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Editor: Michael Romeril ● Assistant Editor: Derek Hall

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ENVIRONMENTAL NEWS

Investing in a cleaner future

A £140m boost for business investment in low carbon technologies, helping to tackle climate change, will be kick-started by extra resources for a cleaner environment set out by Environment Minister Michael Meacher.

£27m from the 2000 Spending Review will be used to accelerate business take-up of energy efficient technologies, especially by SMEs, mainly through the creation of a new Carbon Trust. The Trust will bring together under one roof – for the first time in Europe – a fully integrated programme of incentives worth in total over £140m annually, including:

- a major new low carbon research and development and demonstration programme to bring forward tomorrow's low carbon technologies;
- an expanded business energy auditing and advice service building on the Energy Efficiency Best Practice Programme; and
- a scheme of tax incentives for low carbon investments worth up to £100m next year.

Also helping to tackle climate change, a further £30m has been allocated under SR2000 to an Emissions Trading Incentive Scheme. This signals concrete backing for an early start for a UK scheme to enable companies to volunteer for challenging targets to cut emissions and deliver genuine environmental improvement.

Overall, Michael Meacher confirmed, England will benefit from an extra £650m funding from SR2000 for environment, countryside and other programmes over the coming three years.

The Chancellor's Spending Review 2000 announcement pointed to increased resources for investment in the environment including more sustainable agriculture, promoting emissions trading, energy efficiency, renewable energy and recycling. Resources for DETR's environment programmes will increase by £27m (2001-2), £101m (2002-3) and £175m (2003-4) over existing plans, providing an average 10 per cent real term increase annually to deliver:

- help to improve energy efficiency in business;
- a cut in fuel poverty for 600,000 vulnerable households; and
- direct support for local authorities to promote sustainable waste management and to raise levels of household waste recycled or composted to 17 per cent by 2004.

New resources will ensure major support for more sustainable waste management:

- £140m of new money to give central support to council recycling;
- a share of £1127m general increases in local authority provision;
- additional support through PFI.

The increased provision will help councils achieve their statutory targets which will double recycling in three years to 17 per cent and nearly triple it in five to 25 per cent. There will also be sup-

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port to develop markets for recycled materials – the new WRAP programme.

Fuel poverty in 600,000 vulnerable households will be cut over 2001-04 through the Home Energy Efficiency Scheme. About half of householders benefiting are likely to be aged 60 years or over. The SR2000 increase means that many more fuel poor households will get the heating and insulation packages they need to keep warm in winter, benefiting from lower bills.

Michael Meacher commented: 'Sustainable development is at the core of government policy and the Chancellor's SR2000 statement highlighted the need to invest in health, transport, the environment and in law and order to ensure a more productive economy and security for all.

'Climate change is one of the greatest environmental challenges we face. The new funds for the Carbon Trust will boost UK business investment in low carbon technology and play an integral part in the Climate Change Levy Package. It will help business to do its bit for the environment and to take advantage of new energy saving technologies.'

The Carbon Trust will be set up alongside the Climate Change levy – around April 2001 – and will be run by a company limited by guarantee. It has wide business support, designed with the help of the Advisory Committee on Business and the Environment, and will incorporate the successful Energy Efficiency Best Practice Programme. The trust will be set up to work seamlessly alongside other players in the energy efficiency field – principally the Energy Saving Trust.

The trust will serve as the focus for strategic and executive action to ensure business adapts successfully to the challenges presented by climate change. In particular, it will help business make a full contribution to the UK's Kyoto obligations and towards achieving our domestic CO_2 reduction goal by 2010. The trust will be business-led, and will maintain competitiveness and prepare business for future climate change targets. It will take over elements of the Energy Efficiency Best Practice Programme (EEBPP).

When Lord Marshall published his report on *Economic Instruments and the Business Use of Energy* in November 1998, he recommended a business-led initiative to design a 'dry run' domestic trading scheme for greenhouse gas emissions. Following on from this, the CBI and ACBE (Advisory Committee on Business and the Environment) set up the UK Emissions Trading Group (ETG) to take forward the design of a domestic trading scheme. The ETG was supported in the first instance by 25 major UK companies. It also received the backing of Ministers from DETR, DTI and HM Treasury. Support from the business sector has subsequently grown to include over 100 major companies and trade associations, with numerous academic and environmental NGOs also playing a leading role.

The incentive will enable companies to take on the risks associated with challenging emissions reduction targets, ensuring that the emissions trading scheme will deliver genuine environmental improvement. It will allow targets to be taken up from 2002, with trading getting underway during 2001.

Work on the development of emissions trading in the UK is already enabling the Government to play a leading role in the development of European and international emissions trading markets. And an early start for the UK scheme will enable UK businesses and the City to drive the market, ahead of plans for European and international schemes to enter into operation over the next few years.

New HEES

The New Home Energy Efficiency Scheme is designed to tackle the problem of fuel poverty – defined as households needing to spend more than 10 per cent of income to keep warm. In 1996, it was estimated there were at least 4.3 million such households, about half of whom were aged 60 years or more. The main causes are low income and poor heating and insulation. The previous scheme gave households one measure with a choice of loft, cavity wall or draught proofing – the latter being most widely fitted as most profitable for installers.

New HEES, in operation since June, offers complete insulation and heating packages and is targeted at the most vulnerable to cold-related ill health – over-60s, children, disabled. The scheme is aimed at the private rented sector, where fuel poverty is most severe, with access being dependent on receipt of one of the main income or disability benefits.

Waste

The Government believes the overall settlement will enable local authorities to meet the statutory targets for recycling in the waste strategy. Substantial extra resources – £1,127m over three years – will help local authorities to fund environmental, protective and cultural services, including waste management. It is for individual authorities to decide how to spend the extra money available to them. An additional £140m over three years is also being provided, specifically for local authority waste and recycling, and additional PFI credits have been ring-fenced for waste management.

The waste strategy announced a new programme (WRAP), jointly funded by DETR and DTI, to tackle barriers to increased recycling and promote new markets and end-uses for recycled materials.

Jennie Price, currently chief executive of the Construction Confederation, will be the first chief executive of the Waste and Resources Action Programme (WRAP), a new body to promote sustainable waste management, which will be launched in November.

Get 'Motorvated'

British business could save up to £650 million a year on fuel bills and contribute to a cleaner environment under a new scheme launched by Lord Macdonald, Minister for Transport.

Motorvate is designed to help businesses cut carbon dioxide emissions and make big savings on their fleets by running greener, cleaner cars and vans.

A 12 per cent cut in fuel consumption and CO_2 output over three years would save a firm with a 400-strong fleet up to £50,000 per year. If every fleet in the country joined Motorvate and met that target, CO_2 emissions would be cut by two million tonnes.

Companies and organisations which join Motorvate will be advised by energy, transport and environment experts on the benefits of buying greener vehicles, achieving better environmental performance and the best techniques for achieving fuel savings. Motorvate offers a telephone hotline and on-site help, and those participating will be awarded points on a five-star rating system according to their 'green credentials'.

Government is leading by example, with the Department of Social Security one of the first fleets to sign up to Motorvate. Social Security Minister Hugh Bayley said: 'I can speak for all government fleets in welcoming Motorvate. It is important that government departments help to set an example by greening our own fleets and I am proud that the DSS is playing its part.'

Others signing up to the new scheme include the RAC, BBC, Lex Vehicle Leasing, Whitbread plc, UK Atomic Energy Authority Police, Suffolk Fire Brigade and Nexus (the Tyne and Wear Passenger Transport Executive).

Lord Macdonald said: 'Motorvate is good for business and good for the environment. Traffic emissions are decreasing in Britain, mainly through improved vehicle technology and cleaner fuels. Emissions of harmful nitrogen oxides and particulates are already half what they were ten years ago, and in ten years time should be less than half what they are now.

'Fleet managers can play a central role in reducing the environmental impacts of company cars and vans, and I am delighted to be welcoming the first fleets to Motorvate – they are showing how seriously they take their environmental responsibilities.'

The government also published the final report of the Cleaner Vehicles Task Force (CVTF), set up two years ago to advise on ways to reduce vehicle pollution.

The CVTF report, *The Way Forward,* anticipates exciting future developments, such as hybrid electric and fuel cell vehicles that will deliver improvements in fuel economy, and suggests practical ways to encourage consumers to buy and drive greener vehicles.

Company cars make up around half of all new car sales and a significant proportion of the second-hand car market. Business cars and vans do around 21,500 miles a year compared to around 8,000 miles a year for private vehicles. It is estimated that vans and cars used for business purposes produce around 17 million tonnes of CO_2 a year(approximately 15 per cent of all road traffic CO_2 emissions). Improving the fuel-efficiency of the business vehicle fleet could therefore have significant impacts on the environment.

Motorvate is a government-backed scheme designed to help company fleets cut fuel costs and help the environment. It sets simple targets for improving fuel efficiency and environmental performance. The core target is a reduction of 12 per cent in the fleet's carbon dioxide emissions over a three-year period, 3 per cent of which must be achieved through reduced business mileage. The scheme will be based on annual assessment of vehicle inventory, mileage patterns and vehicle use, and progress towards meeting the three-year targets.

These targets are felt to be achievable by most fleets. Advances in vehicle and fuel technology in themselves will deliver improved fuel efficiency. Changes to graduated VED and company car taxation, to a system based on CO_2 emissions, will reward drivers for selecting more fuel-efficient vehicles. Motorvate will offer fleet management guidance, a telephone advice service and on-site assistance to participating fleets. Motorvate certification will complement other environmental management systems such as ISO 14001. Certification will be awarded on a 'five-star' points system.

There is a strong business case for companies to improve their fuel efficiency. For example, an average fleet of 200 vehicles can save £34,000 per year by meeting Motorvate targets. With growing public concern about the environment there are other potential commercial advantages for companies that can demonstrate their 'environmental credentials'.

