SRU

German Advisory Council on the Environment

Environment and Road Transport

High Mobility – Environmentally Sound Traffic

Special Report
Key Findings

August 2005

Contents

Key Findings of the Special Report

1 Unacceptable Health Risks and Environmental Damage from Road Transport

1*. Despite advances in many areas, particularly as a result of technological measures to reduce air pollution, environmental pressures caused by transport remain very high. The harm to human health and the environmental damage caused by road transport remain unacceptable. Unless preventive policy measures are implemented, the huge growth in freight transport can be expected to continue along with moderate growth in passenger transport. The problems involved encompass:

- *Road safety:* Although road safety in Germany has significantly improved and the number of people killed on the roads has almost halved between 1991 and 2003, road travel continues to be one of the most dangerous activities in everyday life. In 2004, some 5,844 people were killed on Germany's roads and around 440,000 were injured. Particular focus is placed on children and the elderly, the weakest of road users. In 2000, Germany suffered 350 road deaths per 100,000 inhabitants under fifteen years of age – the largest number of road traffic victims in this age group anywhere in the EU. Young people who have recently passed their driving test are at above-average risk as are young cyclists.
- *Air pollution*: Despite the drop in road transport-related air pollution from lead, particulates, nitrogen oxides and ozone emissions, such pollution still poses a significant risk to human health. Particular mention is made of the risk of lung cancer from diesel soot particles and chronic respiratory disease caused by the combined effects of different air pollutants. The greatest concentrations of air pollution are measured in heavily populated inner-city areas where traffic volumes are high and correspondingly large numbers of people are exposed to the associated health risks.
- *Traffic noise:* At 60 per cent, the number of people who say they suffer from the effects of traffic noise is extremely high. Some 16.6 per cent of people are exposed to noise levels exceeding 55 dB(A) at night and 15.6 per cent to more than 65 dB(A) by day. These are the levels at which the risk of cardiac and respiratory disease increases. It is particularly important for people to be protected from the effects of noise at night. Traffic noise can cause sleep disturbance which in turn can affect people's day-time performance and sense of wellbeing. Acute and chronic noise can affect human health in the form of heart and respiratory disease, and has an adverse effect on the endocrine system.
- *Quality of life*: Traffic and car-centric urban planning affect both the quality of life of those who live nearby and the mobility options for other road users. This is particularly the case for those with low mobility and who move about within a relatively small radius – children and the elderly, and people with limited physical and mental capacities.
- *Nature and the landscape*: Land use and landscape fragmentation caused by road construction and the associated destruction of habitats and its impact on migratory and distribution opportunities for flora and fauna are currently the main causes of ongoing – in many cases irreversible – biodiversity loss. That same impact limits use of the landscape for recreation purposes. Road transport continues to contribute significantly to acidification and eutrophication of ecosystems and to ground-level ozone. Special protection measures are needed in particularly sensitive areas like the Alpine region.
- *The climate*: CO_2 output from road transport has risen five-fold since 1960, while climate-

damaging CO_2 emissions from the transport sector have risen to one-fifth of total emissions in the past 40 years. While technology has succeeded in reducing specific CO_2/km output, this has been counteracted by a faster rise in total mileage. Thus, when it comes to climate protection, road transport will remain an extremely serious problem area both at national and European level.

2 Placing Environmentally Sound Mobility Above Road Transport

2*. Mobility, understood to be the sum of the ways in which to meet needs by changing locality, must be seen as a separate issue to that of transport. It is, in fact, possible to achieve greater mobility for all with less transport. The main focus of transport and mobility policy, therefore, should be individual mobility rather than transport per se. Mobility is, however, only one value among many and there is no real reason why it should be placed above any other.

Future mobility policy should no longer bow to the assumed normative power of transport projections under which increased demand for transport is met by building yet more roads. Up to now, the associated risks to human health and the environment have been seen as unavoidable side-effects that merely need to be alleviated. Rather than meeting mobility needs primarily through the promotion of motorised transport, mobility policy should attempt to promote less risk-laden and less environmentally damaging means of mobility for all groups of society. This includes, within reason, slowing down lifestyles and avoiding journeys. It does not, of course, mean doing away with motorised passenger transport altogether but rather integrating it into holistic, environmentally sound mobility policy.

