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Planning control

Sustainable development (SD) was defined by the Brundtland Commission as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It is the most commonly cited definition, but it can interpreted in a number of ways, depending on your point of view. Those differences emerge from the government's draft national planning policy framework (NPPF) for England (p.5). SD is at the heart of the NPPF, as it makes a presumption in favour of SD the overriding principle of a new planning process. The NPPF offers a split definition of SD: *sustainable* means "ensuring that better lives for ourselves doesn't mean worse lives for future generations", and *development* means growth. The latter seems to take precedence, however.

The NPPF states that every effort should be made to identify and meet the housing, business, and other development needs of an area. The framework advises decision-takers at every level to assume that the default answer to development proposals is yes. Development should not proceed if it compromises the framework's key SD principles, says the NPPF, but these only provide protection for the most environmentally sensitive areas. The removal of the national brownfield target and changes to green-belt policy suggest that environmental concerns will take a back seat to growth. This is further illustrated by the absence in the NPPF of any mention of environmental limits and thresholds.

If the NPPF allows unrestricted development, where natural capital is eroded in the name of economic growth, we may wish more emphasis had been placed on sustainability

The existing planning process undoubtedly needs changing, having stifled much-needed development for years through a mix of complexity, bureaucracy and self-interest. But we should be careful what we wish for. If the streamlined approach of the NPPF creates a system that allows unrestricted development, where natural capital is eroded in the name of economic growth, we may wish more emphasis had been placed on the sustainable part of SD. It's not too late to have your say.

Paul Suff, editor

Short cuts

The cloud saves energy

Using virtual IT infrastructure could help cut carbon emissions from large US organisations by 85.7 million tonnes every year and reduce costs by $12.3 billion by 2020, according to new research from the Carbon Disclosure Project. The research examined 11 multinational companies' use of cloud computing (using multiple server computers via a digital network), including Aviva, Boeing, Citigroup and Dell, as well as interviewing providers of cloud services. It calculated that a food and drink firm, with annual revenues of $10 billion, could reduce its carbon dioxide emissions by 25,000 tonnes in five years by moving human resources applications to a private cloud. The research also suggests that such a project could achieve payback within two years. While interviewees cited reduced costs as the key driver for moving to cloud computing, many executives are now coming to view cloud computing as a way to switch to a low-carbon business model, says the Carbon Disclosure Project.

British Gas Business fined £1 million

British Gas Business has been fined £1 million by Ofgem for misreporting the amount of electricity it supplied under the Renewables Obligation (RO). The RO requires energy providers to provide evidence of the amount of electricity supplied from renewable sources as a proportion of the total electricity they supply. British Gas Business, through inadequate procedures and its misinterpretation of the scheme's reporting requirements, underestimated the amount of electricity it was supplying by 0.62% a year for seven years. To rectify the error the firm is now retiring 87,000 RO certificates, with a market value of £2.8 million. Ofgem said that the level of the fine would have been much higher, were it not for the fact that British Gas Business reported its error and has taken action to correct its mistake.

GHG reporting adds up

Corporate disclosure The benefits of greenhouse-gas (GHG) reporting are much greater than the government claims they are, says a new report highlighting the flaws in the impact assessment (IA) that accompanied Defra's recent consultation on corporate GHG reporting.

According to research commissioned by the Aldersgate Group, the Co-operative Group, Christian Aid and WWF, the IA overestimated the total costs of mandatory carbon reporting for large companies by up to £4,600 million (more than 420%).

The environment department estimates that the total costs over 10 years of mandatory reporting for large companies could be as much as £6,025 million and the total benefits a maximum of £1,355 million. But the report (www.lexisurl.com/iema9620) claims the IA did not factor in the benefits that carbon reporting would bring over time, while some of the cost assumptions are questionable.

"Defra's IA has taken a fairly narrow focus when looking at benefits, rarely taking into account wider social and environmental benefits that arise," says the report. It highlights the cost assumptions made by Defra, which it claims are inflated. "By only taking into account the activities that would be required for mandatory carbon reporting and making widely differing day rates more consistent, this reduces associated annual costs for a large company to a range of £2,460 to £7,684 in year zero, compared with £5,820 to £31,120 in the Defra IA."