There will be a registration fee to cover costs of running the scheme, in the region of £500-£1,000 per year depending on size of fleet. This will be more than offset by the savings from improved fuel efficiency, and other business advantages of gaining a high-profile environmental accreditation. Contact Motorvate helpline on: 0808 1009100 or visit the website at www.greenerfleet.org.uk

The Cleaner Vehicles Task Force was set up in late 1997 to bring together government, industry and other interested parties to discuss practical ways to encourage the development, manufacture and purchase of cleaner, more fuel-efficient, quieter vehicles.

The Way Forward is available from DETR Free Literature, PO Box 236, Wetherby, LS23 7NB, tel 0870 122 6236 or at http://www.roads.detr.gov.uk /cvtf/index.htm. Copies of the interim report published last summer, *Driving the Agenda,* are available from the same address. The Task Force has also published a series of detailed reports on the environmental impacts of road vehicles in use, the environmental impacts of the production and disposal of vehicles and a report looking at technical solutions for reducing emissions from in-use vehicles. For details of where to obtain these reports, telephone 020 7944 4378.

The report on alternative fuels, the Report of the Alternative Fuels Group of the Cleaner Vehicles Task Force, *An assessment of the Emissions Performance of Alternative and Conventional Fuels* is the report of the CVTF's alternative fuels sub-group. It is available from DTI, Automotive Directive, 151 Buckingham Palace Road, London, SW1W 9SS, tel. 020 7215 5000 and at http://www.autoindustry.co.uk.

The government is consulting on a proposal to extend powers to local authorities in England and Wales enabling them to check compliance with vehicle emission standards at the roadside. Currently such powers are available to six named authorities in England and Wales on a trial basis.

India and UK team up to study climate change

An Indo-UK research programme on the impacts of climate change in India has been launched in New Delhi.

India's Ministry of the Environment and Forests (MoEF) and the UK's Department of the Environment, Transport and the Regions (DETR), have joined forces on a three-year study into the potential effects of global warming over the next 80 years.

Climate models show that temperatures will increase and that rainfall patterns could change significantly over the next 100 years due to increasing levels of greenhouse gases in the atmosphere. These changes may adversely affect water resources, agriculture and forestry, increase the spread of disease and affect key economic sectors. Rising sea levels will also affect low-lying coastal regions. Assessing the impacts of climate change is an essential foundation for developing strategies to adapt to climate change.

Indian scientists will carry out studies to build a comprehensive picture of the possible future impacts of climate change in India. The DETR will provide £650,000 to fund the initial studies and programme management. Collaboration between Indian and UK researchers will be encouraged. The project will also involve the UK's Hadley Centre for Climate Prediction and Research.

A workshop being held in Delhi is finalising details of the research programme and will inaugurate the main phase of the programme.

The programme of research will include the development of climate change and socio-economic scenarios for India and assessment of impacts on water resources, agriculture, forests, industries, energy and transport, human health and coastal zones.

Indo-UK programme on impacts of climate change in India, a booklet explaining the project, will be available on the web site of consultants, Environmental Resources Management (ERM) at www.erm.com (click on office location ASIAPACIFIC, then India). Copies of the booklet are also available from ERM directly.

Tough new controls on ozone depleting substances

Supply and use of hydrochlorofluorocarbons (HCFCs), chlorofluorocarbons (CFCs), halons and other ozone depleting substances are subject to new controls throughout the EU from Sunday, 1 October 2000.

There will be an immediate ban on the sale and use of most CFCs, carbon tetrachloride, and 1,1,1, trichloroethane, although exemptions do apply. These substances are mainly used in refrigeration, as solvents and in dry cleaning.

EC Regulation 2037/2000 implements within the EU commitments agreed by the Parties to the Montreal Protocol at both the Montreal (1997) and Beijing (1999) meetings.

Immediate bans have been placed on the use of HCFCs in certain applications and their use in most new refrigeration and air conditioning equipment is prohibited from 1 January 2001.

Halons 1211 and 1301 used in fire fighting will remain available until 31 December 2002; however, most of these systems must be decommissioned by 31 December 2003. This derogation does not include bromochloromethane (halon 1011) sale and use of which is prohibited from 1 October 2000.

In addition to the above prohibitions, the production and sale of methyl bromide, used in soil fumigation and as a pesticide, is prohibited from January 2005.

The new regulation replaces EC Regulation 3093/94.

The Montreal Protocol on Substances that Deplete the Ozone Layer was first agreed in September 1987. The Protocol has now been ratified by over 170 countries.

The Protocol was adjusted in Vienna in 1995 and amended and adjusted in Montreal in 1997. The Protocol now contains new controls on methyl bromide consisting of a 25 per cent cut from 1 January 1999, a 50 per cent cut from 1 January 2001, a 70 per cent cut from 1 January 2003, and phase out from 1 January 2005, with a blanket exemption for quarantine and pre-shipment uses and provision for critical uses after phase out.

The controls on HCFCs were strengthened in Vienna by introducing a 2.8 per cent cap on consumption and phase out in 2020 with a 0.5 per cent allowance until 2030 for servicing existing refrigeration equipment. The UK, along with other members of the European Union, has implemented the Montreal Protocol through an EC Regulation, which is directly applicable in UK law. The purpose of the new regulation is to replace the existing regulation (EC Regulation 3093/94) and to implement the Vienna adjustment and the Montreal amendment and adjustment to the Montreal Protocol.

Scientific evidence has shown continued significant losses of stratospheric ozone particularly over the Arctic and Antarctic regions. As a result of the control measures under the Montreal Protocol, the total abundance of man-made ozone depleting substances was expected to peak in the stratosphere before the year 2000. However, the observed concentrations of halons and HCFCs are still increasing and are slowing the reduction in ozone depleting substances in the atmosphere and hence the recovery of the ozone layer. As a result of this ozone depletion, ground-level UVB radiation is also increasing and, although it would have been considerably greater without the Montreal Protocol, current levels could still have potentially serious impacts on a range of sectors, including human health.

Detailed information including free guidance for suppliers and users of ozone depleting substances will be available shortly from http://www.dti.gov.uk/access/ozone.htm or direct from the publishers at fax 0870 150 2333 or email dtipubs@echristian.co.uk

‘Waterways for tomorrow’: a new lease of life for inland waterways

Britain’s inland waterways are set to play a major role in the Government’s urban and rural regeneration drive, Deputy Prime Minister, John Prescott has revealed.

He says the national system of canals and navigable rivers could make a significant contribution to tackling social exclusion by acting as a catalyst for economic and social renewal.

Launching *Waterways for Tomorrow,* a new policy vision for inland waterways, Mr Prescott said that improving and restoring canals and rivers, and redeveloping disused and derelict waterside land, could help to deliver the Government’s target for development on brownfield sites as well as creating jobs and business opportunities.

‘This policy is good news for the environment, for rural and urban communities and for the economy. Already there are many good-practice examples of urban regeneration, such as the mixed-use developments being carried out in Leeds and at Paddington Basin in London, bringing jobs, housing, tourism and enhanced leisure facilities.

Waterways for Tomorrow encourages a greater and more innovative use of the waterways. It also promotes partnerships between the bodies who manage the waterways and all sectors of society – local communities, Government agencies, the private sector – to develop the waterways and bring in investment.

The document highlights imaginative projects such as the soon-to-be-expanded ‘Fibreway’ fibre-optic data network; and the ‘Water Grid’ which would use canals to move water from one part of the country to another. These projects will generate much needed income to plough back into the maintenance and improvement of the waterways.

‘British Waterways is already making good progress in unlocking the potential of its waterways, forming innovative partnerships with the private sector,’ Mr Prescott said.

‘But I want to see more done by all navigation authorities. That is why I am asking local authorities and Regional Development Agencies to play their part by ensuring that they take account of waterways in their regeneration plans and support worthwhile projects for their improvement, development and restoration.

‘Our inland waterways are one of our most important national assets. We value them not only for their heritage, but because they improve the quality of the environment and people’s lives. By revitalising the waterways, we can deliver real benefits to the environment, to local communities and to businesses.’

Waterways for Tomorrow sets out the Government’s plans for the waterways including:

- **Recreation, leisure and tourism** – greater recreational use and enhanced access to waterways for all, especially the young, disabled and disadvantaged.
- **Benefits to the environment** – new waterside development should respect, conserve and enhance the waterways and their built and natural heritage. The Government supports action plans to conserve and enhance biodiversity and encourages navigation authorities to provide/promote facilities for electric boats where practical and economic;
- **Planning guidance** – New guidance will be produced, so that road and bridge building does not hinder future waterway restoration; the Government will also continue to review each PPG so that the planning system encourages the development of the inland waterways; the Inland Waterways Amenity Advisory Council will prepare good practice guidance, with examples of good planning;
- **Freight** – transfer of freight from road to waterway is encouraged whenever practical and the Government will consider extending the Freight Facilities Grant scheme for capital projects; it will also consider allowing grants for non-capital projects for the first time; in addition, a Freight Study Group will be set up to examine options for the increased transfer of freight to the waterways.
- **Public/public partnerships** – formal plans by British Waterways and the Environment Agency to work even more closely together are welcomed and all navigation authorities are encouraged to work closely together, and with Regional Development Agencies and local authorities to improve the system. RDAs are also asked to consider waterways in their strategies and to support waterways projects;
- **Public/private partnerships** – private partnership is an important way to generate income. The PPPs being taken forward by British Waterways will bring in new investment and help the waterways to achieve their full potential.
- Public/voluntary partnerships – Involving the general public in the waterways is crucial and the creation of The Waterways Trust as a charitable trust to promote our waterways and raise funds for restoration, is welcomed; British Waterways’ proposal that the trust set up a new subscription service to provide information about the waterways is endorsed;

John Prescott launched *Waterways for Tomorrow* at Willowtree Marina in West London, a former wharf serving a clay pit which has been developed into a thriving mixed-use site in a public-private partnership between Laing Homes Ltd, Hillingdon Borough Council, British Waterways and Willowtree Marine Ltd. The site supports local businesses, including a popular waterside cafe-bar and family housing, as well as being home to many leisure craft.