The setting of binding, well-defined, problem-focused environmental targets for road transport is indispensable to environmentally sound mobility policy. This means making existing targets more ambitious and better defined. The German Advisory Council on the Environment recommends the following in respect of the various problems involved:

- *Road safety*: The German government should set ambitious national road safety targets as part of its road safety strategy as soon as possible. In particular, these should be based on the ambitious policies adopted by pioneer states like Sweden, Switzerland and the Netherlands. The Council believes that halving by 2015 the number of deaths and serious injuries on the roads compared with those in 2005 would appear an appropriate interim target.
- *Air pollution*: To protect people's health, the EU aims to set a 20 $\mu g/m^3$ emissions target for particulates (PM_{10}) for 2010 and has prescribed an annual average of 40 $\mu g/m^3$ for NO_2 for the same year. If it is to comply with these air quality targets, Germany must significantly reduce its pollution levels. In efforts to protect ecosystems, the EU Directive on air quality and emissions ceilings requires that NO_x emissions be reduced by a further 32 per cent (base year 2000) by 2010. The Council recommends defining the specific contribution to be made by the transport sector in reaching the required pollution reductions.
- *Traffic noise*: Segmented assessment of different noise sources must be abandoned in favour of assessing noise overall. In the medium term, an abatement level of 62 dB(A) should be set for outdoor noise during the day, with 55 dB(A) being set as a preventive target. With regard to outdoor noise at night, it would appear appropriate to set a short-term target of 55 dB(A), a medium term target of 52 dB(A) and a longer term target of 45 dB(A).

- *Quality of life*: In everyday life, there is a need for undisturbed or at least low-noise areas that are not merely isolated enclaves in an urban environment dominated by road traffic. When it comes to quality of life, it is especially important to enhance mobility options for those that have up to now been disadvantaged (e.g. children, the elderly and disabled people). This overall goal must result in the development at both regional and local level of clearly defined targets to serve each of these groups.
- *Nature and the landscape*: The existing target and protection system of nature conservation and landscape protection policy must be taken into account in transport policy decisions. Besides the need to define nature conservation goals more clearly in spatial terms, such goals must also be given greater consideration in the planning process. In particular, top priority must be given to as yet unfragmented areas and habitat corridors and to protecting them from further fragmentation. With regard to expanding the area of land developed for housing and roads, the sustainable development strategy target of 30 ha/d by 2020 must be implemented in a forceful way; zero growth in both areas being the ultimate aim.
- *The climate*: Greenhouse gas emissions in Germany are to be reduced by 40 per cent by 2020 compared with 1990; an 80 per cent reduction is required by 2050 compared with 1990. Using the National Allocation Plan, a long-term strategy must be developed to distribute CO_2 emission reductions across differing sectors, with firm reduction targets for the different transport subsectors. The abatement costs incurred by the various sectors or transport subsectors must be taken into account.

3 New Ways of Assessing Transport Policy Strategies

3*. The strategies that make up 'new' transport policy – traffic reduction and abatement, a switch in the modes of transport used and technological optimisation – each form an indispensable component of environmentally sound transport and mobility policy. In the debate surrounding these strategies, it is important to avoid confusing the means with the end: the focus of action is not on the strategies themselves, but on achieving their environment quality targets. Given that they all have their individual strengths and weaknesses, and contrary to popular assumptions, the three strategies are not ranked in any particular order:

- *Traffic reduction and abatement*: In principle, it would appear possible to decouple transport from economic growth without coming into conflict with the growth imperatives of the modern, market-driven industry and service economy.
- *Switching modes of transport*: Switching to more environmentally sound modes of transport can help reduce the burden on the environment in a number of ways. Great reduction potential lies in public transport systems serving conurbations and in strategic corridors. Regional development planning can also contribute in this regard.
- *Technological advancement*: In terms of climate protection and pollution control, improved vehicle technology still offers huge reduction potential that is feasible in economic terms and politically acceptable. A technology-based strategy can also serve as a key competition factor for the European car industry. However, when it comes to noise abatement and particularly to nature conservation, the impact of improved vehicle technology clearly has its limitations.