Lindsay Harris, the Defra official leading the team looking at GHG reporting, told the recent WSP/*the environmentalist* roundtable (p.15) on GHG reporting that the department is "conscious of the limitations" of the IA. "I would accept that our IA probably does under-catch the benefits," he said.

The Aldersgate Group findings suggest that the mandatory carbon reporting would be good for business. Paul Monaghan, head of social goals and sustainability at the Co-operative Group, says: "Mandatory reporting would help companies to manage and reduce their emissions and help investors to factor carbon risk into their investment decisions."

Agency applies civil sanctions to boost funds for environment projects

Regulation The Environment Agency (EA) aims to increase investment in local environment improvement schemes by using civil sanctions rather than a criminal prosecution to punish firms that admit regulatory breaches.

On 21 July, the agency announced that it had accepted a proposal from London-based engineering company Invensys to pay more than £21,000 towards environment projects after breaching packaging waste regulations.

The case is the first example of a UK regulator using new civil powers introduced in January. They allow government enforcement agencies to take action against less serious legislative breaches without the expense of criminal proceedings. Rather than just imposing large punitive fines, the sanctions focus on ensuring organisations repair the damage caused by the environmental offence. They also free up agency resources to pursue more serious offences through the courts. "Civil sanctions allow us to secure regulatory compliance from organisations, eliminate any financial gain from non-compliance and get them to react responsibly to the offending," explained the EA's director of environment and business, Ed Mitchell. "Organisations can make reparations that focus on environmental improvements and providing benefits for the local people affected by the offences."

Since January, the EA has received 30 offers from dutyholders looking to take responsibility for their regulatory breaches.

The acceptance of Invensys' offer was followed by news that the EA has teamed up with Crimestoppers to provide a new way to report environmental crimes anonymously. Businesses or members of the public that do not wish to give their name can now call Crimestoppers on 0800 555 111 or use an online form to report crimes such as the illegal dumping or exporting of electrical waste (www.lexisurl.com/iema9621).

Positive approach to planning is unsustainable

Planning Environment groups have lambasted the government's proposed approach to planning as not providing sufficient protection for the UK's green spaces.

The draft national planning policy framework (NPPF) cuts 1,000 pages of complex policy to just 56 pages of top-level guidance. At its centre is the government's concept of a "presumption in favour of sustainable development". It makes economic growth crucial to sustainability, arguing that "without growth, a sustainable future cannot be achieved". The framework clearly states that local authorities must take a positive approach to planning, with the default position being to "approve all individual proposals wherever possible".

In launching a 12-week consultation on the NPPF, planning minister Greg Clark argued that the framework provides adequate protection for the natural environment, but others criticised the government's pro-growth approach.

Friends of the Earth described the framework as a "developers' charter" and Dame Fiona Reynolds, director-general of the National Trust, warned that the proposed changes would turn the planning system on its head.

While welcoming the proposals for a more streamlined planning system, IEMA agreed that questions remain about what the government views as sustainable development. "There is a clear emphasis being placed on the approval of planning applications, with the risk that environment impacts will continue to be traded off against the potential for economic and social gains," said executive director of policy Martin Baxter.

The CBI, however, said the NPPF shows that environmental sustainability is compatible with economic growth.

Government fails to make green taxes work

Taxation The government is missing key opportunities to influence behaviour and deliver better environment protection, because environment taxes are not being managed effectively, according to the House of Commons Environment Audit Committee (EAC).

In its report examining the 2011 Budget and the government's approach to environment taxes, the EAC warns that such levies are failing because businesses and the public do not understand them.

To be effective such taxes need to be straightforward, clearly signalling the desired behavioural change, and be demonstrably fair so that momentum can be gained for higher levels of taxation, says the committee. However, it argues that recent Budget decisions have created a perception that environment taxes are "just another means of raising revenue". The EAC highlights, in particular, decisions to cut a penny from fuel duty rates and to not create more incentives to change to low-carbon alternatives as missed opportunities to be clearer about the long-term need for sustainable transport.

It is equally critical of proposed changes to air passenger duty, which it says will do nothing to make it a more effective tax, and the government's definition of subsidy in relation to nuclear development, which it says does not hold up to scrutiny.

The EAC report was followed by figures from the Office for National Statistics revealing that in 2010 green taxes formed a smaller proportion of the overall tax burden than in 2009, despite a government pledge to increase such levies.