Waterways for Tomorrow follows up the 1998 White Paper *A New Deal for Transport; Better for Everyone,* by setting out proposals for the future of our inland waterways.

It is mainly about the canals and navigable rivers which make up the bulk of the inland waterways but it also covers other kinds of inland waterways such as the Broads. It concentrates on the non-tidal waterways but much of its contents apply also to tidal waterways.

There are approximately 5,090 kms (3,160 miles) of fully navigable inland waterways in England and Wales about 445 kms of which are tidal. British Waterways is responsible for about 2,615 kms, about 75 per cent of which comprises canals. The Environment Agency is responsible for about 875 kms, nearly all navigable rivers.

New targets for recycling packaging

Proposals for increasing the packaging waste recovery target from 52 per cent to 58 per cent and the material specific recycling target from 16 per cent to 18 per cent were set out in a consultation paper published by the DETR in August. The increased targets will enable next year's EU deadline to recover 50 per cent of all packaging waste by June 2001 to be met, and ensure that the UK meets its commitments at the lowest possible cost to business.

The consultation paper gives estimates of the amount of packaging waste that will flow into the waste stream in 2001, and examines the amount of this waste that would be recovered and recycled under the UK Business Recovery and Recycling targets currently proposed for 2001. It concludes that the current targets will not be sufficient for the UK to meet its European obligations for the recovery and recycling of packaging waste. The consultation paper therefore proposes new targets for 2001 – 58 per cent recovery and 18 per cent material specific recycling.

The paper includes the interim targets and data collected for 1998 to 2000, explaining that this improved data on the tonnage of packaging in the waste stream has informed this revision.

The EC Packaging and Packaging Waste Directive (94/62) requires the UK to meet targets for the recovery and recycling of packaging waste. Targets are set as a percentage of packaging flowing in to the waste stream. Target levels are 50 per cent recovery for total packaging, minimum 25 per cent recycling for total packaging and minimum 15 per cent recycling for each material (i.e. plastic, steel, paper, etc).

The UK introduced the Producer Responsibility Obligations (Packaging Waste) Regulations in 1997 (as amended in SI 1361 and SI 3447 in 1999) as the best means of meeting these targets.

Around half of packaging waste arises in the household waste stream, so increased packaging waste recycling contributes to the recycling targets placed on local authorities and also means a reduction in packaging waste landfilled, consistent with the recent Waste Strategy 2000.

Recovery and recyling targets in the Regulations and Directive targets

CURRENT TARGETS

	Recovery	*Recycling*	*Directive recovery target*	*Directive recycling target*
1998	38%	7%		
1999	43%	11%		
2000	45%	13%		
2001	52%	16%	50%	25% (15% for each material)

PROPOSED NEW BUSINESS RECOVERY AND RECYLING TARGETS FOR 2001

	Business recovery target	*Business material-specific recycling target*	*To achieve approx. actual recovery of*
2001	58%	18%	51%

Tough measures for poor waste sites

Poorly managed waste sites will get more inspections under a new risk-based system. In future, poor performers will also pay higher charges until they improve. Better managed sites will get fewer inspections – a minimum of four a year – and lower charges.

Under Operator Pollution Risk Appraisal (OPRA), each site will be given an Environmental Appraisal and an Operator Performance Appraisal. This will provide a score for each site and determine how often the Environment Agency inspects that site.

The objectives of the new system are:

- making more effective use of the Agency's waste inspection resources by targeting inspections on sites where they are most needed;
- helping site operators improve their performance and reduce the risk;
- ensuring the Agency's site inspections are of the right quality and consistency;
- providing clear evidence that the Agency is carrying out 'appropriate periodic inspections'; that it is effectively supervising sites; and that the environment and human health are being protected.

Michael Meacher said: 'We must ensure that waste is recovered or disposed of in ways which protect the environment and human health. The site inspections which the Agency carries out are a vital part of this process. The new system will further improve standards by targeting inspections on those sites where they are most needed and making more effective use of the Agency's waste inspection resources.

'It will also provide site licence holders with a risk management system which enables them to identify the environmental risks associated with their site and the operations they carry out; and to assess and improve the quality of their performance in managing those operations.'

The main guidance on licensing and the frequency of site inspections is set out in Waste Management Papers No. 4 *Licensing of waste management facilities* and No. 4A *Licensing of metal recycling sites.* Until now, the recommended inspection frequencies have been based on the type of site. For example, eight inspections a month for co-disposal landfill sites and one a month for scrap metal recycling sites.

The introduction of the new system follows a consultation exercise carried out last year. It is called Operator and Pollution Risk Appraisal (OPRA) for waste. The main factors are an Environmental Appraisal and an Operator Performance Appraisal which provide an individual OPRA score for each site. This OPRA score will determine how often the Environment Agency inspects the site. However, (a) each site will have a base environmental score which will determine the minimum inspection frequency for each site; and (b) since this score will be recalculated quarterly, the minimum inspection frequency that any site will be subject to is once every three months.

Major steps taken to protect wildlife

Two major moves to increase protection for England's wildlife and habitats have been announced by Deputy Prime Minister John Prescott.

The number of sites where rare wildlife species and habitats of European importance can benefit from the highest possible level of protection are set to rise by around 50 per cent.

In addition a new code will encourage co-operation between the organisations which advise on the management of nationally important areas (Sites of Special Scientific Interest) and the people who own or gain benefit from them.

Eighty-one new sites, covering around 300,000 hectares, could be designated under proposed revisions to the list of England's Special Areas of Conservation (SAC). The proposals, under European law, will ensure the long-term protection of the sites and the species that live there, in some of England's finest natural areas. The proposed new SACs are located throughout England, including Ashdown Forest in Sussex, the North York Moors, Overstrand Cliffs in Norfolk and Dawlish Warren in Devon.

The proposals are part of revisions to the UK list of candidate SACs (cSACS), and will mean that in England:

- 81 new sites will be added (including cross-border sites with Wales and Scotland), bringing the English total to 228 and the UK total to 576 cSACs;
- the English cSAC series will include some additional 300,000 hectares of land; and
- 470 additional habitat types and species interests will be protected in England across the proposed and existing sites.

John Prescott said: 'This major step for England's wildlife should complete the UK list of candidate SACs. It is part of the UK's contribution to the European Union's extensive network of important nature conservation sites – known as Natura 2000 – all of which are prized for their rare and threatened habitat types and wildlife species.'

The Government has asked English Nature to start consultation both on the revisions to existing sites and on the new sites proposed that are wholly within England. A number of cross-border sites with Wales and one with Scotland will be the subject of separate arrangements with the devolved administrations. All cSACs are underpinned by a notification as a Site of Special Scientific Interest (SSSI). If a site is not already a SSSI then a separate consultation will run in parallel on designating it as a SSSI.

The Government is committed to full and effective public consultation before deciding finally which areas in England to include in the list. In addition to writing to national organisations inviting comments on the proposals English Nature will also be consulting, site by site, with landowners, occupiers and other interests, including local authorities. Views expressed will be considered fully before the final list of further sites is proposed to the Commission.

The Deputy Prime Minister also launched new draft guidelines for English Nature and public bodies on protecting, managing and conserving England's 4,000 SSSIs, which cover nearly 7 per cent of England's total area. Productive partnerships between English Nature and landowners and managers are central to the new guide, and essential in conserving SSSIs, which include some of England's most valuable nature conservation and earth heritage sites.

The draft guidelines reflect new measures in the Countryside and Rights of Way (CROW) Bill which will, with Parliament's approval, improve protection for SSSIs. They advise on a variety of management and conservation issues, including notification of sites, establishing management schemes, consulting with landowners or occupiers, and dealing with applications for activity which is potentially damaging.

Where a site's condition is deteriorating and a management agreement to remedy this is impossible, the guidelines set out English Nature's powers to ensure positive management. They also explain Ministers' expectations of public bodies in carrying out their new duties and responsibilities towards SSSIs as set out in the CROW Bill.

Council Directive on the Conservation of natural habitats and of wild fauna and flora (92/43/EEC) requires member states to identify certain sites as candidate Special Areas of Conservation. From these national lists, Member States and the Commission will agree the sites of Community importance that will become designated SACs.

The Habitats Directive was transposed into British law by the Conservation (Natural Habitats, etc) Regulations 1994. In February this year the Conservation (Natural Habitats, etc) (Amendment) Regulations 2000 amended Regulation 10 to ensure that the full protection of the regulations applied to candidate SACs, already submitted to the Commission, in the same way as they already applied to Special Protection Areas under the Birds Directive.

A list of 340 candidate sites was submitted to the European Commission in July 1999. At a moderating meeting with the Commission in the autumn of 1999 the UK and the eight other Member States within the Atlantic Bigeographical Region discussed their respective site lists. Each Member State has tackled the task slightly differently and each was held to have presented an insufficient list of sites. The specific criticism of the UK list was that more attention ought to have been paid to reflecting the overall geographical and ecological range of habitats and species and to ensuring that submitted sites reflected all the interests on them.

To address these concerns English Nature and the other country nature conservation agencies, in collaboration with the JNCC, have reviewed the UK candidate SAC list and made recommendations for a further 236 new possible SACs (81 of which are in England including five cross border sites). Together with the new possible SACs substantial amendments to existing sites for which new interests have been identified or, where boundaries have been extended, will also form part of a further UK site submission.

An eight week period for responses is allowed on proposals for potential SACs that have already been notified as SSSI.

The new draft guidelines on SSSIs are out for public consultation. Copies of the guidelines are available from: DETR Free Literature, PO Box 236, Wetherby, West Yorkshire, LS23 7NB, Tel: 0870 1226 236. The deadline for responses is 16 November.

