness of instruments.

4.3 Conclusions

Choosing first the criteria, then allocating a weight to each category and criterion, and then applying both a quantitative and a qualitative assessment, is a useful method to provoke discussion amongst those conducting assessments, from many angles and on detailed aspects. This combination can help to form a more holistic overview of the tool under analysis. The tool may assist in initiating and structuring a process of brainstorming, and can be a valuable method of learning. Furthermore, the ASCEE assessment tool can be considered a checklist of the most relevant criteria for making a policy tool successful, effective and efficient.

In the ASCEE project, the assessment tool was predominantly applied *ex ante* application (i.e. use prior to the implementation of an instrument). The tool may also be applied ex post (i.e. to assess the success of an instrument after its implementation) by making slight adjustments in the framing of some of the criterion. It would hence seem to add value to apply the ASCEE tool to sustainable

consumption policy measures; both before choosing a measure, and after the implementation of that measure.
Finally, the three main categories of the ASCEE assessment tool – environmental-political effectiveness, economic impacts and social impacts – resonate closely with the three dimensions of sustainability. As the ASCEE tool's focus in the project phase was on assessing environmental effectiveness of selected instruments, the criteria and weighing was tilted towards the environmental dimension of sustainability. It would seem relatively straightforward to adjust the tool to assess policy instruments specifically from the perspective of the three dimensions of sustainability.

5 Policy Recommendations

The aim of the ASCEE project is to identify the latest trends and innovative approaches in policies promoting more sustainable consumption patterns and a greening of the market. The project focuses primarily on instruments implemented by public authorities and it does not consider explicitly initiatives taken by business or Civil Society Organisation (CSOs) alone; such as greener marketing of companies, or information campaigns run by environmental organisations[129]. At the same time, one should always be aware of the fact that modern policies promoting sustainable consumption and production are often, if not regularly, hybrids of top down and bottom up approaches. In this chapter, we will present the conclusions that can be derived from the conceptual and empirical findings of the project with respect to the design of future sustainable consumption policies. The observations are principally based on findings from Member States, so that the national policy level would be one major addressee of the results. At the same time, many of the recommendations will also hold for EU level policies on sustainable consumption.
One cannot expect a comprehensive toolkit telling policy-makers in any detail what (not) to do, due the heterogeneous nature of sustainable consumption, to ASCEE's emphasis on innovative instruments and approaches and also due to the fact that within ASCEE, single consumption areas, such as mobility, food, and housing have not been analysed. Rather, this chapter presents a number of key issues that should be carefully considered when developing policies to move markets and to influence consumers to behave more sustainably.

129 This perspective is taken, for instance, by the UNEP report „Talk the Walk. Advancing Sustainable Lifestyles through Marketing and Communications" (UNEP 2005).