Short cuts

Water is biggest UK risk

UK water supplies are near their limits and are most at risk from climate change, according to the second assessment report (www.lexisurl.com/iema9622) from the Committee on Climate Change's adaptation group. It says that, although only 8% of water resource zones in England are currently at risk of falling short of demand during a severe drought, this could increase to around 45% by 2035 without remedial action. The committee reports that water companies have not yet made any specific investment in climate adaptation to tackle potential shortfalls in water supply. Delay in investment could lead to higher costs in the future or increased risks of water shortages. The report recommends embedding climate risks more fully into decision-making as, at the moment, there is no evidence that they are fully incorporated into some major strategic decisions.

Raw materials for EU's green technologies

MEPs have approved a draft report on the European Commission's raw materials strategy. It demands that the commission establish a permanent task force to assess Europe's need for raw materials used in a wide range of products. MEPs want the main focus to be on rare earths, renewable energy, high-tech industries, and the defence and automotive sectors. The commission has identified a list of 14 important materials, many used in the manufacture of green technologies, such as cobalt, which is used in lithium-iron batteries. Meanwhile, the commission has approved funding for 183 new projects under the LIFE+ programme, the EU's environment fund. Overall, they represent a total investment of some €530 million, of which the EU will provide €244 million. The money will fund 64 nature and biodiversity projects, 104 related to environment policy and governance, and 15 focused on information and communication.

IN PARLIAMENT

Energy Bill: bus in ditch alert!

Alan Whitehead MP for Southampton Test

When is a law not a law? Most people would quite reasonably think that once a Bill has passed through parliament and has received royal assent, it is law. In practice, this is sometimes true, sometimes not. This is because some Bills carry with them a baggage of "secondary legislation" – that is, a raft of measures, given a go-ahead in principle in the Bill but awaiting the sometimes quite detailed process of drafting regulations, guidance and schedules.

The Energy Bill is one such measure. In fact such a description is rather an understatement, because if you had to describe it you might liken it to one of those buses going generally in one direction, but so overloaded with people, parcels and other goods that progress is slow and often confusing. For the Energy Bill, which heralds the introduction of the Green Deal on energy efficiency among other things, is dripping with secondary measures. Even after the Bill to all intents and purposes is complete, it is the subject of secondary legislation, and it is going to be a race against time to get all the pieces of the jigsaw fitting together in time for the very specific autumn 2012 start date for the Green Deal.

But now there's a new problem: the overloaded bus has now become firmly stuck in a pothole.

All the frenetic preparations were predicated on the queen giving royal assent to the Bill before going off to Sandringham for her holidays – and instead MPs have gone on their holidays without time being found to complete its passage, and the multitude of bits of secondary legislation are now seriously bogged down. Whether it was News International or over-punctilious bail-law judges filling parliament's time, the fact is that parliamentary business managers have failed to give the Bill the slots it needs to complete its passage. And, so far, there's no sign of a slot being found in September. At that point, the Green Deal is in real trouble.

EMR to provide stability for low-carbon investors

Energy The government's proposed reforms to the electricity sector have been broadly welcomed as positive steps towards decarbonising the UK's electricity supply.

The five-pronged approach to Electricity Market Reform (EMR), set out in a white paper published in July, focuses on actions to support the investment needed to move to low-carbon electricity and measures to ensure long-term security of supply. The carbon floor price and long-term feed-in tariff contracts for difference (CfD) are to play a key role in reducing risk and uncertainty within the renewable energy and nuclear sectors, offering investors a more attractive proposition.

"Low-carbon technologies cost more to build than gas power stations, but have much lower running costs. As such they are a very different investment proposition. CfDs offer the prospect of more stable prices," confirmed Dr Rob Gross, a co-director at the UK Energy Research Centre, welcoming the announcement.

Commitments to create an emissions performance standard limiting carbon dioxide production to 450g CO_2/kWh for coal-fired power stations, but only requiring new gas stations to be carbon capture ready, caused more debate. While shadow energy secretary Meg Hillier argued that the measure could result in a new "dash for gas", the Carbon Capture and Storage Association described the move as "a tremendous step forward".

Industry bodies the EEF and the CBI both welcomed the paper's proposed actions, but warned of the potential impacts on energy bills for firms, especially those in energy-intensive industries. "The government still needs to spell out what it thinks the final bill for all of its electricity market reforms will be," argued CBI director-general John Cridland.