The proposed SACs and a map detailing the candidate sites and proposed sites is available from the DETR web site.

Government help for the countryside

Extra support for rural communities and the countryside was announced by Deputy Prime Minister John Prescott in August.

Farmers who set up new horse related enterprises, such as pony trekking centres and riding schools, on their land may benefit from rate relief under plans published for public consultation *Rate relief for horse enterprises on farms.*

This new scheme, which aims to promote sustainable rural economies, is part of the government's action plan for farming.

It proposes 50 per cent mandatory rate relief for new small-scale horse-related activities, which would help farmers diversify while continuing to be employed in farming. Local authorities would also be given powers to increase the relief to 100 per cent of the rates bill, for businesses receiving the mandatory 50 per cent relief and which they considered needed additional help. Properties would only be eligible if the enterprise is new and located on farming premises. Each new business would be able to receive relief for five years.

Mr Prescott said: 'These proposals take forward another of the commitments in the action plan for farming, launched by the Prime Minister at the farming summit in March.

'It will help farmers to supplement their core business by complementing other initiatives in the Farming Action Plan and measures to be implemented through the England, Rural Development Plan. It forms part of our strategy to promote sustainable rural economies which will be set out in the Rural White Paper to be published in the autumn.'

Mr Prescott also gave details of countryside and wildlife funding secured as part of the Spending Review 2000. Funding will rise from £135.5 million this year to £161.5 million in 2001-2, a 19 per cent increase. Over the following two years a further £114 million will be made available, raising average annual expenditure in these two years to £205 million.

The new funding reinforces significant increases from the Comprehensive Spending Review in 1998. Under the 1998 review, allocations for countryside and wildlife programmes were £122m in 1999-2000, £134m in 2000-1 and £147m in 2001-2. The latest spending review means the increase planned in 2001-2 rises from 10 per cent to 19 per cent, with further increases for subsequent years.

The Treasury White Paper *Prudent for a purpose: building opportunities and security for all* sets out the overall aim of the Government's rural programmes: to sustain and enhance the distinctive environment, economy and social fabric of the English countryside for the benefit of all. The DETR's countryside and wildlife programmes will contribute to that objective and will also help it meet its new targets of opening up public access to mountain, moor, heath and down and registered common land by the end of 2005; and bringing into favourable condition by 2010 95 per cent of all nationally important wildlife sites, compared to the current estimate of 60 per cent.

The £161m available next year will be allocated mainly to the Countryside Agency, English Nature and the National Park Authorities. It will also provide finance for the market towns initiative, the National Forest Company, for the DETR's Wildlife Inspectorate and enforcement work, for research and publicity on wildlife and countryside issues and for support to international organisations.

Greater protection for rare birds

Rare birds and their habitats will get the highest possible level of protection, with the classification of Thorne and Hatfield Moors in Yorkshire and the Humber as a Special Protection Area (SPA)

Thorne and Hatfield Moor are the two largest remaining lowland bogs in England. They host the highest number of breeding birds in the north of England and the eighth highest in Britain. During the summer the endangered Nightjar breeds on the Moors, which together form one of their most northerly breeding sites in Britain. Small populations of wintering Hen Harrier, Merlin and Short-eared Owls also hunt over the open moorland.

Designating Thorne and Hatfield Moors as a SPA under the European Birds Directive will mean that all new developments and activities will need to be assessed for their impact on the interests for which the site has been classified. Existing consents for mineral extraction which may impact on these interests will also be reviewed.

The two moors are located in South Yorkshire, East Riding of Yorkshire and North Lincolnshire and cover 2449.2 hectares. The SPA lies within Thorne, Crowle and Goole Moors Site of Special Scientific Interest (SSSI) and Hatfield Moors SSSI. The two moors, which are approximately 5km apart, are remnants of a more extensive area of wetland covering the floodplain of the Humberhead Levels. They are individually the largest (Thorne) and second largest (Hatfield) remaining examples of lowland raised bog in England. Like many other lowland bogs, the site has been modified, in this case by peat cutting.

The Nightjar is a summer visitor to Britain and Europe, which nests in areas with sparse woodland and scrub. The population in Britain is widely scattered, mostly in the south. The breeding population in Britain and most of northern Europe has been in decline for some years, although the population has been relatively stable during the last decade.

The 1979 European Community Directive (79/409/EEC) on the conservation of wild birds requires member states to notify the Commission of sites which are of particular importance to the conservation of wild birds.

As a matter of policy, no site is classified under the Birds Directive unless it has first been notified as a Site of Special Scientific Interest (SSSI) under Section 28 of the Wildlife and Countryside Act 1981. The Special Protection Area (SPA) classification gives public recognition to the international importance of the site and protection as a European site under the Conservation (Natural Habitats, etc) Regulations 1994. Development proposals which adversely affect the integrity of the site will only be permitted where they are in the overriding public interest. Parts of Thorne Moors area also included within a candidate Special Area of Conservation under the European Community Habitats Directive.

217 SPAs have been classified in the UK covering over one million hectares.

Assessing the environmental risks of GM technology: a cost/benefit analysis

Guy M. Poppy

The debate surrounding GM (genetically modified) crops is growing increasingly complex, intense and emotional. This is complicated by the continuing twists and turns as new research is published; the conclusions of which are often misinterpreted or even misrepresented.

Many new technologies pose associated economic, environmental and ethical risks that must be addressed before their benefits can be fully realised. Fear of the unknown is a natural human instinct, but we are also able to reason, which we must do when assessing new technologies.

The invention of trains, cars and aeroplanes were all greeted with scepticism and concern, but these technologies are now part of our life. All these modes of transport have a risk associated with their use, but people accept this risk because of the benefits offered. In deciding whether to take up a new technology, the following questions are normally posed:

- What are the benefits of the new technology?
- What are the risks?
- Are these risks worth taking?

I will address these questions and explain why field trials are an integral part of assessing environmental risks and how in the democratic process, the information from field trials is essential for politicians, regulators and the public to reason and make decisions about GM crops.

What are the benefits of GM technology?

Why should anyone take any risks if they cannot see a benefit? On the assumption that nothing we grow or eat is absolutely safe, one has to see some benefit before taking a risk, however small. Much of the criticism of the current generation of GM crops centres on the question of who really benefits. The only commercialised crops, herbicide-tolerant and insect-resistant, appear to benefit only multi-national companies and farmers. However, without the use of synthetic chemicals, we would currently lose about 40 per cent of all our crops. Many of these chemicals are becoming less efficient, due to resistance, and are also viewed as detrimental to the environment. GM crops, which potentially require fewer chemical inputs, could therefore offer a clear benefit to the consumer in terms of food security and quality (less residues) and the public by increasing biodiversity in the agricultural environment. Improving efficiency by GM technology could also lead to higher yields and/or the need to cultivate less land.

Much modern agricultural practice has a damaging effect on biodiversity, but all forms of agriculture, even organic, have an effect on the ecosystem. GM crops could be grown on less land, reducing the total area needed for agricultural production and freeing land for wildlife and conservation purposes.

The more exciting opportunities that GM technology may bring to agriculture include improved nutritional value, a longer shelf life, bioremediation, plastics and pharmaceutical products. If the first generation of crops had been vitamin A in rice, there may not have been such a backlash against the technology and it is the technology that I am defending, not the industries using the technology!

What are the risks?

The environmental impact of GM crops must be accurately and impartially assessed so as to exploit the benefits while reducing the risk. I will predominately focus on insect-resistant crops as they are the main focus of my research.

The importance of adopting a case-by-case risk-assessment is imperative, as different transgenes, crops and growing regimes will determine which organisms that are likely to be exposed and the possible consequences of such exposure. The tiered risk-assessment approach, as adopted to assess pesticides and pharmaceuticals, is the most rational way forward, but it is important to realize that laboratory studies developing 'worst-case scenarios' are the first part in an assessment and do not necessarily reflect the consequences of growing GM crops in the field.

If one accepts the definition of risk as equalling hazard times the probability of that hazard occurring, then first tier testing is mainly associated with determining hazards. As one changes the scale of the experiment, the nature of the hazard may change and more likely the probability of it occurring will alter. If the hazard is viewed as too serious in the first tiers, then the development of the crop can be abandoned. Therefore, a selection process has occurred before the crops are released into the environment, let alone commercialising its production. If the independent scientists on ACRE (Advisory Committee for Releases into the Environment) view the risk of releasing the crop as too great, they will not grant consent even for experimental research.

There have been no commercial plantings of any GM crops in the UK, and although there have been a number of releases, these have all been for research purposes, including a number addressing environmental issues.

The field trials are the third tier of a risk assess-

ment. The plants in question will have been investigated in the laboratory addressing direct and indirect effects as well as toxicological and behavioural assessments. A second tier assessment in a large cage or semi-field environment will have been made to assess whether populations of insect respond in the same way as individuals in the laboratory tests.

> ***'Man has been genetically modifying crops since he stopped being a hunter-gatherer...'***

This allows transitions between tiers to be studied and models and predictions to be developed and tested. It also begins a more accurate assessment of the risk, because the probability of a hazard occurring may change as complexities in space and time are increased. Therefore, by the time a field trial of insect-resistant plants is underway, a lot is known about potential hazards and, more importantly, risks. If these risks are too high, the trials would not be conducted!

Another important factor which can only be addressed in large-scale field trials is the indirect effects on the environment caused by changes in agricultural practice. The current farm-scale evaluations of herbicide tolerant crops (winter and spring oilseed rape and maize) have the overall objective of assessing the effects of agricultural management of GM herbicide tolerant crops on wildlife.

These trials will be one of the most intensively sampled ecological studies ever, and are unusual in that changes in farming practice are not usually subjected to such ecological scrutiny. These trials therefore offer a rare opportunity to assess in great detail the potential impact of a new agricultural technology on the environment.

What does the destruction of trials achieve?