4 Tapping Vehicle Technology Potential

4*. Improved vehicle technology has already effected significant improvements regarding the environmental problems caused by road transport. Its effect could have been significantly greater were it not for the ongoing rise in engine power and vehicle weight. Given that acceptable levels of noise and harmful emissions are continually exceeded, existing technological potential must be systematically exploited and further developed:

- *Traffic noise*: Prevailing noise thresholds for engines and tyres must quickly be adapted to match available technology and be supplemented by longer term, phased limits to promote technological advancement. The existing measuring system must be redesigned to allow more realistic representation of vehicle noise. Also, low-noise road surfaces must be further developed and laid in noise-sensitive areas.
- *Air pollution*: To reduce air pollution – especially nitrogen oxides and particles – exhaust gas standards for diesel passenger cars and light commercial vehicles (EURO 5), and those for heavy commercial vehicles (EURO VI), must be further developed using ambitious targets. In this way, existing reduction potential can be tapped and further incentives provided for the development of emissions reduction technology. Measuring systems that allow realistic assessment of emissions compliance in all operating conditions are also needed. Financial incentives or suitable regulatory instruments must be created to allow timely market entry of low-emission vehicles. The German government's proposal to reduce vehicle tax in an attempt to promote installation of particle filters in passenger cars is an important step in this direction.
- *Climate*: Although alternative fuels like biomass and hydrogen are expected to offer significant potential, at least in the longer term, the German Advisory Council on the Environment considers that priority should be given to greater use of technological potential for reducing CO_2 from vehicles with conventional engines. As an interim measure, average specific CO_2 emissions from newly registered passenger cars could be reduced by introducing an emissions trading scheme that requires carmakers to cut CO_2 emissions to 100 g CO_2/km by 2012 and is linked to the emissions trading scheme for industrial facilities. Additional, longer-term targets could be set to achieve even greater reductions. To foster demand-side support for this system, vehicle taxation should be redesigned to focus on CO_2 emissions, be progressively structured and payable for several years in advance when registering a new vehicle. Further incremental increases in fuel prices are, of course, a vital component of ecotax reforms to prevent any increase in a vehicle's energy efficiency providing an undesired incentive to improve engine performance.

5 Strategic Reforms in Regional and Transport Planning

5*. Radius expansion, settlement dispersion and demixing due to ongoing suburbanisation all result in increased traffic. This trend must be combated through determined implementation of traffic-reducing settlement structures that build on the regional planning concepts of decentralised concentration with connecting axes and central places. These concepts should not be compromised by local planning measures. Further, in their land-use planning activities, local

authorities should make greater efforts to create traffic-reducing structures, making use of available instruments for urban densification and mixed use to do so.

6*. In its present form, road planning policy – whether at local or regional level – neither serves nor secures a regional planning approach towards traffic reduction. To make road planning more effective, the German Advisory Council on the Environment recommends that the system be changed as follows:

- *Regional and transport planning*: Germany's road planning policy is no longer suited to what is largely a well-established national road transport network and must thus undergo fundamental reform. It should be made more transparent and participative, and take a more strategic and environmentally compatible approach. National road planning policy should be more than a matter of choosing from a 'wish list' submitted by the various Länder (federal states). Instead, it should be made subject to the strategic aims of German regional planning policy and be structured to find the best solutions to both environmental and transport shortfalls. National road planning policy should be restricted to connections of key national and international importance and leave responsibility for regional routes to the Länder.
- *Options for market-focused expansion of the roads infrastructure*: As a component of strategic, environmentally sound national road planning policy, a well-defined road toll system could fund expansion, new construction and operation of long-distance connections to ensure that building of long-distance roads focuses more on needs than on short-term political opportunity. When building new motorways, a privatisation model of this kind should be assessed to see if it offers a viable alternative to today's state-financed system. In the process, the deficits of the existing operator model could be largely eliminated by using the present value and flexible project lifecycle model outlined in the main report.
- *Trans-European networks*: As with national road planning policy, in the creation of transeuropean networks, expansion and investment planning should place greater focus on the centralised, strategic goals of European regional planning and environmentally sound transport management, be clearly separated from national road planning policy and be redimensioned along certain strategic axes.
- *Inner-city transport planning*: Statutory minimum requirements for formalised and binding municipal transport plans should ensure that local authorities in larger conurbations use models for integrated targets and measures to adequately address their local transport problems, and that they actually apply them in their planning activities.