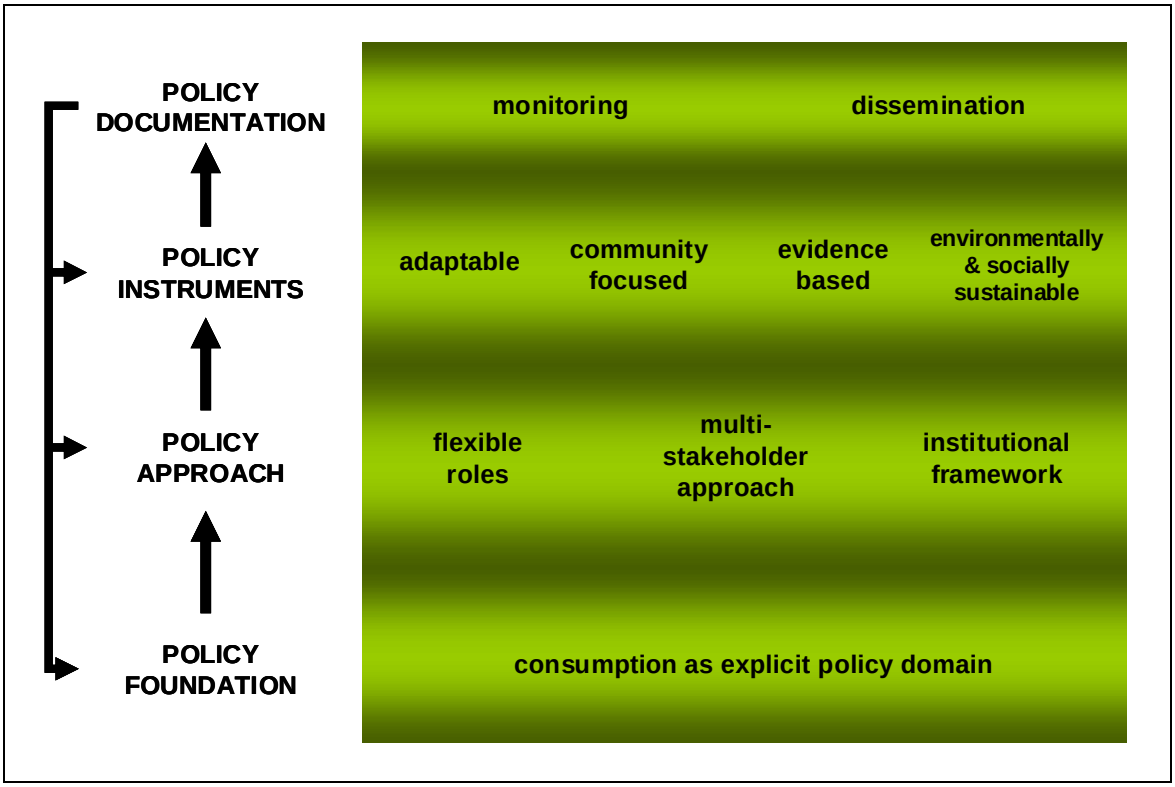


Fig. 5.1: The architecture of ASCEE's policy recommendations

Fig. 5.1 shows how we have organised our recommendations along four different layers: First of all, any policy promoting sustainable consumption needs to be properly founded by acknowledging household consumption as an explicit policy domain. Building upon that, the policy approach taken should enable policy makers to take flexible roles, integrate relevant stakeholders in an appropriate way, and establish an institutional framework that supports effective policy implementation. On the instrument layer, the ASCEE findings call for approaches that are adaptable to changing circumstances, that address consumption not only as an individual (buying) behaviour, but rather as a social process, that refer to best available evidence and, finally, that take environmental *and* social requirements into account. Last, but not least, on the documentation layer, SC policies will benefit from being monitored against a comprehensive set of criteria. This will enable a sound assessment and a purposeful re-design of the policy. In addition to that, policy innovations should be disseminated to a larger audience, since, in particular in Europe experiences with (parts of) SC policies are manifold, but highly dispersed. Moreover, one should note that, what happens on one layer may have repercussions on another layer. Monitoring might induce a change in the design of policy instruments, new evidence on the nature of consumption might call for other stakeholders to be taken on board, the more careful consideration of social issues might lead to a shift of emphasis among consumption domains, etc.
Bearing this architecture of recommendations in mind, the main messages for policy makers conveyed in this chapter are:

– Understand sustainable consumption as a policy field in its own right and thoroughly consider the policy requirements derived from modern consumption patterns (*policy foundation*).
– Take a flexible role in policy formulation and implementation and design a multi-stakeholder based, but nonetheless sufficiently institutionalised policy (*policy approach*).

– Develop policy instruments with high built-in adaptability, e.g., in areas of rapid technological progress, with a sense of community and social feedback, based on an extended evidence-base and increasingly integrating issues of social sustainability (*policy instruments*).
– Monitor sustainable consumption policies and enhance the dissemination of innovative approaches among EU Member States (*policy documentation*).
– These four messages are elaborated on in the following sections.

5.1 Policy Foundation

As mentioned above, private household consumption matters, in environmental as well as in social terms.[130] Households are directly responsible for one fourth of final energy use and two thirds of municipal waste generation in the EU (EEA 2005: 8 and 33). And, through their purchasing decision, they can influence the dissemination of 'socially sound' products. For instance, in Britain Fairtrade, labelled products have a 5% market share of tea, a 5.5% share of bananas, and a 20% share of ground coffee (Krier 2005). Hence, there is both reason to act and potential to move. And, while European consumers report that they already take plenty of measures to reduce environmental burdens, Fig. 5.2 also reveals that more far reaching steps, such as using the car less often or buying eco-labelled products, have been taken by a minority of people so far.

Hence, as compared to cleaner production where some progress has been achieved, the greening of consumption patterns is lagging behind. On the one hand, this is due to the delayed development and implementation of distinct policy interventions, as several (international) reviews of existing and emerging policies for sustainable consumption have revealed (e.g., UNEP 2002, OECD 2002, SWEPA 2005, OECD 2008). On the other hand, this can be attributed to the fact that consumption is a comparatively complex domain. Consuming goods and services is a genuinely social phenomenon and, hence, consumer behaviour is steered not only by rational choice, but also by a need for symbolic consumption, social display and distinction. Individual consumption might be relatively environmentally sound in one consumption area, e.g. food consumption, but far less sustainable in another, e.g. leisure time mobility. And consumer behaviour might be relatively stable during long time periods, but suddenly become fragile – and thereby provide opportunities for change – when life events, such as illness, birth of a child, retirement or job change, erode customary consumption practices.

Apart from that, it has become common knowledge that the environmental impacts of consumption rely on product (performance) features. Yet, very often, the way products are dealt with and used is ever more important:

– A German study found that 55% of all nutrition related GHG emissions are caused by the transport (distribution, purchasing) and the storage, preparation, and consumption of foodstuff. 'Only' 45% are due to food production (Wiegmann et al. 2005). And according to a British study, UK households waste contains one third of the amount of food they buy, 61% of which could have been eaten if it had been managed better (Ventour 2008).

130 See also section 1.2 for some additional figures.

– In the case of washing machines, 15% of environmental burdens can be assigned to the production, 30% are caused by the electricity demand, and 54% by the consumption of washing detergents during use (Rüdenauer and Grießhammer 2004).

