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[5] http://www.ecotopten.de/download/EcoTopTen_Innovationsziele_Fahrrad.pdf

[6] http://www.eccj.or.jp/top_runner/index_contents_e.html

Promoting eco-innovations: The Environmental Technologies Action Plan (ETAP) of the EU Commission

Miriam Dross and Wiebke Hederich

1 Introduction

In 2004, the European Commission introduced a new instrument to its environmental policy: The Environmental Technologies Action Plan (ETAP) was adopted in January 2004 (COM (2004) 38). It includes an overview of promising technologies which could address major environmental problems; an analysis of the market and institutional barriers that are holding back development and use of specific technologies; and a targeted package of measures, building on existing instruments, to address these barriers.

With the help of ETAP, the Commission wants to make the development of environmental technologies a fundamental part of its environmental strategy. Along the lines of the Lisbon strategy, which tries to yoke together economic growth, job creation and a better environment, ETAP wants to improve the situation for business, jobs and the environment simultaneously. Given the contribution that environmental technologies make to economic growth and employment, this program intends to protect the environment and, at the same time, enhance innovation and competitiveness in Europe. In this way, the Commission is also reacting to a widespread view, which holds that command and control approaches should be complemented by other instruments, if not given up all together.

A first assessment by the Commission and extensive stakeholder consultations proved the complexity of switching from traditional to new technologies. During this process, insufficient access to capital was identified as a key barrier to a broader use of environmental technologies. As a result, ETAP attempts to tackle the barriers by both an effective information policy and diverse financial instruments.

2 Actions under ETAP

The ETAP integrates different actions to promote the take-up of new environmental technologies. These encompass research programmes, technology

platforms, economical instruments (such as grants for certain investments, tax incentives and green public procurement) and technology transfer.

To support the introduction of new technologies into the market, the European Commission has introduced research programmes and technology platforms. Since it is generally accepted that existing environmental technologies are not sufficient to safeguard sustainable development, the Commission has established research programs aimed at improving the innovation process. The sixth framework program (2002-2006) of the European Union's research and development program dedicated € 2,120 million to sustainable development, global change and ecosystems, concentrating on three major fields: sustainable energy systems, sustainable surface transport and global change and ecosystems.[1]

European Technology Platforms (ETPs) provide a framework for defining research and development priorities, timeframes and action plans on strategically important issues. It is intended that they will foster effective public-private partnerships and, in this way, better meet the needs of industry. So far, more than twenty technology platforms have been designed in order to bring together all interested stakeholders with the aim of creating a long-term vision to develop and promote a specific technology or solve particular issues in key environmental technologies, e.g. hydrogen and fuel Cells, photovoltaics, steel, water supply and sanitation.[2]

The European Hydrogen and Fuel Cell Technology Platform (HFP)[3] is designed to facilitate and accelerate the development and deployment of cost-competitive, world class European hydrogen- and fuel cell-based energy systems and component technologies for application in transport, stationary and portable power.

To convince the market of the merit of new technologies, the Commission deems environmental technology verification (ETV) fundamental. ETV generally involves improved testing, performance verification and standardisation of environmental technologies and can thereby accelerate market acceptance of innovative technologies by providing users with information about performance, thereby substantially reducing the uncertainty for purchasers. The European Union is currently funding research programmes to develop a European ETV program. This is the goal of the so-called TESTNET project (Towards European Sectorial Testing Networks for Environmentally sound Technologies), a project conceived to design, develop and test an ETV system.[4] TESTNET aims to develop an independent system so as to provide the market with credible performance data. Its focus technology areas are: water treatment, clean technology and monitoring related to these two technology areas. It is cooperating with successful role models such as the ETV Program of the US Environmental Protection Agency[5] and ETV Canada.[6] Other European programs such as EURODEMO[7] and PROMOTE[8] cover special areas such as remediation technologies for soil and groundwater (EURODEMO) and soil and groundwater protection and rehabilitation (PROMOTE).

3 Improving Market Conditions

The European Commission aims to improve the market conditions by dint of a range of instruments. These are chiefly economical instruments, such as grants for certain investments, tax incentives and green public procurement (see article on GPP by Jill Michielssen in this issue). Continuous improvement as regards the overall environmental impact of so-called 'Energy-using Products' (EuP) constitutes one of the main objectives in European product policy. The focus herein is on identifying the major sources of negative environmental impacts and avoiding the transfer of pollution. By encouraging manufacturers to design products with the environmental impacts of their entire life cycle in mind, the Commission strives for an Integrated Product Policy (IPP) which expedites the move towards improving the environmental performance of energy-using products.