6 Reducing and Managing Traffic

7*. Far-ranging transport management measures can reduce environmental pressures and enhance road safety. The German Advisory Council on the Environment recommends the following:

- *Regulatory instruments*: Transport management instruments must be further developed. To combat critical pollution levels and implement reduction requirements as prescribed by EU law, regulatory instruments in the form of national legislation along with appropriate road signage and marking rules set out in road traffic regulations are needed so that local authorities can restrict traffic in busy streets to low-emission vehicles and those fitted with particle filters. Until such time as the EU prescribes the use of modern exhaust gas

cleaning technologies (especially particle filters), such traffic restrictions are necessary in order to implement the ambitious particle and NO_x thresholds laid down in EU air quality legislation. To reduce high noise levels, local authorities must be placed under obligation to set area-wide noise abatement targets for roads in populated areas where traffic noise exceeds statutory thresholds.

- *Speed limits*: To enhance road safety and reduce environmental pressures, the recommended speed of 130 km/h on German motorways should be turned into a binding speed limit and reduced in the medium term to 120 km/h. A speed limit of 30 km/h should be introduced in towns and villages (with the exception of transit roads). To improve implementation of existing and new speed restrictions, appropriate increases in monitoring intensity and stricter sanctions, including in the form of temporary driving bans, are desirable.
- *Ecotax*: Ecotax levied on petrol and diesel fuels must slowly but surely rise above and beyond the existing increments in such a way that all those involved know what to expect. To prevent drivers circumventing ecotax charged on fuels (fuel tourism in border regions), the German government should lobby at EU level for taxation on fuels to be harmonised at a high rate.
- *Road tolls*: These are an effective instrument with which to tax the flow of transport. While the road toll for commercial vehicles introduced on 2 January 2005 is to be welcomed in principle, its implementation could be improved. Thus, the German government should call at EU level for the commercial vehicle toll to be allowed to include external environmental costs as part of the amendment to the Euro Toll Directive. For acceptance and data privacy reasons, and to prevent transport switching to the subordinate road network, road tolls for passenger cars should initially be used to relieve only built-up areas where traffic volume is high.
- *Telematics*: In the development and use of telematic systems for the transport sector, attaining environmental targets is still seen for the most part as a side-effect. The greatest potential for reducing the environmental burden lies in the use of intelligent transport systems to support other measures, particularly economic ones, whose control effect can be boosted by telematics. Also, the efficiency potential of telematic systems should receive greater consideration in local and regional transport planning with the aim of preventing new road construction or expansion of existing roads. It is recommended that public planning agencies promote a network of players from industry, research and local authorities so that the development and use of smart transport systems be given priority in those areas where they are of benefit not just in terms of improved use of the roads infrastructure but in reducing environmental pressures.

7 Correcting Traffic-Inducing Incentives in Other Policy Areas

8*. One important step towards achieving the sustainability strategy goal of decoupling transport from economic growth is to correct undesired traffic-inducing incentives in areas outside transport policy – particularly in fiscal, economic, agricultural and regional planning policy. The German government has already introduced welcome reforms, partly for reasons of budget consolidation. The German Advisory Council on the Environment thus recommends:

- *Transport impact assessments*: The German government should systematically use trans-

port impact assessments to assess planned legislation and national programmes and integrate them into the implementation process for Strategic Environmental Assessment (SEA) legislation. A model is provided by the European Commission's proposal to expand the scope of the impact assessments conducted on its policy initiatives to include impacts on land use and transport.

- *Lump sum tax allowances for commuters and home-owners*: The German Advisory Council on the Environment believes these allowances are in urgent need of review, not least because of their traffic-inducing effects. The commuter allowance should, as part of a phased process, become a distance-independent allowance; the home owners' allowance should be abolished in its entirety.
- *Social policy and commercial transport*: In commercial transport, frequent non-compliance with social policy provisions – particularly those regarding time at the wheel and rest periods – makes for savings in transport costs of up to 30 per cent. More stringent monitoring and stricter penalties should be put in place to prevent an unfair competitive advantage from being gained compared with rail freight transport and a rise in non-compliance inducing increased road freight demand.
- *Traffic abatement through development planning*: The trend towards dispersed housing developments and increased demixing significantly contributes to traffic volume and must be combated. Supported by withdrawal of traffic-inducing fiscal incentives, the regional planning concepts of decentralised concentration with connecting axes and central places must be used in a more determined way. In order to do so, it will be necessary to tighten the links between regional and urban planning on the one hand and transport planning on the other.
- *European agricultural policy*: The increase in traffic resulting from European agricultural policy reform and its implementation at national level must be systematically monitored and balanced. The potential for traffic reduction offered by the second pillar of EU agricultural policy (promotion of rural development) must be tapped. Key opportunities include strengthening regional marketing, regional processing of agricultural products and integrated rural development programmes.
- *European structural policy*: In their current form, regional funding programmes under EU structural policy will tend to increase rather than decrease growth in the transport sector. The new 2007 to 2013 programme phase should be used to promote public investment in economic and regional structures that serve traffic abatement.
- *Promoting regional enterprise*: Those elements of regional enterprise promotion that stimulate supra-regional business only, and thus encourage traffic, should be reassessed and restructured with an eye to reducing the environmental costs of transport.
- *Environmental audits*: The EMAS II Regulation (Eco-Management and Audit Scheme) should serve to encourage greater, systematic consideration of transport issues.