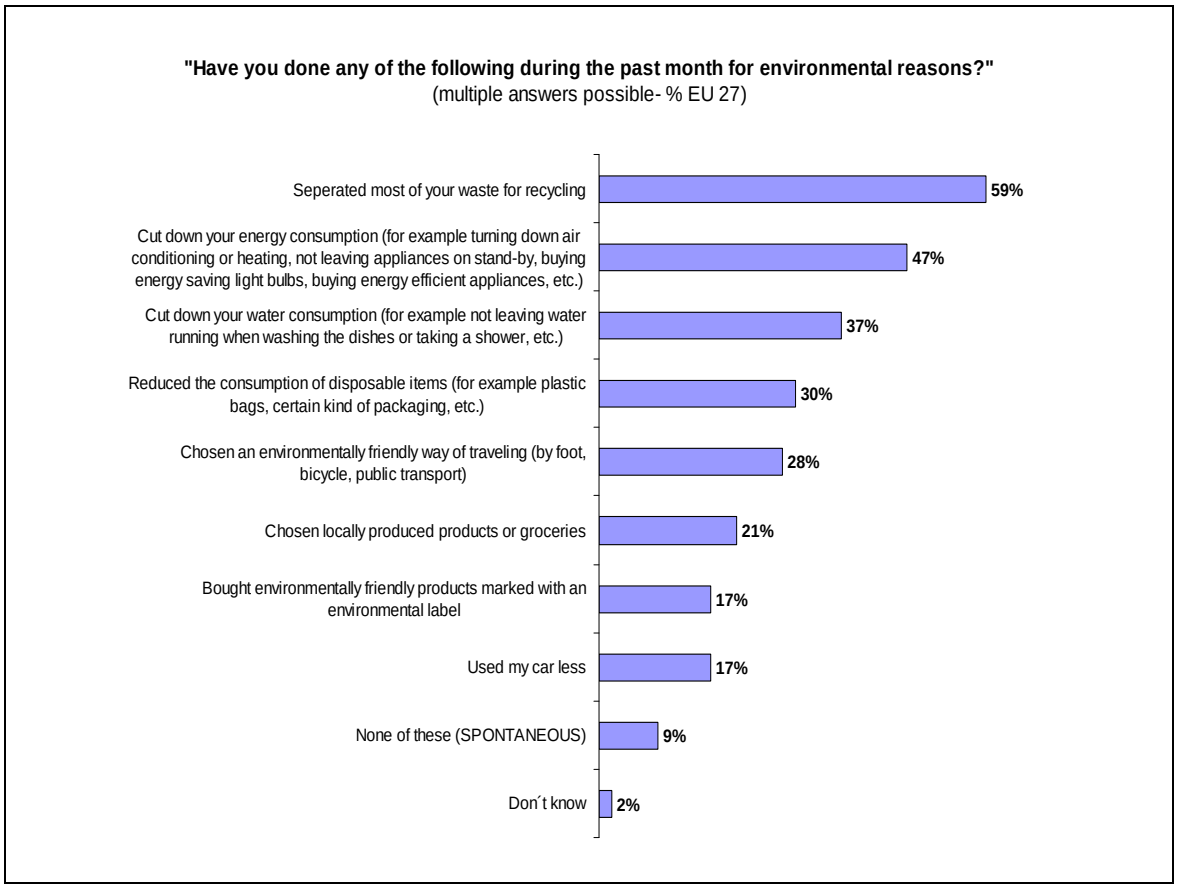


Fig. 5.2: Environmental actions taken by EU consumers
(European Commission 2008g: 20)

Bearing in mind the complexities of the domain and the relevance of use-related consumer behaviour, it becomes obvious that the provision of more eco-efficient products is an essential policy element, e.g. achieved by a strategy such as “choice-editing”, in which the most environment-damaging products are taken off the shelves or standards improved for all products (SDC and NCC 2006a, b),. But, this would not be sufficient for a holistic policy to promote sustainable consumption. For instance, achieving more sustainable washing practices is not only a matter of stimulating demand for more resource efficient washing machines and driers. It also requires advice on proper washing procedures (temperature, filling quantity, dosage of washing detergent) and – last, but not least – a reflection of the underlying social standards with respect to comfort, cleanliness, and convenience (see Shove 2003).
Hence, effective sustainable consumption policies will strongly benefit from addressing issues that are beyond supply side and efficiency improvements. One should more explicitly address use patterns and consumption levels. Achieving such changes in consumption patterns and reductions in consumption volumes has been referred to as “strong sustainable consumption” (Fuchs and Lorek 2005: 262f.). This concept is stricter than the so called “weak sustainable consumption” (ibid.) in which consumption efficiency is improved, i.e. the amount of environmental burden per product unit diminished. Supporting the development and proliferation of 3 litre vehicles would be an example

for the latter, getting more people to take the train instead of the car, and/or travelling shorter distances or less often would be an example of the first (ibid.: 263). Both concepts are necessary to reach current sustainability goals.
Against this background, policy makers should

– acknowledge the fact that consumption is a policy field in its own right,
– abandon simplistic assumptions about the emergence and 'mechanics' of modern consumption patterns and support further exploration of the drivers of current (un)sustainable consumption patterns and of the barriers to more sustainable practices, and
– take the entire consumption-related life cycle of products – purchase, use, and after-use – into account and not confine themselves to strive only for efficiency improvements (weak sustainable consumption), but rather seek to exploit the full potential of altered consumption patterns and reduced consumption levels (strong sustainable consumption).

Two limitations of the ASCEE project should be noted here, however:

– The project did not intend to provide evidence of possible priority areas for policy intervention. With respect to consumption domains, however, we can refer to relevant research that has identified mobility, food, and housing (including household appliances) as, environmentally, the most pressing ones (see, e.g., EEA 2005, Tukker et al. 2006). This still leaves the task to policy-makers to begin the development of SC-polices with a proper scoping exercise in which the main environmental, economic, and social impacts of the considered consumption domain are thoroughly assessed and potential benefits of policy measures clarified (cp. UNEP 2008: 45f.).
– Related to that, since the ASCEE project concentrated on explicit sustainability policies, it did not study the impact other policy fields (might) have on consumption patterns. It is obvious, for instance, that health policies, community planning and urban development, trade policies, or education policies influence the way people consume at least as severely as dedicated environmental policies do. Although this was not within the scope of the current project, it is obvious that integration of sustainable consumption into other policy arenas should be an overriding task.

5.2 Policy Approach

With respect to an appropriate policy approach, one can conclude from the empirical and conceptual results of the ASCEE project that policy makers should take a sufficiently flexible role in developing and, particularly, in implementing, sustainable consumption policies. They should ensure that they have the right stakeholders on board and establish an institutional framework that reflects the flexibility of the approach, without compromising ambitious policy goals.

Flexible Roles of Public Authorities
In sections 1.3 and 3.2, we elaborated the nature of modern policies to promote sustainable consumption. They shape up as a hybrid of 'classical' regulatory policy in a top-down government perspective. This is supplemented by voluntary, co-operative and network-based approaches that activate societal and business powers to exploit further the potential for green market transformation (governance mode). In such policy settings, governments should be flexible and adjust their role to the different situations and challenges in an iterative process of policy formulation and implementation. In particular, it appears useful to distinguish two types of scenarios:

– On the one hand, in a case where the environmental problem is pressing, e.g., when public health is imperilled, or the resilience of an ecosystem in danger, public authorities should act from a strong position and take action that instantaneously contributes to problem-solving.
– On the other hand, environmental and social challenges can be mid to long term in nature; such as improving the reusability of products or greening international trade conditions. Or, simple solutions to complex sustainability problems may be lacking or exceed the realm of national governments; such as with the ecological and social assessment of imported, versus regional, foodstuff or with working conditions in developing countries. In such cases, public authorities are well advised to motivate non-governmental players that can provide leverage for market transformations, to facilitate and moderate stakeholder consultations that can contribute to agenda setting and scoping of the task, and to properly observe initiatives taken by civil society actors. One example is the role of NGO's in the environmental policy of the Netherlands (see box).

