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REVIEW

- REACH and the safe use of chemicals
- Risk management under REACH
- Key priorities of NGOs on REACH
- Definitions of waste, recycling and recovery
- The UK Government's Ship Recycling Strategy
- Legislating e-waste management
- Exemptions under Article 5 (1) (b) RoHS Directive
- The new strategy of the CEN Environmental Helpdesk
- The power of green public procurement

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measures. Therefore, ANEC and ECOS will try once again to push for changes in line with the positions expressed so often in the past.

ANEC in brief

ANEC is the European consumer voice in standardisation, representing and defending consumer interests in the process of standardisation and certification, also in policy and legislation related to standardisation. Our aim is a high level of con-

sumer protection. The Brussels based Secretariat co-ordinates a network of more than 200 consumer representatives across Europe. Our experts contribute directly to the work of over 80 Technical Committees, Working Groups and political bodies of the European and international standards organisations. ANEC's areas of priority are Child safety, Design for All, Domestic Appliances, Environment, Information Society, Services and Traffic Safety.

EcoTopTen – innovations for sustainable consumption

Kathrin Graulich

Abstract

Buying green products is neither easy for private consumers nor for public procurement authorities. Besides the common belief that green products are generally more expensive than conventional products there is the overall difficulty to identify green products.

Therefore, the aim of the EcoTopTen campaign is to deliver a market survey of the most energy efficient products in Germany. Most of the analysed product groups deal with energy using products (EuP): refrigerators, freezers, washing machines, tumble-driers, cookers, televisions, notebooks, flat panel displays, printers, boilers and lighting equipment. For each product group, Oeko-Institut develops minimum criteria relating to environment, quality and costs. The criteria are based, as far as possible, on existing labels and product tests, like the European energy label, the German eco-label, as well as labels for green electricity or product tests published in the journal of the German "Stiftung Warntest¹".

EcoTopTen goes far beyond existing labels and consumer information schemes: it integrates environmental and quality aspects as well as annual life cycle costs. In doing so, Oeko-Institut promotes the further development from environment labels towards sustainability labels. At the same time, EcoTopTen already works in a similar way as the one set in the requirements of the European Directive on Energy using Products (EuP) and thus de-

livers valuable experiences in this field. Additionally, Oeko-Institut promotes sustainable product development: sustainable innovation goals are communicated to manufacturers showing which advanced criteria relating to environment, quality and costs should be met by products in a few years.

With EcoTopTen, Oeko-Institut finally provides a practical basis for policy approaches, e.g. similar to the Japanese Top-Runner concept. This concept makes environmental performance values of today's most efficient products binding as a minimum standard for products in a few years – EcoTopTen gives an overview on today's most efficient products.

1 Introduction

Most consumers, whether private or public, are not willing to wade through many sales brochures, test reports or consumer advice manuals to find the 'right' product. Since March 2005, the EcoTopTen campaign provides German consumers with comprehensive overviews of those products that are recommendable in every respect. Such products not only have a low environmental impact, but also meet customers' quality expectations and are affordable at the same time. EcoTopTen delivers information on the purchase prices and on further annual costs, such as for electricity or water needed for using the products. In view of comparison possibility, typical products failing to meet the EcoTopTen criteria are also presented. These market overviews should put consumers in a position to take quick decisions in favour of sustainable products. The campaign also provides tips on how to use these products in a way that saves money and is less environmentally harmful.

¹ German body responsible for product quality tests and consumer information

EcoTopTen is a major initiative for sustainable consumption and product innovations in mass markets initiated by Oeko-Institut in Freiburg, Germany. The EcoTopTen research project [1] is sponsored by the Federal Ministry of Education and Research. The consumer information campaign [2] is sponsored by the German Ministry of Food, Agriculture and Consumer Protection and the Legacy for the Future Foundation. At regular intervals, the scientists produce recommendations of high-quality 'EcoTopTen products' – all of which offer good

value for money and top environmental performance. A series of product recommendations will be published on www.ecotopten.de at regular intervals until the end of 2006.