8 Conclusions

9*. Despite the huge potential for technological innovation, unless road transport is curbed it will not be possible to bring the associated environmental pressures and risks to human health down to acceptable levels. Thus, the main areas of focus in future transport policy should be the development of a technological innovation strategy for quieter, cleaner and more energy-efficient vehicles along with measures to influence the growth factors in the transport sector. In transport, regional and economic policy, the underlying principle should be to maintain a high level of mobility with less transport.

The recommended package of measures, which combines improved vehicle technology, road planning and transport management with proposals for restructured planning policy, correction of existing regulatory instruments and use of economic instruments, will make for motorised road transport that is far more environmentally compatible. Additionally, transport policy that focuses on environmental innovation can serve as a key competition factor for the European car industry.

Appendix

- **Charter Establishing an Advisory Council on the Environment**
- **Publications**

Ministry of the Environment, Nature Conservation and Nuclear Safety

Charter Establishing an Advisory Council on the Environment at the Ministry of the Environment, Nature Conservation and Nuclear Safety

1 March 2005

Article 1

The Advisory Council on the Environment has been established to periodically assess the environmental situation and environmental conditions in the Federal Republic of Germany and to facilitate opinion formation in all government ministries, departments and offices that have jurisdiction over the environment, and in the general public.

Article 2

(1) The Advisory Council on the Environment shall comprise seven members who have special scientific knowledge and experience with respect to environmental protection.

(2) The members of the Advisory Council on the Environment shall not be members of the government, a legislative body of the government or the civil service of the Federal Government, state governments or of any another public entity, universities and scientific institutes excepted. Further, they shall not represent any trade association, or employers' or employees' association, nor shall they be in the permanent employ of or party to any non-gratuitous contract or agreement with any such association, nor shall they have done so in the 12 months prior to their appointment to the Advisory Council on the Environment.

Article 3

The task with which the Advisory Council on the Environment is charged shall be to describe the current environmental situation and environmental trends, and to point out environmentally related problems and suggest possible ways and means of preventing or correcting them.

Article 4

The Advisory Council on the Environment is charged exclusively with the mission stated in this charter and may determine its activities independently.

Article 5

The Advisory Council on the Environment shall provide the federal ministries whose area of competence is involved, or their representatives, the opportunity to comment on important issues that emerge as a result of the Council's performing its task, and to do so before the Council publishes it reports on these issues.

Article 6

The Advisory Council on the Environment may arrange hearings for federal offices and Länder offices concerning particular issues, as well as invite the opinions of non-governmentally affiliated experts, particularly those who represent business and environmental associations.

Article 7

(1) The Advisory Council on the Environment shall draw up a report every four years, to be submitted to the Federal Government in May. The report is to be published by the Council.

(2) The Advisory Council on the Environment may make additional reports or statements on particular issues. The Federal Ministry of the Environment, Nature Conservation and Nuclear Safety may commission the Council to make further reports and statements. The Council is to

submit the reports and statements mentioned in clauses (1) and (2) of this article to the Federal Ministry of the Environment, Nature Conservation and Nuclear Safety.

Article 8

(1) Upon approval by the Federal Cabinet, the members of the Advisory Council on the Environment shall be appointed by the Federal Ministry of the Environment, Nature Conservation and Nuclear Safety for the period of four years. Equal participation of women and men shall be aimed for as provided for in the law governing appointments to federal bodies (the Bundesgremienbesetzungsgesetz). Reappointment shall be possible.