These two roles, regulator on the one side and facilitator or moderator on the other side, are not an either-or. Governmental actors should be able to wear both 'hats' to meet the objectives associated with establishing more sustainable consumption patterns. Furthermore, these multiple roles are spread over diverse levels of government. They do not only differ according to the nature of specific sustainability challenge, but also with regard to the stage of development of the policy and the success of policy implementation. All in all, this renders policymaking and the creation of coherent strategies a complex task. But, taking this task seriously is particularly necessary in the case of sustainable consumption as the next section will demonstrate.

Dutch NGOs – new role due to new role of policy
In The Netherlands, several NGO-government actions have taken place. The Dutch government has engaged in collaboration with NGOs since the 1970s, or delegated the task to them with financial support. A programme of 4 million € per year is available. A number of information and educational campaigns have been conducted. In the beginning, these focused on moral appeals for change in consumption behaviour, and later provided practical, high quality and cost effective alternatives to consumers, such as energy saving solutions (Martens and Spaargaren 2005). Dutch NGOs have a strong status in the Netherlands and they have achieved some success. In the case of setting a ban on chlorofluorocarbons (CFCs) in spray cans, they succeeded by appealing to public opinion and negotiating with government. Promotion of the use of eco-labels has also been taken up, and the government has posed stricter regulations on the use of pesticides in food production (Martens and Spaargaren 2005). According to an OECD study, Dutch NGO initiatives succeeded in reducing household waste by an average of 57kg/year per household in the Netherlands (OECD 2002).

Against this background, policy makers should

– reflect more thoroughly on the different roles they may take in policy formulation and implementation,
– choose the occasions where they can add (most) value and then act with the necessary short and long term resources,
– keep a clear division of tasks for policy implementation and make sure policymaking is consistent within different ministries and among other stakeholders, and

– appropriate the new skills necessary to facilitate more cooperative patterns of policy intervention, such as moderation and mediation.

Appropriate Multi-Stakeholder Approaches

The success of SC policies is, to a large degree, dependent on the involvement of all strategic stakeholder groups. Which stakeholders are indeed relevant, depends on the objective and the context of the instrument(s) considered. When it comes to sustainable consumption, it is not only the suppliers of goods and services that take responsibility for the environmental and social characteristics of the goods they offer. Beyond that, it is the retail sector as the gatekeeper to the final consumer that also has to take responsibility, e.g. when deciding upon which products (not) to put on the shelves or which information (not) to provide its customers with. Moreover, non-governmental bodies, such as environmental and consumer organisations, may be well suited to take an active role, raise consumer awareness and give independent advice to consumers. They could be useful, for instance, in increasing the trustworthiness of eco labels and other sustainability claims, boosting the behavioural changes needed to meet climate policy targets, or informing about the ecosystems most strongly endangered (see box).

Non-governmental action taken to promote more sustainable consumption patterns

In 2007 Tesco, one of the largest global retail companies, joined forces with the Carbon Trust, the environmental consultancy ERM and a small number of the suppliers to measure the carbon in a range of products. A trial with carbon labelling started in April 2008 and included 20 products.

On the webpage www.label-online.de the German Consumer Initiative (Verbraucher Initiative) provides information and assessments for a plethora of environmental and social labelling schemes.

The WWF publishes sustainable seafood guides for a number of different countries worldwide. These guides tell, in a pocket format, which seafood to enjoy and which seafood to avoid from a sustainability perspective.

The ASCEE case studies deal with private-public campaigns like the UK “We’re in this Together”, with privately operated and fiscally facilitated instruments like the Dutch Green Funds Scheme, and with government-company-driven instruments such as technology procurement (see chapter 2). These instruments provide evidence that finding the appropriate level and intensity of stakeholder involvement is crucial for the successful development and implementation of policies promoting sustainable consumption and greening of the market. This multi-stakeholder orientation may be put into practice by public consultations (focus groups and surveys), multi-stakeholder task forces and working groups, national roundtables and workshops, etc. A multi-stakeholder approach can help identify the most appropriate policies, lead to better co-ordination of different supportive efforts and, hence, contribute to an optimised use of limited resources.

However, multi-stakeholder approaches are not an end in themselves. Participants support and prepare political activities, but they are not intend to result in infinite processes which might result in the avoidance to take actions. Participation must be embedded in a clear time-schedule and decision-path to avoid undecided situations. At the end of each participation process, processes must be closed and finished.

Against this background, policy makers should

– try to encourage business and civil society engagement in the promotion of sustainable consumption,
– establish and properly cultivate good relations with relevant stakeholders,
– ensure transparency and a good information flow between all those that a policy will influence, and
– consider correctly the split of roles in each individual situation and properly define who should do what.

Institutional Framework

Another principle to be considered carefully is that SC policy can only be effective when it is embedded in an appropriate institutional framework.[131] The proper institutional framing of policies supporting sustainable consumption may encompass different elements:

– *Nomination of a (public) body holding prime responsibility for developing and implementing sustainable consumption policy*: Responsibility for SC policies is often given to a single government authority; usually within the Environment Ministry. The appointed agency initiates the process, coordinates single activities and merges contributions from the different parties involved, such as other ministries, business sectors, and non-governmental actors. As a 'guardian of SC policies' this authority needs to be equipped with a sufficient amount of resources and bargaining power. As an alternative or supplementary to this public solution, one could envisage, particularly for SC policies, a non-governmental body holding major responsibility for the implementation of SC policies – provided that public authorities still have the oversight, at least of the overall results of the implementation process.
– *Encouraging inter-ministerial cooperation*: As mentioned before, sustainable consumption is a cross-sectoral policy domain. For instance, the promotion of organic food affects agricultural policies as well as consumer (information) policy. The pursuit of more sustainable housing relates, for example, to urban planning polices and also to 'classical' product-oriented policy (e.g., with respect to the energy efficiency of buildings and household goods). One can thus assume that when it comes to sustainable consumption practices, policy areas such as Consumer Affairs, Trade and Commerce, Agriculture, Development Aid, Health and Safety, Economic Affairs, Technology and Infrastructure Policy and, last but not least, Environmental Policy can be challenged simultaneously. This calls for policy integration and effective cooperation by public authorities; and, not just at a single level, but across the multiple levels of governance. Green cabinets and similar fora can be a suitable means of implementing this kind of integrated approach.
– *Setting objectives and targets for more sustainable consumption patterns:* It has been observed recently, that a lack of explicit and appropriate targets is a "common weak point" of present SC(P) policies (UNEP 2008: 51). Also, in ASCEE we encountered on only few occasions dedicated objectives. Germany, for instance, has committed itself in its national Strategy on Sustainable Development to achieve 20 % organic farming by 2010.[132] Similarly, Austria will expand organically managed farming surfaces by 50% within a period of five years (EEA 2008:

131 See also UNEP (2008: 31ff. and 47ff.) for a comprehensive overview.

132 As yet, with about 5% of organic agricultural land, Germany is far from accomplishing this goal. Hence, not very surprisingly, though this objective is still mentioned in the recently published progress report to Germany's National Strategy on Sustainable Development (Bundesregierung 2008: 47), it is not tied to a specific time period any more.

135). In the UK, the government intends to increase, by 2010, the use of public transport (bus and light rail) by more than 12% compared with 2000 levels (ibid.: 138). In France, 100% of bags should be made from biodegradable plastics by 2010 (ibid.: 137), and the Dutch government has set up the goal to reach 100 % sustainable product procurement by 2010 at the national administration level, and 50% at the level of all other public purchasers. As a general rule, the targets laid down in the policy to promote sustainable consumption should be specific and as realistic as possible (UNEP 2008: 51).

– *Linking SC policies to national strategies on sustainable development and elaborating a policy framework for SC:* In order to enhance commitment to the objectives set up for sustainable consumption, and, also, to get closer to the cross-sectoral integration mentioned above, it is worthwhile to strongly link SC policies with national policies or programmes on sustainable development. This is already the case for a number of countries, e.g. Belgium, and may help feed SC policies into a process of multi-stakeholder engagement and frequent monitoring.
– As part of, or, as an alternative to this exercise, some European countries have set up dedicated conceptual frameworks and policy programmes on sustainable consumption (e.g., Sweden). This may be especially beneficial for countries that have just begun to deal with consumption-related sustainability challenges. However, the present lack of integrated and cohesive strategies on sustainable consumption must not obscure the fact that countries, such as Germany, Norway, The Netherlands, or Denmark employ a large number and wide range of policy instruments relevant for such a strategy.
– *Organising high-level support:* The political commitment to pursue a SC policy needs a strong political commitment. That means not only the integration of SC in a sustainable development strategy must pursued, but, also, the emphasis from government must be clarified. That means that top representatives of government should engage in this topic and represent it accordingly.
– ***EU regulation on the reduction of stand-by power***
– *In July 2008, delegates of EU Member States and the European Commission (EC) endorsed a proposal for a regulation reducing standby power consumption in household and office products. This draft Commission Regulation is based on the Eco-design Directive (Directive 2005/32/EC). Once approved by the EU Parliament, the new regulation on electronic devices will take effect as of 2010.*
– *Creating a legislative basis for policy implementation:* The majority of cases and examples of innovative policies promoting sustainable consumption that we came across in the ASCEE project neither have nor require legislative back-up. Mostly, they were part of voluntary actions taken by government and other relevant actors. Nonetheless, as, for instance, waste management policies at EU and Member State levels have shown, legislation is a proper framing of environmental policies in cases where voluntary action fails to accomplish the targets set. Similarly, the example included in the box illustrates how current EU policies on energy-using products consequently exploit legislative potentials. A more recent example at Member State level would be France; where a framework law on SCP is under preparation, advocating, amongst others, labelling and bonus/malus-schemes, better control of green washing and strengthening of Corporate Social Responsibility (CSR). Hence, for policy makers it would be crucial to create a convincing legislative basis as a “threat” – reflecting the above mentioned ‘shadow of hierarchy’ – and to keep the debate alive in order to maintain public awareness and achieve binding commitments by those stakeholders sharing responsibility for successful policy implementation.

Against this background, policy makers should

– ensure that a proper institutionalisation of SC policies is achieved addressing one or several of the different elements depicted above,

– set up measurable policy goals and targets that provide mid- to long-term guidance for the stakeholders involved,
– commit at a high-level, to pursue a SC policy,
– create a legislative basis for a SC policy, and
– be prepared to develop threat potentials towards business and to have a role as “shadow of hierarchy”.

5.3 Policy Instruments

Every policy requires an adequate set of instruments and tools to put itself into action. Of course, this simple insight also applies to policies promoting sustainable consumption patterns. In the instrumental overview, and the case studies of ASCEE, we found that when choosing and designing an appropriate tool kit aimed to move consumption patterns into a more sustainable direction, certain ‘features’ of the instruments should be carefully considered.

Adaptability

Rapid technological advance is a major force in many consumer goods markets. This observation applies not only to electrical and electronic goods, but also to, for instance, non energy-using products such as cleaning products with fast changing formulations or clothing from varying fabrics. ‘Classical’ policy instruments, such as obligatory efficiency labelling or voluntary eco-labelling, are increasingly incapable of coping with the accelerated product dynamics. Hence, a dynamisation of requirements and a shortening of revision cycles becomes a crucial success factor for a policy that is to stimulate innovation and to support dissemination of greener products.
Public-private-partnerships that establish information platforms to present the ‘best-in-class’ in different product groups may be an additional way to meet this need for increased adaptability (see, for example, the TopTen platform, see section 2.3.3).