Table 1 gives a review of ten product fields and associated product groups analysed within EcoTopTen. Taken together, the products in these fields currently generate 64 percent of Germany's total carbon dioxide emissions and 58 percent of its energy consumption, and account for about two-thirds of all consumer expenditure.

Table 1: Analysed product fields and associated product groups within EcoTopTen

| EcoTopTen Product fields | Associated product groups |
|--------------------------------------|---|
| Building & Housing | Condensing boilers (gas) Wood-pellet heating systems Energy-saving lamps 3-litre new prefabricated construction |
| Mobility | High-mileage car fleet. Best-in-class schemes for: Small cars / Mid-range cars / Family cars / Mini-vans Car sharing Bicycles (safe and low-maintenance) |
| Eating & drinking | Full range of organic groceries with umbrella label |
| Refrigerating, Cooking, Dish-washing | Refrigerators & Freezers Gas & Electrical cookers Dishwashers |
| Clothing | Full range of textiles (organic & fair-trade standards) |
| Laundry washing & drying | 5-kg washing machines Tumble driers (heat pump driers, gas driers) |
| Information & Communication | Virtual answering machines PCs / notebooks Flat panel displays Printers |
| TV & Co. | Flat panel TV sets with PC connection |
| Electricity | Certified green electricity |
| Investment | Sustainable funds Old-age-provision products |

2 What is new about EcoTopTen? The methodological approach

The EcoTopTen product ratings give equal weight to the criteria of low environmental impact and acceptable annual overall cost, while at the same time taking high quality into account. Integrating these three dimensions as well as systematically considering the annual follow-on costs – instead of comparing merely the purchase price – is an entirely novel approach.

The EcoTopTen criteria are, to the extent possible, based on existing criteria such as those of ecolabelling schemes - EcoTopTen is thus not a new label. There are minimum environmental criteria that

must be met for products to get an EcoTopTen listing, but there are also price ceilings that must not be exceeded. Where permitted by data availability, EcoTopTen also provides information on existing quality tests or social aspects.

2.1 Ecological approach of EcoTopTen

Depending on the product group, (German) consumers find a great number of different labels signaling good environmental performance – which means that on the other hand they also have the difficulty of choice. Consumers have to know and understand the meaning of each of these labels in order to make a good and above all sustainable choice. On the other hand there are product groups where consumers find no ecolabel at all, e.g. virtual

answering machines or investment funds. EcoTopTen wants to reduce the complexity for consumers by providing precise recommendations for sustainable products without the need for consumers to know every detail – comparable to an umbrella

brand name. Table 2 gives an impression on the variety of different ecolabelling schemes that form the basis of the environmental assessment of product groups in EcoTopTen.

Table 2: Product groups and underlying ecolabelling schemes for assessment in EcoTopTen