The Directive 2005/32/EC on the eco-design of EuPs established a framework for the setting of Community eco-design requirements for energy-using products with the aim of ensuring the free movement of those products within the internal market.[9] One aspect is to encourage continuous improvement as regards the overall environmental impact of these products by the CE-logo. The eco-design of products represents a crucial factor in the Community strategy on Integrated Product Policy. It is regarded by the Commission as a preventive approach, which is designed to optimise the environmental performance of products whilst maintaining their functional qualities. Thus, it shall provide

1 http://cordis.europa.eu/sustdev/.

2 http://cordis.europa.eu/technology-platforms.

3 https://www.hfpeurope.org.

4 http://www.est-testnet.net.

5 http://www.epa.gov/etv.

6 http://www.etvcanada.com.

7 http://www.eurodemo.info.

8 http://www.promote-etv.org.

9 Art. 1 of the Directive 2005/32/EC.

genuinely new opportunities for manufacturers, consumers and society as a whole (in the form of, for instance, electrical and electronic devices or heating equipment), coherent EU-wide rules for eco-design and shall also ensure that disparities among national regulations do not become obstacles to intra-EU trade.[10] Further aspects of the plan relate to EMAS[11] and green public procurement. The European Commission also proposes to address training needs in industrial and business settings, which constitute yet another barrier to the take-up of environmental technologies, by developing training programs as well as ones to raise awareness. Finally, one of the objectives of ETAP is to support sustainable development in developing countries by virtue of technology transfer.

4 ETAP's Implementation

In order to facilitate the Europe-wide implementation of ETAP, and to direct the co-operation between all participants, a High Level Working Group (HLWG) was established. It is composed of representatives from the Member States and from European Commission services in charge of ETAP (DG Environment and DG Research). The 'Open Method of Co-ordination' will be used with the Member States in order to exchange ideas on best practices, the development of indicators, and the setting of guidelines and timetables. However, the complete success of ETAP relies on the participation of all stakeholders and, thereby, the mobilisation of relevant business and finance players and technology developers working in the field. A European Panel on Environmental Technologies will be set up. Forum meetings will be organised as conference-type events. Relevant players from business, finance, and technology development as well as NGOs who are actively involved in eco-innovation and environmental technologies will be invited to participate. The Forum will provide a platform for discussion, debate and interaction; it will foster mobilisation towards common objectives and concrete strategies for future action.

5 Conclusion

While most of the actions claimed by the plan already existed, ETAP is designed to coordinate and promote them. However, its ambitious goals are being met with scepticism by both industry and environmentalists. The EEB criticised the Environmental Technology Action Plan issued by the Commission for not being sufficiently visionary and for lacking ambition, commitment and urgency. Furthermore, the EEB challenges the notion that federations of industry and businesses are the suitable partners for ecological innovations as opposed to NGOs and pro-active businesses. From a general point of view, it remains to be seen whether ETAP will contribute more than a new theoretical framework to existing initiatives.

10 http://ec.europa.eu/enterprise/eco_design.

11 http://ec.europa.eu/environment/emas.

The Öko-Institut (Institut für angewandte Ökologie - Institute for Applied Ecology, a registered non-profit-association) was founded in 1977. Its founding was closely connected to the conflict over the building of the nuclear power plant in Wyhl (on the Rhine near the city of Freiburg, the seat of the Institute). The objective of the Institute was and is environmental research independent of government and industry, for the benefit of society. The results of our research are made available of the public.
The institute's mission is to analyse and evaluate current and future environmental problems, to point out risks, and to develop and implement problem-solving strategies and measures. In doing so, the Öko-Institut follows the guiding principle of sustainable development.
The institute's activities are organized in Divisions - Chemistry, Energy & Climate Protection, Genetic Engineering, Sustainable Products & Material Flows, Nuclear Engineering & Plant Safety, and Environmental Law.

The Environmental Law Division of the Öko-Institut:
The Environmental Law Division covers a broad spectrum of environmental law elaborating scientific studies for public and private clients, consulting governments and public authorities, participating in law drafting processes and mediating stakeholder dialogues. Lawyers of the Division work on international, EU and national environmental law, concentrating on waste management, emission control, energy and climate protection, nuclear, aviation and planning law.

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The University of Applied Sciences in Bingen was founded in 1897. It is a practiceorientated academic institution and runs courses in electrical engineering, computer science for engineering, mechanical engineering, business management for engineering, process engineering, biotechnology, agriculture, international agricultural trade and in environmental engineering.

The *Institute for Environmental Studies and Applied Research* (I.E.S.A.R.) was founded in 2003 as an integrated institution of the University of Applied Sciences of Bingen. I.E.S.A.R carries out applied research projects and advisory services mainly in the areas of environmental law and economy, environmental management and international cooperation for development at the University of Applied Sciences and presents itself as an interdisciplinary institution.