Information is essential in order to make a decision. The purpose of field trials is to provide information for making decisions about the environmental risks of GM crops. Destruction of the trials by a few people stops this essential information from being obtained. It does not allow the public or the policy makers to make reasoned decisions. Surely, once trials have been approved by regulators and policy makers, the trials should be conducted so that decisions can be made based on actual evidence. If one believes in a democratic process, then individuals should not destroy experiments which have been approved and should voice their opinion by more appropriate means.

Some of my own research on developing field assessment protocols for insect-resistant GM crops was destroyed by protestors. These trials were conducted on apple trees grown hundreds of miles from commercial apple growing areas and the flowers were bagged, to ensure that cross-pollination could not occur – the regulations are tight. The destruction of these trees has delayed the development of protocols which are needed for assessing insect-resistant GM crops as part of our research for DETR. I receive no research funding from industry and this research is funded by the public purse for the public good.

Many of the anti-GM lobby use the term 'genetic pollution' without defining what this term means. Pollen flow is not 'genetic pollution', as it does not necessarily mean gene flow or gene establishment. Only if genes establish in hybrid plants/other species and have a consequence on the fitness of these plants can one talk about 'genetic pollution'. Most of the traits currently being engineered into plants are extremely unlikely to establish in populations of plants outside agricultural communities because this will offer no advantage and thus not be selected. Therefore, if the destruction of trials is to prevent genetic pollution, then protestors are assuming that regulators have ignored the gene establishment implications, which is not true and is why assessments are based on a case by case evaluation considering both the new trait and the crop.

Are the risks worth taking?

Man has been genetically modifying crops since he stopped being a hunter-gatherer. Genetically modifying crops by recombinant DNA technology, genetic engineering, offers a tremendous scientific opportunity with considerable benefits to mankind. There are risks, as there are with all methods of crop production, and these risks need to be assessed on a cost-benefit basis. Current regulation focuses only on risks which, it could be argued, is a good thing.

It is the public who will ultimately determine whether GM crops are grown, and they will need to see whether the benefits outweigh the risks. At present, risks are being exaggerated and there appears to be a crusade against this technology rather than a reasoned debate. The only way to assess risks as against hazards is to conduct experiments at the appropriate scale. Field trials are the last stage in this assessment and are essential in evaluating the real environmental risk. Such trials will not be allowed if risks identified earlier in the assessment are seen to be too great.

It is important to take a case-by-case analysis of GM crops as the regulators do. One can take moral or ethical objection to some of the technology, but if only using risk, then the risk needs to be properly understood. However, we must not be so frightened by the weight of uninformed opinion as to throw away a technology largely developed in this country and being enjoyed by others throughout the world.

Genetic engineering will not solve all agricultural problems, but it can allow a way forward in the same way as new medicines allow progress in human health. If we had rejected new technologies because there are aspects/products we did not like, then many important products which now benefit mankind would have never reached the marketplace.

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Crisis of the motorised economy

Dr Derek Hall MIEnvSc

This is being written in the immediate aftermath of September's week of blockades imposed on oil terminals by the coalition of hauliers and farmers protesting against high fuel taxes. Although imitating their initially much reviled French counterparts, the protesters appeared to generate much popular support, not least from the tabloid press. This blockade, in its turn, caused panic buying and the rapid exhaustion of fuel at filling stations, and the beginnings of panic food purchasing in supermarkets. Ironically, within one of the year's other extraordinary manifestations, the Millennium Dome, an information board in the environment zone informs the now less-disbelieving visitor that, if every car-owner in the country queued up for petrol at once, the pumps would run dry in about 20 minutes.

Although these words may be overtaken by events by the time they are read, it is perhaps worth reflecting on the range of environmental issues to have risen to the surface as a result of this extraordinary week.

At a personal level, perhaps the most pleasing element of the week was to see schoolchildren and their parents walking or bicycling to and from school and, where motor vehicles were being used for the school run, there was clearly a mood of co-operation and sharing. So here was presented an educational window of opportunity to appreciate healthier lifestyles, the sharing of resources, and the need to use fossil fuels more efficiently.

According to DETR data, atmospheric pollution levels in some larger cities were reduced by up to two-thirds as drivers abandoned their fuel-starved cars for other modes of transport. Levels of atmospheric carbon dioxide were shown to be far lower at the end of the 'crisis' week than at its beginning.

On busy Marylebone Road in central London, the highest recorded level of carbon monoxide fell from 3.5 parts per million on Tuesday to 1.8ppm on Friday. In nearby, albeit leafier, Bloomsbury, the level dropped from 1.4ppm on Tuesday to 0.4ppm on Friday.

In central Manchester, it fell from 0.5ppm to 0.3ppm during the same period, in Cardiff it dropped from 0.7ppm to 0.4ppm, and in Bristol from 0.6ppm to 0.2ppm. In Belfast, which was mostly unaffected by the fuel shortage, the carbon monoxide level rose, as 'normal' during the working week, to 0.4ppm on Friday from 0.1ppm at the start of the week.

Although changes in the weather, with wet conditions dominating southern England towards the end of the week, would have influenced this overall change, the significant reduction of traffic levels must have been a major contributory factor in the diminution of carbon monoxide levels in Britain's urban areas. Further, although data were not available at the time of writing, road traffic accidents, casualties and fatalities will certainly have been reduced during the week.

Environmental taxation

Although the protests were in response to the combined effect of higher world crude prices and national fuel taxes, the UK enjoys one of Europe's lowest overall tax burdens. Total tax revenue as a proportion of Gross Domestic Product in the UK stands at roughly 35 per cent, compared to 45 per cent in France and more than 50 per cent in Sweden. In March 1993, the Conservative government introduced the fuel tax escalator, the mechanism that ensured that road fuel duty was successively increased by a fixed percentage above inflation. This revenue-raising measure was advertised as an environmental tax. Initially the escalator was set at 3 per cent, but this was later raised to 6 per cent. Since Labour came to power in May 1997 there has been a 42 per cent increase in the price of unleaded petrol, outstripping the rate of inflation by 27 per cent.

But successive governments have been guilty of failing to invest motoring taxes in transport improvements. Currently the Treasury takes £36 billion in motoring-related taxes a year but less than £6bn is invested by government in transport.

The cost of using cars and trucks in this country is still relatively cheap. Despite recent rises in petrol prices and motor insurance, the real cost of private motoring has stayed relatively constant over the past 25 years, while average rail fares have risen by more than 50 per cent and bus fares by 70-80 per cent. This hits the poorest hardest – there are four times as many low-income bus users as low-income car users in Britain. And despite the protests, in general the cost gap for British truckers compared to their continental Europe counterparts is relatively small. The Freight Transport Association estimates that French truckers' operating costs are just 5 per cent lower than in the UK, Belgians' costs are 3 per cent lower, and Dutch costs are equal.

For too long the country has pursued a low fuel-priced economy. Despite the protestations, over the past 30-odd years UK government and industry have progressively eliminated viable alternatives to motorised road transport. Britain is the most road-dependent economy in Europe – for both passenger transport (87.7 per cent in cars compared to 82.1 per cent in Germany and an EU15 average of 81.8 per cent) and freight (84.3 per cent by road compared to 67.1 per cent in Germany and an EU15 average of 73.1 per cent). And yet, the oil giants have spent years campaigning against higher taxes and duties on fuel: if western governments cut fuel taxes, that would further increase the demand for fuel – and its price.

Successive governments have diminished rather than created choice: through policies of massive rural rail route reduction associated with Beeching, elimination of urban trolleybuses and trams, motorway building programmes, bus deregulation and privatisation, and poor land use planning provision for cycling.

A loosening of planning restrictions in the 1980s hastened the growth of out-of-town shopping centres and business parks, encouraged urban sprawl and a devouring of green belts. As a consequence, the late-1980s saw a vast increase in the amount of mileage people travelled, inevitably by personalised transport, which the road-building programme fuelled further.

Although policies in the 1980s pandered to a natural desire for personal freedom, in many cases the ideal of flexibility and choice was an illusion. This applied increasingly to public transport. In terms of private motoring, the company car and road haulage, the myth of freedom seemed real. But by the early-1990s even the Conservatives acknowledged that building more roads simply generated more traffic, congestion and pollution. But decades of under-investment in public transport and the squandering of North Sea oil revenues had helped to socially polarise the motorised mobile from public transport users, with the former developing an ever stronger car-based dependency culture.

The fuel duty escalator was continued after the last general election on the grounds that it was an environmental measure aimed at forcing people to use their cars less. Yet no Labour minister has had the courage to argue that motorists are paying for the benefit of future generations. This is shameful, and reflects the timidity on congestion charging and the retreat on workplace parking levies which has characterised the government's much trumpeted white papers and ten year plan (see Docherty and Hall, 1999).

A government which addressed the electorate promising to alter the balance of transport and help protect the environment would have been better equipped to respond to the fuel protests and in particular would have not been inexplicably indolent in clearly explaining why, for the good of the nation and of future generations, we must all reduce the level of parasitic dependence on motor vehicles and the energy sources which currently fuel them.

David Begg, chairman of the Commission for Integrated Transport (CFIT), has called for a Europe-wide carbon tax to slow global warming. He argues for a policy of targeted taxes – congestion charging rather than high vehicle and fuel duty. He contends that while some motorists are paying too much for their trips others pay too little. For example, the rural driver (already paying 10-20 per cent more for petrol than a town driver) imposes congestion and pollution costs of only 0.8p per km, while the act of driving a motor vehicle along a major city centre street during the rush hour can impose congestion and pollution costs of around 43p per km.