(2) The members of the Council may give written notice to resign from the Council to the Federal Ministry of the Environment, Nature Conservation and Nuclear Safety at any time.

(3) Should a member of the Council resign before serving the full four-year period, a new member shall be appointed for the remaining period. Reappointment shall be possible.

Article 9

(1) The Advisory Council on the Environment shall elect, by secret ballot, a chairperson who shall serve for a period of four years. Re-election shall be possible.

(2) The Advisory Council on the Environment shall set its own agenda, which shall be subject to approval by the Federal Minister of the Environment, Nature Conservation and Nuclear Safety.

(3) Should a minority of the members of the Council be of a different opinion from the majority of the members when preparing a report, they are to be given an opportunity to express this opinion in the report.

Article 10

The Advisory Council on the Environment shall be provided with a secretariat to assist it in the performance of its work.

Article 11

The members of the Advisory Council on the Environment and its secretariat are sworn to secrecy as concerns the Council's advisory activities and any advisory documents that it classifies as confidential, and as concerns any information given to the Council that is classified as confidential.

Article 12

(1) The members of the Advisory Council on the Environment are to be paid a lump-sum compensation and to be reimbursed for their travel expenses. The amount of compensation and reimbursement shall be determined by the Federal Ministry of the Environment, Nature Conservation and Nuclear Safety, with the consent of the Federal Ministry of the Interior and the Federal Minister of Finances.

(2) The financial funding for the Advisory Council on the Environment shall be provided by the Federal Government.

Article 13

To accommodate the new date of submission to the Federal Government under Article 7 (1), the Federal Ministry of the Environment, Nature Conservation and Nuclear Safety may extend the appointments of the Council members in office when this Charter enters into force to 30 June 2008 without requiring the approval of the Federal Cabinet.

Article 14

The Charter Establishing an Advisory Council on the Environment at the Federal Ministry of the Environment, Nature Conservation and Nuclear Safety (GMBl. 1990, no. 32, p. 831), issued on 10 August 1990, is superseded by this charter.

Bonn, 1 March 2005

G I 1 – 46010/2

The Federal Minister of the Environment, Nature Conservation and Nuclear Safety

Jürgen Trittin

PUBLICATIONS

Reports and statements prepared by the German Advisory Council on the Environment

Environmental Reports and Special Reports published **from 2004 onwards** can be ordered from bookshops or directly from Nomos-Verlagsgesellschaft Baden-Baden, Postfach 10 03 10, 76484 Baden-Baden, Germany (www.nomos.de).

Bundestag publications (Bundestagsdrucksachen) are available from Bundesanzeiger Verlagsgesellschaft mbH, Postfach 100534, 50445 Köln, Germany (www.bundesanzeiger.de).

Most publications from 1998 onwards are available for download in Adobe PDF format on the SRU website (www.umweltrat.de).