| EcoTopTen product groups | Underlying ecolabelling schemes |
|--|--|
| <ul style="list-style-type: none"> ▪ Condensing boilers (gas) ▪ Wood-pellet heating systems ▪ Energy-saving lamps ▪ 3-litre new prefabricated construction | <ul style="list-style-type: none"> ⇒ <i>German Blue Angel</i> ⇒ <i>German Blue Angel</i> ⇒ European energy efficiency label ⇒ German energy pass |
| <ul style="list-style-type: none"> ▪ High-mileage car fleet ▪ Car sharing ▪ Bicycles (safe and low-maintenance) | <ul style="list-style-type: none"> ⇒ Annual list of ecological cars by Verkehrsclub Deutschland (VCD) ⇒ <i>German Blue Angel</i> ⇒ --- |
| <ul style="list-style-type: none"> ▪ Full range of organic groceries with umbrella label | <ul style="list-style-type: none"> ⇒ “Bio-Siegel” (Organic food label), Transfair label |
| <ul style="list-style-type: none"> ▪ Refrigerators & Freezers ▪ Gas & Electrical cookers ▪ Dishwashers | <ul style="list-style-type: none"> ⇒ European energy efficiency label ⇒ European energy efficiency label (for electrical cookers only) ⇒ European energy efficiency label |
| <ul style="list-style-type: none"> ▪ Full range of textiles (organic & fair-trade standards) | <ul style="list-style-type: none"> ⇒ European flower, Öko-Tex 100/1000, Ecoproof, Toxproof, IVN Better / Best, Purewear, ... |
| <ul style="list-style-type: none"> ▪ Washing machines ▪ Tumble-driers (heat pump driers, gas driers) | <ul style="list-style-type: none"> ⇒ Energy Efficiency Label, European flower ⇒ Energy Efficiency Label (for electrical driers only) |
| <ul style="list-style-type: none"> ▪ Virtual answering machines ▪ PCs / notebooks ▪ Flat panel displays ▪ Printers | <ul style="list-style-type: none"> ⇒ --- ⇒ <i>German Blue Angel</i> ⇒ TCO '99 / TCO '03 ⇒ <i>German Blue Angel</i> |
| <ul style="list-style-type: none"> ▪ Flat panel TV sets with PC connection | <ul style="list-style-type: none"> ⇒ European flower |
| <ul style="list-style-type: none"> ▪ Certified green electricity | <ul style="list-style-type: none"> ⇒ German ok-power label / green electricity label |
| <ul style="list-style-type: none"> ▪ Sustainable funds ▪ Old-age-provision products | <ul style="list-style-type: none"> ⇒ Austrian Ecolabel for green funds ⇒ --- |

In its criteria, the German ecolabel ‘Blue Angel’ mostly goes beyond the European Energy Efficiency Label. For example, there are requirements in terms of materials used (e.g. excluding materials classified as carcinogenic), construction (e.g. being suitable for recycling), noise, and packaging of the product or manual and consumer information. Therefore, EcoTopTen primarily seeks to take the Blue Angel as basis for the environmental assessment. At the same time, this was quite a challenge in two terms: On the one hand, the possibility for awarding the Blue Angel exists for only five out of 22 EcoTopTen product groups. During the last few years, the Blue Angel was mainly withdrawn from

most of the large household appliances, like washing machines, freezers or ovens. For these product categories, EcoTopTen rather applies the European Energy Efficiency Label as minimum requirement for the environmental assessment – setting additional criteria if necessary, e.g. noise level or protection systems for damage by water concerning dishwashers. On the other hand, application for the Blue Angel is voluntarily. Therefore, it happens that manufacturers whose products fulfil the criteria do not apply for the ecolabel due to procedural, cost or other reasons. For example, looking at wood-pellet heating systems, the main market leaders did not apply for the Blue Angel. In

those cases, EcoTopTen could bridge a gap by recommending also those products to consumers that fulfil the ecological criteria without being awarded the Blue Angel.

2.2 Economic approach of EcoTopTen

“Green products are generally more expensive than conventional products” – this is still a common belief. However, this is not true when taking into account the overall life cycle costs by annualising the purchase price over the lifespan of the product and adding the annual costs for usage. On the other, you can't expect consumers to do these complex calculations every time before buying a new product. Therefore, EcoTopTen market surveys generally provide information on the purchase price as well as on the overall annual cost for each of the recommended products.

For example, EcoTopTen has supplied a market report on the most efficient fridges, fridge-freezers and freezers that recommends that consumers only go for models with A++ energy efficiency [3]. These are the ones that are best buys in terms of environmental and energy performance. What only few consumers know: the top models within the A class consume up to 45 per cent less electricity than the worst performers in the same category. This is why in 2004 the range was extended with a view to include sub-classes A+ and A++.

It certainly pays off to look at the energy consumption of fridges and freezers: they are constant consumers since they stay switched on all the time. Products in energy efficiency classes A or B, which use much more electricity than the ones of higher categories, can end up costing more in the long run. Their smaller purchase price can be outweighed by high annual electricity bills.