Community focussed

Consumers are strongly driven by habits, and convenience often takes precedence in busy daily lives. As a consequence, consumers tend to overestimate the costs and efforts of behaviour change and underestimate the positive impact of altered consumption patterns. Therefore, policy should create a framework which is supportive to collective progress and which contributes to mainstreaming sustainable consumption patterns.
One possibility of achieving this is building real or virtual communities, e.g., around public information campaigns or eco-labelling schemes; within which people can learn and demonstrate that (little) change in everyday life is actually feasible and worthwhile, and within which they can give and receive feedback to and from their ‘partners-in-crime’. In this sense, policies for the promotion of sustainable consumption may truly benefit from social marketing techniques and marketing experiences on brand communities.

Evidence based

Scientific evidence traditionally played a role in environmental policy formulation.[133] This is the domain of e.g. LCA-studies and related concepts. Such tools are based on technical and 'hard' data, such as carbon footprints, while paying less attention to the 'soft' data related to the consumption patterns, such as lifestyles, values and attitudes, or consumer biographies.

Also, today, a sound evidence base is important, but the thematic scope of the evidence required for proper SC policy design has changed. Evidence from social sciences which sheds light upon, e.g., the heterogeneity of consumer groups, the barriers to change in everyday life, the relevance of social relations for individual behavioural routines, etc. is needed to be able to design an effective sustainable consumption policy.

SCP Evidence Base research in the United Kingdom

The UK Environmental Ministry Defra is developing an SCP related evidence base. It should be used by stakeholders inside and outside government. The evidence base is designed to inform effective policy decisions. The programme is structured around four themes:

SCP measurement methods,

Sustainable products and services,

Understanding and influencing pro-environmental behaviour,

Business, environment, and economy.

(see www.defra.gov.uk/environment/business/scp/research)

The improvement of knowledge to increase evidences is needed, but this approach should not be accepted as an excuse not to act. Policy decisions should not be postponed for years waiting for all the evidence based arguments.

Socially sustainable

The ASCEE research showed that the social dimension of sustainable consumption is not sufficiently addressed in current policies There are few approaches in which social aspects, such as child labour or international trade relations, are given due consideration. This is not a mainstream policy approach and, hence, represents a severe 'bias' in today's policies that claim to be sustainable but mainly focus on environmental issues. In particular, instruments such as product labelling and public procurement policies might be fairly low-hanging fruits for further integrating social requirements along the value chain.

Against this background, policy makers should

133 Successful evidence-based environmental policies relying on appropriate evidence are exposed to new problems due to new and more scientific based knowledge. For example, reliability, independence, uncertainties. Political actors demand reliable scientific evidence, but are faced with a process of scientific evolution in which knowledge is constantly being challenged by counter-expertise (Kusch 2002a).

– check the instruments applied with respect to their ability to adapt to altered circumstances and assure the possibility of reacting quickly and dynamically to changes in markets,
– strive for community building among consumers wherever this is meaningful and feasible,
– support the establishment of a user-friendly data base comprising detailed and up-to-date information on the life-cycle related environmental impacts of products, on the main drivers, and, on the socio-economic characteristics of current consumption patterns, and
– go for a more forceful integration of the social dimension of sustainability into SC policies.

5.4 Policy Documentation

Within ASCEE, we observed two major shortcomings of present policies to promote sustainable consumption. On the one hand, policies in place are often not properly monitored. On the other hand, the potential to disseminate innovative policy approaches has not been sufficiently exploited.

Monitoring of policy impacts

The monitoring of the impacts of public policies that aim to support the proliferation of more sustainable consumption patterns comprises two major components.

First, public authorities should assess possible impacts of sustainable consumption instruments prior to their implementation (ex-ante). This could provide preliminary insights into potential direct and indirect impacts of an instrument, contribute to better policy-making and increase the legitimacy of the planned instruments. To support this ex-ante impact assessment, the ASCEE project has prepared an assessment tool (see chapter 4) enabling discussion and visualisation of the different effects associated with the policy instrument(s) under consideration.

Second, when instruments have been implemented, a periodical monitoring is necessary to judge the degree of goal achievement and to correct mismatches of policy formulation, implementation and policy impacts. This monitoring could be embedded in the monitoring of sustainability policy in general, but with some clear consumption oriented indicators (see box).[134]

134 Cp. UNEP (2008: 64ff.) for a more comprehensive discussion of the SCP indicators.

Possible indicators for assessing progress in sustainable consumption (Ministry of Agriculture, Food and Consumer Affairs Sweden 2005)

Sustainable eating:

Number of overweight or obese people

Market share of organic labelled products

Energy utilisation for heating and other electrical power use per unit area in single-family dwellings, multi-family dwellings and commercial buildings

Total CO_2 household emissions

Sustainable living:

Household access to commercial and public service (such as food, fuels, postal services and elementary schools)

Amount of household waste

Sustainable travelling:

CO_2 emission levels in new cars

Household access to public transportation

Total CO_2 household emissions.

The results of the periodical monitoring should be reported on and be fed into a continuous improvement process (CIP) – part of which would be making the results available for the public in order to increase the social acceptability and credibility of the policy.

Dissemination of policy innovations

Another issue of policy documentation refers to the need to provide easy access to good practices to a larger audience. As we mentioned in the introduction to this chapter, the main focus of the ASCEE project was on the policy activities at Member State level. But, surprisingly, there is little exchange of the experiences gathered in national policies on sustainable consumption. Hence, a more intensive networking among European public authorities and also between public authorities, the research community and CSOs with respect to SC policies would be worthwhile. The so-called Open Method of Coordination (OMC), which represents an intergovernmental means of governance relying on voluntary cooperation of Member States, could build a general framework for such efforts.[135] At a more specific level, dissemination activities may build upon one or several of the following components:

– A European policymakers network on sustainable consumption similar to, or a further development of, the formal policy network on Integrated Product Policy (IPP).[136] The European Environment Agency (EEA) or the European Topic Centre on SCP (ETC/SCP), due to commence its work at the beginning of 2009, could serve as knowledge broker for such a network. It could be accompanied by a special forum involving research and CSO.
– Better coordination of different relevant product assessment databases which exist already, e.g. in the United Kingdom in the context of its Market Transformation Programme (MTP)[137] or the LCA-platform at the Joint Research Centre at Ispra[138].
– Extension of existing information platforms, such as the "UNEP Clearinghouse for National SCP Programmes"[139],

- ***Activities of the Marrakech Task Force on Sustainable Lifestyles***
- *The Marrakech Task Force on Sustainable Lifestyles focuses on exploring actions that individuals can take to modify their lifestyles to fit a more sustainable pattern of consumption. The Task Force runs a number of different projects:*
- *Development of the "UNEP Creative Gallery of Sustainability Communication".*
- *Collection of empirical evidence on sustainable lifestyles and the environmental implications of current lifestyles in order to identify future action towards sustainable lifestyles.*
- *Conducting a global online survey on sustainable lifestyle -yet to come.*
- *(See www.unep.fr/scp/marrakech/taskforces/lifestyles.htm)*

135 See Citi and Rhodes (2007), Smismans (2008) and Hatzopoulos (2007).

136 The formal IPP network was created in 2004 and brings together Member States and key stakeholders (see http://ec.europa.eu/environment/ipp/meetings.htm). It is chaired by the European Commission. It is supplemented by an informal IPP network which is chaired by the Member States which has the Presidency of the Council. Beside Member States, other countries like Switzerland join it.

137 See http://www.mtprog.com/cms/product-data/ (accessed November 13, 2008).

138 See http://lca.jrc.ec.europa.eu/ (accessed November 13, 2008).

139 See http://www.unep.fr/scp/nap/clearinghouse (accessed December 22, 2008).

by integrating an information module on good practices in sustainable consumption policies. In this respect, close co-operation with the Marrakech Task Force on Sustainable Lifestyles (see box), in particular, will prove beneficial.

– The EU Commission should create a database of good or best practices in the area of sustainable consumption which collects, documents and comments on, promising approaches and tools developed at Member State level. Similar databanks exist within the European ETAP-process[140] or with regard to IPP[141]. However, these databanks must be updated periodically.
– Also on a Member State level, networking activities and dialogues are needed, both to exchange bottom-up experiences and to push and activate local, regional and national stakeholders and policy with regard to sustainable consumption. A promising example is the German national stakeholder dialogue on sustainable consumption[142].
– Against this background, policy makers should
– take care to develop an appropriate monitoring system linked to agreed SC objectives,
– push administrations to organise international and national dialogues and sessions to exchange experiences, and
– stimulate the development and updating of SC databanks.

6 Outlook

The ASCEE research project and this final report aim to support policy making. Funded by DG Research of the European Commission, ASCEE focuses on European SCP policies, encompassing activities at the national, regional and EU level. In the previous chapters, we have dealt with experiences drawn from sustainable consumption instruments and elaborated some key recommendations for policy makers.
In this final chapter, we will provide an outlook on future developments and activities. We also outline the most important research requirements that have been identified by the ASCEE project.

Sustainable consumption policy and other policy domains

Consumption patterns are shaped by numerous societal, institutional and public policy-related factors. These factors strongly influence the way people prepare and take decisions, buy products and services and consume them. Public systems for providing education, transportation, electricity, heat, water, and waste services are good examples, as are urban planning and tax regimes. However, these domains are often not regulated by the authorities that deal with environmental or consumer policy, but rather by entities such as those in charge of economic affairs, employment/social affairs, finances and public health. Although sustainable consumption is not the primary objective of such authorities, their activities enlarge or limit the potential for sustainable behaviour. Infrastructural arrangements, for example, create a framework for consumer choices. Therefore, it is also necessary that these enabling structures and rules encourage and support sustainable consumption patterns.
Hence, what is needed is a systematic overview of how different policies separately and jointly

140 See http://webapps01.un.org/dsd/scp/public/presentIndex.do;jsessionid=D6985DBCAF08CC17B50606A502A2322B (accessed October 10, 2008).

141 See http://ec.europa.eu/environment/ipp/activities_ms.htm (accessed October 8, 2008).

142 See http://www.dialogprozess-konsum.de/ (accessed November 13, 2008).

shape current consumption patterns. A further integration of the various policy domains will be necessary to induce more sustainable consumption.

Upgrade the old generation of instruments

The focus of ASCEE was on innovative instruments and approaches. We did not deal with widely disseminated known "old-fashioned", but established, approaches. To a great extent, we focused on more innovative approaches. This does not imply that these former instruments have lost their relevance. The exclusion was, rather, the result of our research focus. Upgraded environmental policy instruments and instruments of other policy domains are nonetheless an additional key element in support of sustainable consumption.

"Traditional" eco-labels like the European eco-label, the Nordic Swan or the German Blue Angel could be adapted to meet new challenges. The consideration of fair trade or resource intensity is one aspect. Another important factor is to take into consideration the consequences of demographic change (e.g. with regard to the product groups dealt with, to the criteria highlighted or the logos used) when 'upgrading' a label system. A question to be posed here could be: how could the interaction between different instruments, e.g. with mandatory labels and quantitative product information, become more complementary?

Non-environmental instruments could be upgraded and linked with environmental issues, for example, corporate or income taxes could reflect environmental concerns in new ways. It is possible that – for instance – the share of purchases of eco-efficient products might reduce tax burdens, or investment in green funds could be favoured by the tax regime.

Link top-down perspective with bottom-up perspective

ASCEE focused its research on top-down initiatives and activities. We demonstrated that a plethora of different activities is designed and implemented by the various levels of government. Furthermore, the character of the activities is changing. As outlined in the previous chapter, the governance mode gains increasing importance. This includes the – increasing – importance of bottom-up approaches, i.e. activities of civil society and business to initiate and implement measure towards more sustainable consumption patterns.