*) = a summary is available in english,

**) = a summary is available in French

- **Umweltgutachten 1978 *) **)**
  Stuttgart: Kohlhammer, 1978, 638 S., Plast.
  vergriffen
  zugleich Bundestags-Drucksache 8/1938
  Environmental Report 1978 *) **)
  Stuttgart, Mainz: W. Kohlhammer, 1978,
  638 pp., out of print
  also published as parliamentary paper 8/1938
- **Umweltprobleme der Nordsee *) **)**
  Sondergutachten
  Stuttgart: Kohlhammer, 1980, 508 S., Plast.
  vergriffen
  zugleich Bundestags-Drucksache 9/692
  Environmental Problems of the North Sea *) **)
  Special Report
  Stuttgart, Mainz: W. Kohlhammer, 1980,
  508 pp., out of print
  also published as parliamentary paper 9/692
- **Energie und Umwelt *)**
  Sondergutachten
  Stuttgart: Kohlhammer, 1981, 190 S., Plast.,
  zugleich Bundestags-Drucksache 9/872
  Energy and Environment *)
  Special Report
  Stuttgart: Kohlhammer, 1981, 190 pp.
  also published as parliamentary paper 9/872
- **Waldschäden und Luftverunreinigungen *) **)**
  Sondergutachten
  Stuttgart: Kohlhammer, 1983, 172 S., Plast.,
  zugleich Bundestags-Drucksache 10/113
  Forest Damage and Air Pollution *) **)
  Special Report
  Stuttgart: Kohlhammer, 1983, 172 pp., also
  published as parliamentary paper 10/113
- **Umweltprobleme der Landwirtschaft *) **)**
  Sondergutachten
  Stuttgart: Kohlhammer, 1985, 423 S., Plast.,
  vergriffen
  zugleich Bundestags-Drucksache 10/3613
  Environmental Problems of Agriculture *) **)
  Special Report
  Stuttgart: Kohlhammer, 1985, 423 pp.
  out of print
  also published as parliamentary paper 10/3613
- **Luftverunreinigungen in Innenräumen *)**
  Sondergutachten
  Stuttgart: Kohlhammer, 1987, 112 S., Plast.,
  zugleich Bundestags-Drucksache 11/613
  Indoor Air Pollution *)
  Special Report
  Stuttgart: Kohlhammer, 1987, 112 pp.,
  published also as parliamentary paper 11/613
- **Umweltgutachten 1987 *)**
  Stuttgart: Kohlhammer, 1988, 674 S., Plast.,
  zugleich Bundestags-Drucksache 11/1568
  Environmental Report 1987 *)
  Stuttgart: Kohlhammer, 1987, 674 pp.,
  also published as parliamentary paper 11/1568
- **Altlasten *)**
  Sondergutachten
  Stuttgart: Metzler-Poeschel, 1990, 303 S.,
  zugleich Bundestags-Drucksache 11/6191
  Abandoned Hazardous Sites *)
  Special Report
  Stuttgart: Metzler-Poeschel, 1990, 303 pp.

also published as parliamentary paper 11/6191

- **Abfallwirtschaft *)**
  Sondergutachten
  Stuttgart: Metzler-Poeschel, 1991, 720 S., kart., zugleich Bundestags-Drucksache 11/8493
  Waste Management *)
  Special Report
  Stuttgart: Metzler-Poeschel, 1991, 720 pp. also published as parliamentary paper 11/8493

- **Allgemeine ökologische Umweltbeobachtung *)**
  Sondergutachten
  Stuttgart: Metzler-Poeschel, 1991, 75 S., kart., zugleich Bundestags-Drucksache 11/8123
  General Ecological Environmental Monitoring *)
  Special Report
  Stuttgart: Metzler-Poeschel, 1991, 75 pp. published as parliamentary paper 11/8123

- **Umweltgutachten 1996 *)**
  Zur Umsetzung einer dauerhaft-umweltgerechten Entwicklung
  Stuttgart: Metzler-Poeschel, 1996, 468 S., mit 65-seitiger Beilage,
  zugleich Bundestags-Drucksache 13/4108
  Environmental Report 1996 *)
  On Implementing sustainable development
  Stuttgart: Metzler-Poeschel, 1996, 468 pp., 65 pp. enclosure, also published as parliamentary paper 13/4108

- **Umweltgutachten 1998 *)**
  Umweltschutz : Erreichtes sichern – neue Wege gehen
  Stuttgart: Metzler-Poeschel, 1998, 390 S., zugleich Bundestags-Drucksache 13/10195
  Environmental Report 1998 *)
  Environmental Protection: Securing Achievements – Breaking New Ground
  Stuttgart: Metzler-Poeschel, 1998, 390 pp., also published as parliamentary paper 13/10195

- **Flächendeckend wirksamer Grundwasserschutz *)**
  Ein Schritt zur dauerhaft umweltgerechten Entwicklung
  Sondergutachten
  Stuttgart: Metzler-Poeschel, 208 S., zugleich Bundestags-Drucksache 13/10196
  Countrywide Groundwater Protection *)
  Towards Sustainable Development
  Special Report
  Stuttgart: Metzler-Poeschel, 208 pp., also published as parliamentary paper 13/10196

- **Stellungnahme zur Reform der Aussenwirtschaftsförderung *)**
  November 1999, verfügbar auf http://www.umweltrat.de
  Council's Opinion on Greening Export Credit Guarantees *)
  November 1999, available at http://www.umweltrat.de

- **Umweltgutachten 2000 *)**
  Schritte ins nächste Jahrtausend
  Stuttgart: Metzler-Poeschel, 2000, 684 S., zugleich Bundestags-Drucksache 14/3363
  Environmental Report 2000 *)
  Steps into the New Millenium
  Stuttgart: Metzler-Poeschel, 2000, 684 pp., also published as parliamentary paper 14/3363