Provision of much improved public transport systems – the double-decker trains with modern signalling and safety systems, the trams, cycle ways and buses, and most particularly, the multi-mode integrated public transport timetables that the Germans and Dutch take for granted – needs to be implemented along with traffic restraint measures – through congestion charging in our cities and on motorways – and a creative restructuring of motoring taxation. Congestion charges could vary on different types of roads, in different places, for different types of vehicles and loads, and according to the level of congestion at different periods of the day (Hall, 1998). They could also relate to the actual physical deterioration of the transport infrastructure brought about by different forms of motor transport. For example, according to the government's Transport and Road Research Laboratory, the rate of wear of a road surface increases as the fourth power of the axle load of a vehicle passing over it. In other words, a lorry with an eight-tonne axle load is reckoned to contribute to the breaking up of a road surface 65,000 times faster than a small family car with its half tonne axle load.

Such congestion charges would begin to drive home the important message that driving on a section of road requires payment for using – and abusing – a scarce commodity and the accompanying high costs to human health through pollution and traffic accidents imposed through that use. Satellite technology can eliminate the need to stop drivers at tollbooths. If, and this is critical, congestion charges were linked to reductions in fuel duty, several categories of drivers whose car journeys had less environmental impact could find themselves paying lower fuel charges, lower car tax and low congestion charges.

In this way, according to Begg, a government adviser, fiscal changes to motoring taxation could be undertaken in a way that does not impose an extra financial burden on motorists, but does have the effect of substantially reducing congestion and pollution.

The government's ten-year transport plan represents the biggest investment in public transport since the Victorian era. But official figures suggest that if the government does nothing, there will be a 28 per cent increase in traffic on inter-urban roads over the next decade. If congestion charging was introduced this could be decreased by 20 per cent. But it seems that to make that ambition politically acceptable it would be necessary to reduce vehicle excise duty and fuel duty.

Clearly a more holistic approach to transport and land use planning, job creation, retailing and recreation policies, housing development and a range of other socio-economic factors needs to be taken – by a Ministry (the DETR) which on paper is able to do this – to examine the reasons why Britons use their cars. For, in Germany 50 per cent of the population own cars, while in Britain the figure is nearer 40 per cent. Yet the average German drives 1,700 fewer kilometres a year. Germany also invests 50 per cent more in public transport infrastructure. Until now escalating fuel taxes have not significantly changed motoring behaviour in the UK.

Industrial practices

One of the unexpected outcomes of the blockade was the manifest fragility of an economy rendered interdependent by the way in which so many organisations now carry so few reserves. Rather than tie up capital in storing 'dead' stock, supermarkets and petrol stations rely on the 'just-in-time' delivery system first developed in Japan, depending on daily or even more

frequent deliveries to keep their shelves and underground tanks replenished. The logistics of just-in-time delivery are such that in the UK, a trucker on an average 93 km run must deliver within a specified 15-minute window, a feat which is claimed to be achieved in 95 per cent of cases. The system thus has to rely on precise logistics and a dependable transport network. If this is disrupted and the chain is cut, the system is in trouble.

Further, although some tanker drivers held a genuine fear of intimidation during the blockade, in response to threats to put their pictures on the internet if they breached the picket, a key reason for their reluctance to break the blockades was that in recent years oil companies have contracted out fuel delivery to low-cost independent road hauliers who now not only sympathise with the protesters' cause, but have good reasons not to support their employers. Indeed, grudges were held by some drivers who had been sacked as oil company employees only to be re-employed as independents at lower rates of pay.

The corporate sector's preoccupation with profit and self-interest was clearly a contributory factor to the success of the blockade – indeed, several commentators have identified a conspiracy on the part of the oil companies – against which a market-inclined New Labour government appeared impotent.

Networking with information technology

Prior warnings over the emergence of networks as the new organisational force perhaps did not envisage a motley coalition of farmers and road hauliers (and taxi drivers and fishermen…) could deploy networking capacity to such devastating effect. Here was a model for organised crime to emulate: a network whose co-ordinating centre was constantly changing and linked a range of personalised communications technologies.

Ironically, just the previous week, as part of a launch to get all government services online by 2005, the prime minister announced that £15m would be allocated to help businesses benefit from the internet, and heralded the first raft of 600 online centres to give hi-tech access to poorer communities. He said 90 per cent of workers were now employed in businesses connected to the internet, and a third of the UK population was now online, with the country boasting Europe's largest e-commerce market with £2bn spending last year. From 2001 unemployed people would be able to search job vacancies from home or in a Job Centre kiosk. 'The whole shape of our economy will be changed by this new technology,' the Prime Minister opined, without a hint of prior knowledge.

Transport's modal structure

In the past ten years, heavy goods vehicle traffic has increased by 38 per cent and van traffic by 40 per cent. If nothing changes, between 1996 and 2006 lorry traffic will grow by 16 per cent and van traffic by 44 per cent. Rail's share of the freight market grew by 16 per cent in 1998-99 after a 12 per cent increase the previous year. Rail freight traffic has continued to grow since then, albeit at a slower pace. But a major problem faced by this mode is its constrained ability to provide door-to-door and, yes, just-in-time delivery. Rail is still identified with the carriage of bulk materials: half of all journeys undertaken by freight trains involve the movement of coal, construction materials, metals and industrial minerals.

A typical goods train can move more than 1,000 tonnes of products, equivalent to 55 heavy lorries. Rail can't be the solution to all freight problems but it could carry much more goods than it does. The outdated infrastructure and system 'pinch points' act to confirm prejudices of unreliability. Indeed, the Post Office, one of the biggest users of rail services, has suggested that unless rail efficiency improves, the Royal Mail would increasingly be carried by road.

The government plans to increase rail freight by 80 per cent over the next ten years, and one element of reducing Britain's dependence on lorries for carrying goods around the country, could be heralded with the advent of the 'mini freight vehicle' (MFV) – a lorry on rails. Although such a mode has long existed, the latest variation, based on Railtrack's 'multi-purpose vehicle', will go on trial in the spring. Modelled on a machine which carries track maintenance equipment and can match the performance of passenger trains in terms of acceleration and braking ability, the MFV is aimed specifically at the carriage of lighter goods. Each train will be 100 metres long compared with the 800 metres of traditional goods trains, but could be coupled together to take larger loads. Among the half-dozen companies attracted by the project is Marks & Spencer, which, if it survives, will use the service to transport clothing and foodstuffs from the Midlands to Scotland.

The infinitesimal proportion of goods currently carried on the UK's waterways could be increased substantially. The DETR has suggested that 3.5 per cent of freight could be transported by water using the existing network, and is attempting to encourage what little growth there is. Grants for new projects switching goods from road to canal amounted to just under £2.3m between 1983 and 1997, since when the government has spent nearly £10m.

The further development of oil and gas pipelines and the strategic movement of fuel by coastal tanker will also need to be reviewed in the light of September's blockades. But the one environmental lesson of the week's events must be that pressure must be exerted on global industry to increase the speed of rendering more accessible inexhaustible fuel sources for alternative, sustainable forms of transport.

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Cyber voices against climate change

As November's United Nations climate summit in The Hague approaches, a coalition of 16 leading environmental organisations – including WWF, Greenpeace and Friends of the Earth – has launched the first international web-based initiative to give citizens around the world a voice in demanding a halt to global warming.

The website www.climatevoice.org in French, Spanish and German as well as English, aims to provide email facilities to send 10 million messages from the public to world political leaders demanding that they use the November summit to reduce the pollution that causes global warming. The first targets on the site will be European Union heads of state and Prime Ministers. Visitors can also download a petition that can be signed and sent off-line. They can then send a cyber postcard to friends encouraging them to join the campaign.

The planned 10 million messages represent the ten years since the international scientific community issued its first warning about the threats the world faces from climate change – one million for each year that governments have failed to take action, according to the coalition.

In 1990, the UN Intergovernmental Panel on Climate Change (IPCC) issued its first scientific report on rising levels of global warming gases and their implications for the future. Although impacts characteristic of global warming have since become increasingly evident, governments have failed to act, and many of the leading polluters, such as the United States, have allowed their emissions to increase while pressing for effective international measures to be watered down.

At November's climate summit, officially the Sixth Conference of the Parties to the UN Framework Convention on Climate Change, governments must meet their deadline for finalising rules for operating the Kyoto climate treaty – the only international agreement for reducing emissions of global warming gases from the industrialised world. Failing to agree in November would make it questionable whether nations would be able to achieve the Kyoto timetable for reducing emissions in the coming decade. This would set the worst possible example for stopping global warming in the 21st century.

Visitors to www.climatevoice.org can sign on to the following text:

'I believe the pollution that causes global warming should be reduced. Otherwise the impacts could be devastating for people and creatures around the world.

'I don't think we should be running these risks when solutions are at hand.

'Please use the opportunity of November's climate summit in The Hague, Holland:

- to reduce the country's global warming pollution
- to agree a fair and effective Kyoto global warming treaty.'

FoE's gathering storm

In September Friends of the Earth launched a new report, *Gathering Storm,* which links hard climate data with harrowing eye-witness accounts from some of the world's worst weather disasters for the first time. It includes eyewitness accounts from the Mozambique floods and this summer's heat wave in Eastern Europe. One survivor tells of finding severed limbs after Hurricane Mitch swept through South America in 1998.

The report aims to recapture the public's attention, providing evidence that climate change is happening, and, graphically, that it is killing people. FoE Director, Kevin Dunion, expressed fears at the report's launch that environmental pressure groups had lost touch with grass roots supporters because they had been heavily involved in negotiations at global government climate talks, such as the Kyoto conference in 1997. He saw the need for FoE and other campaigning environmental groups to get back to fulfilling their obligations of keeping issues in high public profile.

Friends of the Earth also announced a major protest action at the climate summit in the Hague. Thousands of demonstrators will use sandbags to build a dyke around the conference. They hope that the stockade will convince governments to sign up to legally binding pledges to safeguard the environment.

Ice core and glacier evidence point to global warming

In a study published in *Science* and widely reported in the press, evidence that the Earth is warmer than at any time in the past 1,000 years has been found in Himalayan ice cores.