There are a large number of impressive and interesting bottom-up approaches.[143] Top-down and bottom-up approaches supplement each other and mobilise additional opportunities. The interlinkages between both approaches have not yet been well reflected. The potentials for linking top-down and bottom-up approaches have not been mobilised sufficiently. This potential for iterative and interactive linkage between policy encouragement and activities of civil society should be better considered and integrated into a conceptual approach to strengthen sustainable consumption to use complementarities and synergies of both approaches.

Enlarge the perspective: a holistic monitoring

As highlighted in the previous chapter, a systematic overview of consumption patterns and their projected development is needed. This necessitates well-defined indicators that are linked to targets of sustainable development. Several ongoing projects deal with this topic, and it is hoped that the efforts of e.g. the European Topic Centre (ETC) continue, with specific emphasis on the sustainability of household consumption.

Nowadays, governments justify their policies in terms of a higher gross domestic product (GDP). Debates about the appropriateness of GDP as an indicator of welfare and macroeconomic devel-

143 The DG Research funded project EMUDE (cp. EMUDE 2006) reported on several of such initiatives.

opment started in the beginning of the 1970s[144]. For a long time, these scientific – and partly political – discussions did not seem to attract sufficient attention from policy makers. Interestingly, however, the European Commission has recently – together with the European Parliament and WWF – joined an initiative called "Beyond GDP".[145] This joint initiative is a new and more promising approach, where a broader set of key indicators is considered for integration into economic and environmental reporting and strategies.

There are several other key indicators such as the global footprint[146] or the happy planet index (HPI)[147], which contrast the uni-dimensionality of GDP. Yet, none of them is broadly accepted nor viewed as an additional key policy indicator by policy makers. The happy planet index is nonetheless especially promising from the viewpoint of sustainable consumption. It links the environmental dimension of sustainability with well-being: "*what we put in (resources), and what comes out (human lives of different lengths and happiness)*"[148]. The HPI is an interesting approach and could contribute to a turnaround in our economy. Instead of maximising GDP, it reminds us of the objective behind economic activities; namely, the guaranteed, increasing welfare and well-being within the environmental capacity of the planet. Happiness as a broader concept reflects the idea that the final objective is not to consume, but to be happy, satisfied feel good. These objectives highlight the social dimension of sustainability and illustrate the importance of shifting economic activities towards the sufficiency paradigm.

It is important that these approaches continue and are extended to a lively discussion on aiming beyond GDP.

Improve the knowledge basis: Further research needed

Research in the domain of sustainable consumption has gained momentum in recent years. National research programmes in the UK[149] and Germany[150], as well as EU-funded activities underline this. However, we identified several open research questions, such as:

– Target groups

  – Tailoring sustainable consumption policy to different societal groups appears to be an important consideration for designing effective policy measures. The identification of different target groups for sustainable consumption policy and the elaboration of target-group specific approaches are still juvenile. The existing models for target group oriented sustainable consumption need to be mapped in detail. How could and should the policies be further specified?
  – There tend to be winners and losers in implementing sustainable consumption policies. Since the cost-benefit-ratios are not always obvious, basic empirical research on implications, impacts and transition paths towards sustainable consumption are needed. It

144 Especially the contribution from Nordhaus and Tobin (1972) opened this discussion.

145 See the webpage http://www.beyond-gdp.eu/ (accessed October 24, 2008).

146 http://www.footprintnetwork.org/en/index.php/GFN/ (accessed October 27, 2008).

147 See http://www.happyplanetindex.org/ (accessed October 27, 2008).

148 Quoted according http://www.happyplanetindex.org/about.htm (accessed November 28, 2008).

149 See http://www.defra.gov.uk/environment/business/scp/research/index.htm (accessed December 18, 2008).

150 See http://www.sozial-oekologische-forschung.org/de/947.php (accessed October 24, 2008).

is important to look for strategies on how better to support those who stand to lose from policies.

- Indicators
  - New indicators to measure social developments beyond mere GDP are under discussion. How can these approaches be combined with sustainable consumption policies, bearing in mind also the central role that consumption has had in the Western societies?

- Strengthening sustainable consumption
  - Sustainable consumption policy is often based on the transmission of information, e.g. from manufacturers or retailers to consumers. To strengthen rational decision-making, legislation has been proposed to force suppliers to take further measures to inform consumers. However, additional information could result in an information overload. It should therefore be carefully analysed whether such an approach is a promising strategy, or if other strategies – like strengthening the role of information mediators such as environmental and consumer organisations – are more appropriate.
  - The consumer is often described as a single, sovereign individual taking his/her decisions on the basis of accurate information and rational preferences. The findings in ASCEE support the view that this is not necessarily a correct description of the consumption process. The claim is that the choices of the consumers should be steered at the point of sales, or even earlier ("choice editing"). The challenge remains to understand how such a strategy could be implemented.
  - There are a lot of interesting examples of called "knowledge brokerage" – the process of facilitating information transfers between the scientific community and policy makers – in support of sustainable consumption. Many websites strive to disseminate data and good practices dealing with sustainable consumption, for example. Yet, who should use these sources? How do they use them? Is the information taken properly into account in the decision making process? How could the interaction between the providers and (potential) users be improved and organised?
  - The conclusions of the ASCEE project support the view that there are a large number of bottom-up approaches that strive to support sustainable consumption practices. The challenge is to elaborate an optimal policy framework for these approaches, so as to contribute to their continuation; and, also, to stimulate new ones.

- Symbolic consumption
  - Consumers position themselves by using symbols or symbolic goods and services. The challenge is to promote and create symbols, which express a new more sustainable way of life.

Research needs room and places for discussion and reflection. Nevertheless, the DG Research funded SCORE-network[151] has expired, and there are no international journals with an explicit focus

151 See http://www.score-network.org/score/score_module/index.php?cat_name=cat_t_sco_home (accessed October 24, 2008).

on sustainable consumption.[152] The exchange of views and experiences in the scientific community should be supported by appropriate public means to accompany political processes in the area of sustainable consumption.

152 Obviously, publications such as the Journal for Cleaner Production and the Journal for Consumer Policy occasionally deal with sustainable consumption, but their main focus is on other topics.

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