The Institute fulfils its assignments particularly by:
- Undertaking projects in developing countries
- Realization of seminars in the areas of environment and development
- Research for European Institutions
- Advisory service for companies and know-how-transfer

Main areas of research:
- **European environmental policy**
  - Research on implementation of European law
  - Effectiveness of legal and economic instruments
  - European governance
- **Environmental advice in developing countries**
  - Advice for legislation and institution development
  - Know-how-transfer
- **Companies and environment**
  - Environmental management
  - Risk management

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The Society for Institutional Analysis was established in 1998. It is located at the University of Applied Sciences in Darmstadt and the University of Göttingen, both Germany.
The sofia research group aims to support regulatory choice at every level of public legislative bodies (EC, national or regional). It also analyses and improves the strategy of public and private organizations.
The sofia team is multidisciplinary: Lawyers and economists are collaborating with engineers as well as social and natural scientists. The theoretical basis is the interdisciplinary behaviour model of *homo oeconomicus institutionalis*, considering the formal (e.g. laws and contracts) and informal (e.g. rules of fairness) institutional context of individual behaviour.

The areas of research cover
- Product policy/REACh
- Land use strategies
- Role of standardization bodies
- Biodiversity and nature conversation
- Water and energy management
- Electronic public participation
- Economic opportunities deriving from environmental legislation
- Self responsibility

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- German Federal Ministry of Education and Research
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- German Institute for Standardization (DIN)
- German Federal Environmental Agency (UBA)
- German Federal Agency for Nature Conservation (BfN)
- Federal Ministry of Consumer Protection, Food and Agriculture

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In many countries lawyers are working on aspects of environmental law often with environmental initiatives and organisations or as legislators, but have limited contact with other lawyers abroad, although such contact and communication is vital for the successful and effective implementation of environmental law.

In 1990 a group of lawyers from various countries therefore decided to initiate the Environmental Law Network International (elni) to promote international communication and cooperation worldwide. Since then elni has grown to a network of about 350 individuals and organisations from throughout the world.

Since 2005 elni is a registered non-profit association under German Law.

elni coordinates a number of different activities:

Coordinating Bureau

The Coordinating Bureau was originally set up at and financed by the Öko-Institut in Darmstadt, Germany, a non-governmental, non-profit making research institute. The Bureau is currently hosted by the University of Applied Sciences in Bingen. The Bureau acts as an information centre where members can obtain information about others working in certain areas thus promoting the development of international projects and cooperation.

elni Review

The elni Coordinating Bureau produces and sends to each member the elni Review twice a year containing members' reports on projects, legal cases and developments in environmental law. elni therefore encourages its members to submit such articles to be published in the Review in order to allow the exchange and sharing of experiences with other members.

elni Conferences and Fora

elni conferences and Fora are a core element of the network. They provide scientific input and the possibility for discussion on a relevant subject of environmental law and policy for international experts. The aim is to bring together scientists, policy makers and young researches, giving the opportunity to exchange views and information as well as developing new perspectives.

Publication Series

The elni publications series contains 12 volumes on different topics of environmental law.

- Environmental Law and Policy at the Turn to the 21st Century, Liber amicorum, Betty Gebers, Ormond/Führ/ Barth (eds.) Lexxion 2006.
- Access to Justice in Environmental Matters and the Role of NGOs, de Sadeleer/Roller/Dross, Europa Law Publishing 2005.
- Environmental Law Principles in Practice, Sheridan/Lavrysen (eds.), Bruylant 2002.
- Voluntary Agreements - The Role of Environmental Agreements, elni (ed.), Cameron May Ltd., London 1998.
- Environmental Impact Assessment - European and Comparative; Law and Practical Experience, elni (ed.), Cameron May Ltd. London 1997.
- Environmental Rights: Law, Litigation and Access to Justice, Deimann / Dyssli (eds.), Cameron May Ltd. London 1995.
- Environmental Control of Products and Substances: Legal Concepts in Europe and the United States, Gebers/Jendroska (eds.), Peter Lang, 1994.
- Dynamic International Regimes: Institutions of International Environmental Governance, Thomas Gehring; Peter Lang, 1994.
- Environmentally Sound Waste Management? Current Legal Situation and Practical Experience in Europe, Sander/ Küppers (eds.), P. Lang, 1993
- Licensing Procedures for Industria Plants and the Influence of EC Directives, Gebers/Robensin (eds.), P. Lang, 1993.
- Civil Liability for Waste, v. Wilmowsky/Roller, P. Lang 1992.
- Participation and Litigation Rights of Environmental Associations in Europe, Führ/ Roller (eds.), P. Lang, 1991.

elni Website: elni.org

The elni website at *http://www.elni.org* contains news about the network and an index of elni articles, gives an overview of elni activities, and informs about elni publications. Internships for young lawyers/law students at the Öko-Instituts environmental law division are also offered on the web.

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