Table 3: Overall annual costs of an A-classified fridge compared to an A++-EcoTopTen fridge

| Model | Energy efficiency class | Volume (litre) fridge / icebox | Energy consumption (kWh/a) | Purchase price (Euro) | Overall annual cost (Euro / year) |
|------------------|-------------------------|--------------------------------|----------------------------|-----------------------|-----------------------------------|
| EcoTopTen-fridge | A++ | 121 / 19 | 131 kWh | 329,95 € | 49 € |
| Typical fridge | A | 121 / 19 | 230 kWh | 309,00 € | 66 € |

Table 3 shows how it works: Anyone who chooses a 120-litre fridge with a four-star freezer compartment and A++ energy efficiency class, as recommended by the EcoTopTen campaign, will for example pay around 330 Euro up front. The overall annual costs – including the costs of a year's electricity consumption – are of 49 Euro. A typical fridge of a similar size in energy efficiency class A is, for example, around 20 Euro cheaper to buy. But the annual costs for operation are 66 Euro, because it uses 230 kWh of electricity or around 100 kWh more than the EcoTopTen fridge. Hence, the EcoTopTen fridge will cost the consumer about 17 Euro less each year – even if it costs more up front.

The comparison of the overall annual costs shows that environmentally friendly products often perform better than typical products even if the purchase price is higher. Another example: Oeko-Institut has calculated the overall annual cost of lamps, including the annualized purchase price and the annual cost of electricity. With a typical service life of 6,000 to 15,000 hours and a daily lighting time of three hours, an 11-watt compact fluorescent lamp (CFL) costs the consumer 3.10 Euro a year. In contrast, the typical service life of a comparable 60-watt incandescent light bulb is approximately 1,000 hours. Due to the higher substitution rate and the

higher annual energy costs the overall costs add up to 12.40 Euros a year, although the initial cost of buying a CFL is higher, at about 15 Euros compared to 50 Cents for a conventional incandescent lamp.

Finally, there is the possibility for cross-examination of overall annual costs between several product groups (see table 4). The margin within a product group is usually due to the products' different size or configuration. For example, the detailed analysis shows that overall annual cost of chest freezers is lower than those of equal freezers. In general, EcoTopTen gives an impression on the allocation of consumers' budget and provides the possibility for eco-efficient prioritising – e.g. using compact fluorescent lamps or green electricity with little additional costs instead of spending much more money for buying a new freezer with little more efficiency compared to the old one.

Table 4: Range of overall annual costs (Euro/year) of several EcoTopTen-products

| | Lamps (CFL) | Fridge | Chest-freezer | Freezer | Fridge-freezer | Tumble drier | Dishwasher | Cars (small / mid-class / family) |
|---------------------|-------------|-----------|---------------|------------|----------------|--------------|-------------|-----------------------------------|
| Overall annual cost | 2 – 5 € | 50 – 80 € | 50 – 80 € | 50 – 100 € | 80 – 130 € | 90 – 100 € | 170 – 270 € | 4,500 – 7,500 € |

3 EcoTopTen in comparison to other programmes and initiatives

3.1 European Eco-design Directive for Energy using Products (EuP)

In line with the Integrated Product Policy (which promotes the principle that requirements on the environmental performance of products should address all environmental aspects during the complete lifecycle of the product), in August 2003 the Commission decided to propose an integrated framework for setting “eco-design” requirements for Energy using Products (including energy efficiency requirements). By adopting the proposal (Directive 2005/32/EC), the European Parliament and the Council have granted the Commission a mandate to regulate the environmental characteristics of energy-using products (except vehicles) through adopting implementing measures (daughter directives) laying down eco-design requirements for particular Energy using Products.

Directive 2005/32/EC [4] provides for the setting of eco-design requirements for energy-using products (EuP). First step in considering whether and which eco-design requirements should be set for a particular product is the elaboration of a preparatory study recommending ways to improve the environmental performance of the product. The preparatory studies shall provide the necessary information to prepare, in particular, the impact assessment and possible draft implementing measures.