- **Umweltgutachten 2002 *)**
  Für eine neue Vorreiterrolle
  Stuttgart: Metzler-Poeschel, 2002, 549 S., zugleich Bundestags-Drucksache 14/8792
  Environmental Report 2002 *)
  Towards a New Leading Role
  Stuttgart: Metzler-Poeschel, 2000, 549 pp., also published as parliamentary paper 14/8792

- **Für eine Stärkung und Neuorientierung des Naturschutzes *)**
  Sondergutachten
  Stuttgart: Metzler-Poeschel, 2002, 211 S., zugleich Bundestags-Drucksache 14/9852
  Towards Strengthening and Reorienting Nature and Landscape Conservation *)
  Special Report
  Stuttgart: Metzler-Poeschel, 2002, 211 pp., also published as parliamentary paper 14/9852

- **Zur Wirtschaftsverträglichkeit der Reform der Europäischen Chemikalienpolitik *)**
  Stellungnahme
  Juli 2003, 36 Seiten
  http://www.umweltrat.de/03stellung/downlo03/stellung/Stellung_Reach_Juli2003.pdf

  On the economic impact of the planned reform of European Chemicals Policy" *)
  July 2003, 36 pages
  http://www.umweltrat.de/03stellung/downlo03/stellung/Stellung_Reach_Juli2003_eng.pdf

- **Zum Konzept der Europäischen Kommission für eine gemeinsame Meeresumweltschutzstrategie *)**
  Stellungnahme
  Februar 2003
  http://www.umweltrat.de/03stellung/downlo03/stellung/Stellung_Meeresumweltschutz_Feb2003.pdf

  On the European Commission's Concept for a European Strategy for the Protection and Conservation of the Marine Environment *)
  Statement, February 2003, 13 pages
  http://www.umweltrat.de/english/edownloa/statemen/Stellung_Protect_Marine_environment_eng.pdf

  Meeresumweltschutz für Nord- und Ostsee *)
  Sondergutachten
  Baden-Baden: Nomos, 2004, 480 S.
  ISBN 3-8329-0630-4
  zugleich Bundestagsdrucksache 15/2626

  Marine Environment Protection for the North and Baltic Seas *)
  Special Report
  Baden-Baden: Nomos, 2004, 480 pp.
  ISBN 3-8329-0943-5
  also published as parliamentary paper 15/2626

- **Umweltgutachten 2004 *)**
  Umweltpolitische Handlungsfähigkeit sichern
  Baden-Baden: Nomos, 2004, 670 S.
  ISBN 3-8329-0942-7
  zugleich Bundestagsdrucksache 15/3600

  Environmental Report 2004 *)
  Ensuring Environmental Protection Capacity
  Baden-Baden: Nomos, 2004, 670 pp.
  also published as parliamentary paper 15/3600
  http://www.umweltrat.de

- **Rechtsschutz für die Umwelt – die altruistische Verbandsklage ist unverzichtbar**
  Stellungnahme, Februar 2005
  http://www.umweltrat.de/03stellung/downlo03/stellung/Stellung_Verbandsklage_Februar2005.pdf

  Access to Justice in Environmental Matters: The Crucial Role of Legal Standing for Non-Governmental Organisations
  Statement, February 2005
  http://www.umweltrat.de/english/edownloa/statemen/Stellung_AccesstoJustice_February2005.pdf

- **Umwelt und Strassenverkehr**
  Hohe Mobilität – Umweltverträglicher Verkehr *)
  Sondergutachten
  Baden-Baden: Nomos, 2005, 348 S.
  ISBN 3-8329-1447-1
  zugleich Bundestagdrucksache 15/5900
  Environment and Road Transport
  High Mobility – Environmentally Sound Traffic *)
  Special Report,
  Baden-Baden: Nomos, 2005, 348 pp.,
  also publishes as parliamentary paper 15/5900)

- **Quellenbezogene Maßnahmen zur Minderung der verkehrsbedingten CO_2-Emissionen**
  Auszug aus dem Sondergutachten Umwelt und Straßenverkehr
  September 2005
  www.umweltrat.de

- **Reducing CO_2 Emissions from Cars**
  Section from the Special Report: Environment and Road Transport
  September 2005
  www.umweltrat.de

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