An international team of scientists drilled three cores each of about 150 metres into the Dasuopu glacier, an ice field on the flank of Xixabangma, a peak that rises to 26,293ft on the southern rim of the Tibetan plateau. They analysed the cores – the highest climate record ever retrieved – for dust particles and several chemical isotopes, which can be used to estimate air temperatures. Most of the ice in this region is deposited by monsoon rains, when warm, moisture-laden winds blow off the Indian Ocean each year. Lonnie Thompson, a professor of geological sciences at Ohio State University and leader of the expedition, which included Peruvian, Russian and Chinese researchers, said the study provided a unique insight into global temperatures over many centuries.

The ice cores show years when the monsoon rains failed to arrive, such as the six years beginning in 1790 when the resulting drought killed more than 600,000 people in one Indian territory alone.

The amount of dust trapped in the ice cores has quadrupled in the 20th century, with concentrations of chloride doubling for the same period. That suggests an increase in the dryness of the air and the rate at which land was becoming desert. That the warming is in part, if not totally, driven by human activity, is said to further confirm findings from Kilimanjaro in Kenya, where a study earlier in the year revealed that the glaciers on Africa's highest mountain had lost at least 75 per cent of their ice since 1912.

Warming of the North Sea

As the WWF was launching its Oceans Recovery Campaign in September demanding the government give greater protection to fish stocks, a widely reported study from *Science* indicated a warming of the North Sea and its conse-

quences for sea life. Usually found in the balmy Mediterranean, red mullet are migrating north, as the North Sea is undergoing a rapid 'regime-shift' from a temperate sea to an almost sub-tropical one, according to some marine biologists. In the last decade the amount of plankton has risen 10-fold (90-fold in the winters), and the level of life on the seabed has doubled. Oceanographers have estimated that in six years the winter sea temperature around the Faroes has risen by 4º centigrade.

Red mullet, previously only found as far north as the English Channel, are now breeding off the west and east coasts of Scotland, and other warm-water species, such as anchovy and octopus, have been found in the Channel in the last year. Observations of increasing bio-diversity in the North Sea represent a very sharp change, almost certainly linked to global warming. Plankton absorbs huge amounts of carbon dioxide and supports almost all other forms of life. The number of creatures on the bed of the North Sea, primarily starfish and worms, has thrived as a result of the increased plankton.

But the changes may not benefit the fishing industry overall. Cod and whiting are being driven out and many of the new fish may not be so valuable as the old ones. And the North Sea's life as a sub-tropical ocean may not last long. The melting of the Arctic ice cap, predicted by some to disappear by 2040, is likely to disrupt weather patterns so much that the northeast Atlantic is actually expected to grow colder.

New key adviser on sustainable development

Jonathon Porritt has been appointed as the Prime Minister's key advisor on sustainable development. He will chair the new Sustainable Development Commission, which will promote sustainable development across all sectors of the economy and build agreement on ways of accelerating progress.

Announcing Jonathon Porritt's appointment, the Prime Minister said: 'Jonathon has been one of the most prominent voices promoting green and quality of life issues over the last 25 years. He is deeply committed to sustainable development and has been particularly influential in working with the business community to take the agenda forward.'

Vic Cocker CBE is to be the first Chair of the Waste and Resources Action Programme (WRAP), the joint DETR/DTI programme to promote sustainable waste management announced in the recent Waste Strategy. He is leading a specialist team developing this major new programme, which will be formally launched in November.

Mr Cocker, retiring Chief Executive of Severn Trent Water, has agreed to head up the independent not-for-profit company, which will be responsible for delivering the new programme. Once WRAP is formally established, Mr Cocker will become its first chair.

He is supported by two industry experts, Ray Georgeson MBE and David Dougherty, who are developing the programme in the run up to the launch.

Creating an environmental vision

A response by the Institution of Environmental Sciences to the consultation by the Environment Agency

A long-term vision for the environment is essential if man is to survive on the planet let alone maintain and improve the present patterns of living. Existing environmental deterioration will take many years to reverse and it will take even longer to develop sustainable policies that will cope with population increase, growth in urbanisation and increased industrial activity.

These policies will need to be challenging and dramatic, probably far more so than the present range of targets for improvement that have been set. Present targets have been set for varying periods from ten to twenty years but the 'improvements' targeted, even if achieved, will not eliminate the fundamental problems and achieve long-term sustainability.

Fifty years would be a more realistic time scale for the vision although shorter term planning will still need to form an essential part. The pace at which change can be envisaged is difficult to forecast since it will depend on peoples will to change and the influence of the social and economic forces that will enable it to happen on a global scale.

The Environment Agency has a central role to play in the context for the United Kingdom. Whilst regulation will continue to be needed, leadership and direction will be essential. The Agency will need to work in close collaboration with the DETR to achieve the implementation of the new policies. Partnerships will be needed involving local authorities, commercial organisations, the professions and the general public and they will need to operate at national, regional, district and local level. Both the Agency and the DETR have operational structures in place that can enable this lead to be given.

The themes adopted in the consultation document cover the principle objectives and outcomes and the key environmental issues. Whilst the reduction in greenhouse gas emissions probably has the highest immediate priority, all the key issues need to be addressed urgently if sustainability is to be achieved. The maintenance of social and economic progress is an objective which should be maintained but the form of this progress may require some radical rethinking!

The co-operation of business and industry will be an essential part of any successful progress which will require innovative techniques in manufacturing and the development of new economic ideas. Co-operation can only be achieved by persuasion (education) and by involvement and this is equally true of the contribution required from the public generally.

The Agency will need to become a more dynamic and pro-active body and there are signs that this is occurring already in some areas. More co-ordination and encouragement of effort will probably be required in the regional context and also at more localised levels. This will ensure that policies are implemented consistently at *all* levels. The present proposals for change seem to be in the right direction.

The Institution looks forward to the production of the final vision and will be interested to respond on short to medium 'frameworks for change'.

This section of the Journal is in response to the growth of news, information and activities which underpin the Education Committee of the IES.

Special prominence is given to student activities and projects, national and international initiatives, campus developments and research in order to capture the diversity, wealth and vitality of modern environmental education.

Readers are invited to send articles and letters to:
- ***Derek Blair, School of the Environment, University of Sunderland. Benedict Building, Sunderland SR2 7BW.***
- ***Tel: 0191 515 2737.***
- ***Fax: 0191 515 2741.***
- ***E-mail: derek.blair@sunderland.ac.uk***

A green and active summer?

As students return to their campuses, it is still too early to assess their involvement in environmental activities over the summer, whether travelling overseas, working in their local communities or pursuing their research projects.

Whatever the weather pundits make of the summer temperatures this year, there were plenty of simmering opportunities available to environmentalists, such as campaigning against world trade hegemonies, opposing GMO experiments, and getting involved in the transport crisis. In many cities, like Nottingham, more mundane but fundamental activities through University Community Action programmes involved many students on the usual practical conservation and social regeneration tasks which provide so much good work-related experience.

No doubt some UK university environmental degree programmes were represented, unofficially, in the crowd of activists at the Prague meetings of the WTO which started on the 26th September. The success of the Seattle and London demonstrations caught the imagination of student activists who saw Prague as another opportunity to vent their angry emotions. Environmental organisations off campus but with strong support from students on campus linked up with other groups by electronic means, sometimes it was claimed with more extreme and politically sinister aims, engendering concern with policing authorities. Reclaim the Streets started out as a single-issue radical direct action group focusing on urban transport policy but now has world trade in its environmental portfolio. No doubt some aspiring graduate will find the contrast with Surfers against Sewage, another student oriented action group, which has remained true to their original focus, worthy of a research study.

The court case of Greenpeace was another publicly prominent example of environmental action, raising some challenging legal (as well as environmental) issues, such as when is Non Violent Direct Action (NVDA) criminal, an issue which has bedevilled student environmentalists in the traditionally more violent Hunt Saboteurs and some Animal Rights groups.

In contrast, and not surprisingly, the September public outcry on fuel prices in the UK received no support from environmental activists or campaigners. The introduction of the accelerator levy by the Conservatives – one cause of escalating costs – had been conceived as an environmental tax based on emissions invoking the polluter pays principle. So when Labour abolished the accelerator principle but maintained the high level of tax on fuel to fund investments in health and education rather than transport, environmentalists were angry but for different reasons from the road lobby and, therefore, were not part of the alliance. Again another worthy student research topic!

How far such prominent public environmental actions, globally or locally, have helped the problematic recruitment onto environmental courses is not possible to determine yet. But they cannot have done any harm. A traditional attraction for young people to environmental courses is their strong feeling about topical issues whether that be globalisation in its many complex subtleties, GMOs or a local bypass. For young people, environmental action can range from practical conservation, recycling projects to full blown campaigns to halt or oppose something incurring often legal outcomes. The latter, of course, has given environmentalists a reputation for being anti-progress

University environmental education has a number of aims. A prime one is to improve knowledge and understanding of environmental systems, phenomena and issues, depending on the disciplinary foci of the course. Traditional environmental scientists viewed this scientific education as a cerebral exercise, as Professor O'Riordan described it in his first book *Environmentalism* in 1981, and were uncomfortable with the notion of the environmental curriculum generating behavioural change as the prime aim of their education. But students have emotional views about their curriculum which in certain conditions and in certain individuals are, and can be reasonably expected to be, transformed into behavioural action. In contemporary environmental courses now it would be difficult and unwise not to embrace the nature, content and vitality of environmental action.

With another academic session underway, there are, therefore, many new case studies to refresh the vitality of environmental lectures, to reinvigorate the greening actions on student campuses, and to prove that the cerebral and emotional domains of environmental education can be married beyond.

National centre

A new national centre for Geography, Earth and Environmental Sciences has been established at the University of Plymouth. One of its first projects is to provide discipline specific gateway for accessing databases, pedagogical and multi-media resources and remotely sensed information for use in teaching and research. For further details see: **http://www.gees.ac.uk**

At the global level, Andrea Durbin and Carol Welch of Friends of the Earth International Programme were at Prague. They are also the co-authors of an interrogation of how far the International Monetary Fund and the World Bank is committed to sustainable development beyond rhetoric. For, in the eyes of many environmentalists, the IMF and World Bank continue to favour export led growth, exploitation of natural resources, weakening the sustainability of local and indigenous communities. Plenty of research material there for a green and active winter.