Compared to the suggested procedure of the EuP preparatory studies, EcoTopTen offers a very similar approach. Both focus on similar product groups that are relevant with respect to environmental impacts respectively optimisation potentials, e.g. refrigerators, freezers, washing machines, tumble-driers, televisions, PCs, printers, boilers and lighting. Both take existing legislation and labelling into account as well as market trends, consumer expenditure data and consumer behaviour. Both apply methods like Life Cycle Analyses and Life Cycle Costs in order to identify and assess the improvement potential of energy using products. EcoTopTen as well as EuP include manufacturers’ views on the improvement potential of products and best available technologies.

Nevertheless, there are also some differences between EcoTopTen and EuP: First of all, EuP is a political process with a focus on implementing measures for the eco-design of products. EcoTopTen on the other hand is an information campaign with a survey of the best products already available on the market and a clear focus on consumers. This means that not only the annual total costs but also innovation goals for products are identified from the consumers’ point of view. In cooperation with the Institute for Socio-Ecological Research (ISOE) own consumer research is carried out for EcoTopTen. In different focus groups with respect to a specific product group, consumers are interviewed on use patterns, motivations for the purchase of products, purchase criteria including relevance of environmental criteria, information sources or the relevance of tests and labels.

In the following, the consumer research on bicycles is illustrated exemplarily. In opposition to eco-design requirements, EcoTopTen does not focus on the environmental friendliness of materials. This is due to the fact that regarding material flows; bicycles are most of all environmentally friendly when they are used instead of a car. Results from consumer research show that people would rather prefer to take their car due to bicycles being too often out of order - being particularly valid for the functionality of lights, brakes or tyres. Thereupon, EcoTopTen transmitted these restraints into innovation goals for bicycle manufacturers [5]. Bicycles that shall be recommended in EcoTopTen have to be safe as well as have a low effort for maintenance. Translated into components this means that such bicycles should, amongst others, be equipped with dynamo hubs, roller brakes or special tyres that protect against flat tyres. Oeko-Institut itself assembled a bicycle according to those criteria and presented it to the consumer research groups. The results, like feedback on design, costs and on the different technical components, will flow into further development of minimum criteria for EcoTopTen bicycles. This example demonstrates a new and outstanding approach for integration of consumers’ views into innovation goals and product requirements.

3.2 Japanese Top Runner Standard

Another well-known programme with similarities to EcoTopTen is the Japanese Top Runner Standard [6]. Due to oil crisis in the past, Japan already focused on measures concerning rational use of energy at an early stage. Amongst others, Top Runner Standard has come into existence in light of this situation. This system uses, as a base value, the value of the product with the highest energy consumption efficiency on the market at the time of the standard establishment process and sets standard values, also considering potential technological improvements, which are added as efficiency improvements. In cooperation with industry, the energy consumption efficiency of all products currently on the market is measured. Using the resulting data, the most up to date maximum efficiency value is determined. Target *years* are determined giving consideration to the degree of how society demands the equipment energy conservation and efficiency as well as to manufacturers' product development planning and capacity. Target *standard values* (Top Runner Standard values) are determined by evaluating potential technical development toward target years, as well as adding technical development to maximum efficiency values.

Compared to EcoTopTen, one can once again find some overlapping between relevant product groups, e.g. vehicles, refrigerators, freezers, cookers, televisions, computers, printers or lighting. Furthermore, both initiatives follow the same approach of identifying the most efficient products on the market and setting innovation goals for future products. The major difference between EcoTopTen and Top Runner is the implementation of measures. EcoTopTen is primarily a consumer information campaign and therefore the criteria and innovation goals are not binding for manufacturers and their whole range of products. Top Runner, on the other hand, is prescribed under the Japanese "Law Concerning the Rational Use of Energy" and therefore an obligation for manufacturers to make efforts in improving the energy efficiency of their products.

Both initiatives not only address manufacturers but also consumers. For this purpose, Oeko-Institut's researchers regularly publish recommendations on www.ecotopten.de supported by press releases that are picked up by many national media. The advantage of Top Runner is that the Japanese Energy Conservation Law has established a display system for Top Runner target products so that buyers can obtain information concerning, for example, the energy efficiency directly at the time of purchase. To promote the popularization of highly efficient products that have achieved Top Runner Standard values, a voluntary labelling system was established in addition which can be displayed in product cata-

logues as well as on packaging or the products themselves.