Sources

Andrea Durbin and Carol Welch, *Greening the Bretton Woods Institutions* at: **http://www.foreignpolicy-infocus.org/briefs/vol5/v5nbretton.html**

Martin Day (1998) *Environmental Action* (Pluto Press) ISBN 0-7453-1190-3. Also: **http://susdev.eurofound.ie**

University of Nottingham Community Action. Tel: 0115 935 1136 E-mail: **community action@nottingham.ac.uk**

The Casella/John Connell Memorial Prize

A new annual award is being made available to Institution student members and students on Institution accredited courses. The award, worth £500, is contributed jointly by the IES and Casella.

At present the Institution sum is most generously sponsored by our founding director, Professor John Rose, in memory of John Connell, founder member and for many years Honorary Treasurer of the Institution.

He may be better known to the general public as the founder of the Noise Abatement Society. In this latter context it is most appropriate that the award is for the best-submitted essay or project report dealing with a noise related topic.

Details of the award competition, which is also open to students at Colchester Institute, will be published in the next issue of the Environmental Scientist and will also be circulated to the course leaders of Institution-accredited courses.

IES Information

Spencer's Guide to the UK Environmental Industry 2000

Spencer's Guide is a leading guide to suppliers in the environmental pollution control industry. It includes a wealth of information including profiles of individual companies (classified by sector for easy reference) together with detailed, informative articles and opinions on topical issues.

The Guide is sponsored and supported by a number of environmental bodies including the Institution.

A special 12½ per cent discount on the list price is available to Institution members. Copies can be obtained from:

BM Publishing,
East Common, Gerrards Cross,
Buckinghamshire SL9 7AG.
Tel: 01753 891000
Fax: 01753 880342
E-mail: bmpub@hotmail.com

Please quote your IES membership number when sending your remittance of £38.00 (£35.00 plus £3.00 postage and packing) to the above address. Cheques or credit card details are accepted and despatch will be made on the day of receipt of payment.

Obituary

It is with sadness and regret that we have to record the death of Victoria Barker, one of our younger members. Our sincere sympathy is extended to her family.

New members

The IES is pleased to welcome the following to membership of the Institution:

Mr G. D. Annerson	Sales Engineer, Ashton Seals Ltd
Mr L. E. Armon	Environmental Health Technician Royal Air Force
Mrs J. R. Blumhof	Principal Lecturer University of Hertfordshire
Ms S. E. Cartwright	Senior Environmental Scientist STATS Environmental
Mr J. A. Collins	Environmental Engineer Cheshire County Council
Mr L. D. Evans	Recent Graduate University of East Anglia
Mr R. A. Francis	Recent Graduate De Montfort University
Mr A. J. Hall	Environmental Assessment Engineer Environmental Risk Services Ltd
Mr I. M. Harrison	Student, University of Leeds
Mr M. A. Harwood	Radiation Survey Team Leader DERA Radiation Protection Services
Mr P. S. Hough	Environmental Scientist Johnson Poole & Bloomer
Mr J. Hayat	Executive Officer, DETR
Mr B. Lowery	Environmental Health & Safety Adviser, British Nuclear Fuels plc
Mr G. R. Pitt	Recent Graduate Cheltenham & Gloucester College
Miss A. J. Richardson	Recent Graduate Manchester Metropolitan University
Mr R. M. Sanders	Senior Consultant Aon Risk Control Consultants
Mr C. D. A. Sproule	Planning Officer University of Manchester
Mr A. Thompson	Environmental Analyst, A. H. Marks
Mr C. A. Walker	Environmental Consultant Carl Bro Aquaterra
Mr M. H. Wilson	Geoenvironmental Engineer URS Thorburn Colquhoun
Mr A. R. York	Postgraduate Student University of Bath
Mr M. Zwinderman	Research Associate Napier University

The Hon. Secretary's news desk...

Consultation responses

Two further consultations have taken place and responses submitted during the past two months.

The first, by the Environment Agency, entitled *Creating an environmental vision,* dealt with the identification of long-term environmental issues and the place of the agency in the control and resolution of these. The Institution's response is on page 15.

The second was by the Energy and Natural Environment Panel of Foresight (a body constituted by the DTI). This also dealt with their vision of the important issues to which they should devote their attention. A pro forma questionnaire was completed and returned.

Volvo prize

Together with the announcement of this year's winners (four researchers on world energy needs will share SEK 1.5 million) we have received the invitation for nominations for the 2001 Volvo Environment Prize. This is awarded for outstanding innovations or discoveries that have a direct or indirect significance in the environmental field and are of global or regional importance.

If you have such a project (completed) that you consider merits attention at this level it should be submitted to the Institution for consideration during November. The closing date for nominations is 1st December 2000.

Nominations for Council

It is now time to make preparations for the elections to Council vacancies in 2001 which will take place at the Annual General Meeting on 7th March. Below you will find a nomination form for membership of Council. All corporate members are eligible to serve and may become candidates once proposed and seconded by two other corporate members.

In order to allow adequate time to prepare voting lists (if necessary) for issue with the AGM papers all nomination forms must be returned to the Hon. Secretary no later than Friday 8th December 2000.

PP4SD

The DETR/WWF sponsored project on Professional Practice for Sustainable Development has seen the publication of a second booklet, Book 2: *Developing cross-professional learning opportunities and tools.* The project aims to encourage and support the integration of sustainable development principles into professional practice and this booklet is an aid to training officers and others seeking to set up training courses or CPD events.

Copies of Book 2 (and also Book 1: *Building support within the profession,* the introductory booklet) are available from the Institution free on application.

Journal content

Readers may be interested to note that due to the large volume of material currently available we have produced a 'bumper' issue, 25 per cent larger than normal.

The environmental scene must be 'warming up'!

RAF

Election of members to Council 2001

I ..... **Membership No** .....

(PRINT NAME)

nominate ..... **for election to Council of the Institution of Environmental Sciences.**

Signature *(proposer)* .....

Seconded by ..... **Membership No** .....

(PRINT NAME)

Signature *(seconder)* .....

I ..... **hereby confirm that I am willing to stand for election to Council as proposed.**

To be returned by Friday 8th December 2000 to:
The Hon. Secretary, IES, PO Box 16, Bourne, PE10 9FB.

Forthcoming conferences, courses and other events

10 November 2000
The Expert Witness Conference 2000
Church House, London £135
One-day conference
Details: Bond Solon, 13 Britton St, London, EC1M 5SX.
Tel: 0800 731 2095
Website: **www.bondsolon.com**

12-16 November 2000
Environmental Sciences in the 21st century
Nashville Convention Center, Nashville, Tennessee, USA
Tel: 850 468 1500 Fax: 850 469 9778;
http://www.setac.org/nashvle.html

13 November 2000
Health & Sustainable Transport – Making the Links
Kings Fund Conference Centre
Cavendish Sq, London £155- £220
Integrating sustainable transport & health policies nationally to achieve common objectives
Details: Landor conferences, Quadrant House, 250 Kennington Lane
London SE11 5RD
Tel: 020 7582 0128
Fax: 020 7587 5308

14 November 2000
Sustainability in Public Service
Lord's Cricket Ground, London
£195 – £295
One-day conference & exhibition
Details: Partnership Media Group, Freepost, NWW 1461,
Manchester, M1 9NB
Tel: 0800 542 9590
www.greeninggovernment.com
e-mail: spsdel@govnet.co.uk

28 November 2000
Health & well being: does our environment matter?
NSPCC National training centre, Leicester £95 – £110
One-day seminar on the relative importance of key health determining factors
Details: Seminar Secretary, MRC Institute for Environment & Health
University of Leicester, 94 Regent Rd, Leicester LE1 7DD
Tel: 0116 2231614

19-23 March 2001
Third international conference on urban air quality
The Poseidon Hotel, Loutraki, Greece
First announcement and call for papers
Details: Jasmina Bolfek-Radovani. Conferences Dept, Institute of Physics, 76 Portland Place, London W1N 3DH
http://www.iop.org/IOP/Confs/UAQ

Diary dates 2001

15th January	GP Committee	13.00
7th March	Education Committee	10.30
	AGM and Council	13.30

Credible ISO14001 certification

Occasional papers available now from IES

Waste management

- From waste to woods – planting trees on landfill
- From waste to woods: trees on landfill and their place in landscape
- Enhanced landfill strategy
- Waste minimisation: the long term benefits
- European study on EISs of installations for the treatment and disposal of toxic and dangerous waste
- Mercury fall-out from crematoria

Education and training

- Environmental courses undergo a quality assessment
- Student environmental declaration
- On-line information systems in environmental sciences courses
- Global environmental charter and network for students

Business and industry

- The tourism challenge
- The tourism debate and environmental scientists
- Enjoying environmental science as a career
- The Brent Spar and the best practical environmental option

National and local government

- Transport policy, environmental pressures and the new UK government
- Local Agenda 21 – making it work

Price: £5 per paper including p&p (£3 per paper for members)

Contributors

The *Environmental Scientist* aims to provide a forum for members' contributions, views, interests, activities and news, as well as topical feature articles. Articles up to 3,000 words should be submitted to the Editor, *Environmental Scientist,* PO Box 16, Bourne, PE10 9FB, three weeks prior to publication in the last week of January, March, May, July, September and November.

Views expressed in the journal are those of the authors and do not necessarily reflect IES views or policy.

Advertising

Advertisements should be submitted to reach the Institution by the 7th of the month of publication.
Rates: £50 (half page); £25 (quarter page); £12.50 (eighth page). Full page adverts at £100 can only be accepted under special circumstances, subject to space being available.

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