Finally, the Top Runner System also includes retailers in order to further accelerate the popularization of efficient products, because these are places where manufacturers and consumers intersect. Under the so called "Energy Efficient Product Retailer Assessment System", individual large-scale home electronic retail outlets and stores are recruited to be identified as outlets that actively provide information and carry out sales promotions and are identified as "Outlets that Excel at Promoting Energy-Efficient Products." Including rankings, the results are publicized through newspapers, magazines, bulletins of consumer groups and non-profit organizations as well as brochures of local public agencies to raise consumer awareness. A logo is established to provide "Outlets that Excel at Promoting Energy-Efficient Products" to be used for this purpose.

4 Conclusion

In the previous chapters you find a presentation of the German consumer information campaign "EcoTopTen" on sustainable products and exemplarily explanation of the methodological approach, as well as a synopsis of essential similarities and differences of EcoTopTen compared to the European EuP-Directive and the Japanese Top Runner Standard. In conclusion, EcoTopTen provides a reasonable complement to the two political initiatives. With the consumer information campaign EcoTopTen, Oeko-Institut already fulfils the recommendation of the EuP-Directive which says: "In order to maximise the environmental benefits from improved design it may be necessary to inform consumers about the environmental characteristics and performance of energy using products and to advise them about how to use products in a manner which is environmentally friendly."

Especially, the consistent pointing out of annual total costs in EcoTopTen as well as the integration of environmental, economic, social and quality aspects is quite a new approach and should be applied to other initiatives for sustainable consumption. An advantage of the EuP-Directive as well as of the Japanese Top Runner Standard compared to EcoTopTen is the binding character for manufacturers. Finally, a great advantage of the Top Runner Standard is the inclusion of retailers to further accelerate the popularization of efficient products because they have an influence on their assortment of goods presenting efficient or non-efficient products to consumers. Being one of the important players in life cycle thinking, often unattended in former times, this approach should become standard practice also for other initiatives for sustainable consumption.

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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

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.

Contact

Freiburg Head Office:

P.O. Box 50 02 40
D-79028 Freiburg
Phone +49 (0)761-4 52 95-0
Fax +49 (0)761-4 52 95 88

Darmstadt Office:

Rheinstrasse 95
D-64295 Darmstadt
Phone +49 (0)6151-81 91-0
Fax +49 (0)6151-81 91 33

Berlin Office:

Novalisstrasse 10
D-10115 Berlin
Phone +49 (0)30-280 486 80
Fax +49 (0)30-280 486 88
www.oeko.de

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

Contact

Prof. Dr. jur. Gerhard Roller
University of Applied Sciences
Berlinstrasse 109
D-55411 Bingen/Germany
Phone +49(0)6721-409-363
Fax +49(0)6721-409-110
roller@fh-bingen.de

www.fh-bingen.de

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 conservation
- Water and energy management
- Electronic public participation
- Economic opportunities deriving from environmental legislation
- Self responsibility

sofia is working on behalf of the

- VolkswagenStiftung
- German Federal Ministry of Education and Research
- Hessian Ministry of Economics
- 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

Contact

Darmstadt Office

Prof. Dr. Martin Führ – sofia
University of Applied Sciences
Haardtring 100
D-64295 Darmstadt/Germany
Phone +49-(0)6151-16-8734/35/31
Fax +49-(0)6151-16-8925
fuehr@sofia-darmstadt.de
www.fh-darmstadt.de

Göttingen Office

Prof. Dr. Kilian Bizer – sofia
University of Göttingen
Platz der Göttinger Sieben 3
D-37073 Göttingen/Germany
Phone +49-(0)551-39-4602
Fax +49-(0)551-39-19558
bizer@sofia-darmstadt.de

www.sofia-research.com

elni

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 researchers, 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 Industrial Plants and the Influence of EC Directives, Gebers/Robensin (eds.), P. Lang, 1993.
- Civil Liability for Waste, v. Wilimowsky/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.