In response, DECC published a provisional impact assessment (IA) of the cost of energy and climate change policy on industry. The figures indicated that such policies were likely to add at least 3% to energy bills for high-energy-consuming industries during 2011, but that

EMR policies could result in an 8% drop in retail electricity bills by 2030 compared with bills without EMR policies.

The EEF's director of policy Steve Radley described the IA as a marked improvement on previous efforts, but he warned that more needed to be done. "There needs to be genuine comparison of what energy-intensive manufacturers in the UK and abroad pay for electricity," he said. Others argued that the government needs to put greater emphasis on the benefits that organisations can reap by greater energy efficiency. Stephen Barker, head of energy efficiency and environment care at Siemens, said: "Most organisations could reduce their costs by 20–30% using affordable energy-efficiency measures."

Delay for Energy Bill

DECC was forced to deny accusations that the government was trying to shelve the Energy Bill after it failed to receive royal assent before the summer recess (see In parliament, left).

A DECC spokesperson blamed congestion in the House of Commons as the reason for the delay, and energy minister Greg Barker confirmed that he expected the Bill, which outlines details of the Green Deal, would be passed in early autumn.

"I do not expect this will make any change to our plan to bring in the Green Deal in October 2012 and it remains our intention to consult on secondary regulations in the autumn," he said.

"It's all about meeting the needs of our customers. My team are always on hand to provide advice and guidance and make the necessary practical arrangements too."

Kayley, RRC Customer Services Manager

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Agency not ready for third-party assurance

Regulation Plans for third-party auditors to provide the Environment Agency (EA) with assurance that firms are fulfilling their permit conditions are being postponed, possibly for three years, until the start of the regulator's 2015–18 charging period.

The agency had planned to roll out its EPR (Environmental Permitting Regulations) assurance schemes from April 2012 as part of an overhaul of site regulation, but they may now not start until April 2015. "Implementation of the schemes has been revised due to the potential impact on our charging scheme," Juliette Willems from the EA's site regulation team told *the environmentalist*. "The new charging scheme is due in April 2012 and we will not be ready to roll the schemes out by then, partly due to restructuring within the agency, so they may need to wait until the next charging scheme, which is due to begin in April 2015."

Under the plans, branded as EMS+, third-party auditors will assess a site against a sector-specific compliance protocol drawn up by the agency, with the aim of reducing regulatory inspections of sites with a good compliance classification score and which are already subject to external auditing of their environment management system. The process has implications for the charges levied on regulated sites, as it should mean lower charges and fewer visits.

The revision means that the start of the pilots in the cement, food and drink, and waste sectors, which were to begin from September, have now been postponed by at least a month, and they may now last for up to 18 months. They will also involve more operators, with 20 now ready to trial the new approach. "We want to ensure the trials aren't rushed. Some sites will now get two visits rather than one, which will hopefully provide us with robust evidence as to whether or not the approach works and is of benefit to all those involved," explains Willems. She says that the delay will also give the agency time to amend the proposed EMS+ checking tool.

The EA says it may try to roll out some schemes before April 2015 should the pilots prove successful, although this will depend on overcoming any barriers from charging arrangements.

Martin Baxter, executive director of policy at IEMA, believes the delay could be positive: "IEMA supports evidence-based policy, and the longer pilots will hopefully provide strong support for EMS+. They need to demonstrate whether firms and certification bodies can rise to the challenge of delivering regulatory compliance when the regulator steps back from making regular inspections."

Meanwhile, as part of the government's review of all existing 278 environmental regulations, which is due to begin on 1 September 2011, Defra has formed an industry-led group to help assess the need for regulations. The Environmental Industries Commission has welcomed the creation of the so-called "Red Tape Challenge Sounding Board", although it is wary that any change to existing regulations could pose a risk to environmental protection.

CASE LAW

Lexis®PSL

When is a SEA required?

The Court of Appeal (CA) has dismissed a challenge brought by Central Craigavon, owners of the Sprucefield Shopping Centre in Northern Ireland, against a planning application for development. The main ground of appeal was whether a draft planning policy statement (PPS) constitutes a "plan or programme" under the terms of the EU Directive on the assessment of the effects of certain plans and programmes on the environment (2001/42/EC) – so, whether it was subject to a Strategic Environmental Assessment (SEA). The validity of the PPS was also challenged unsuccessfully.

Crucially, from an environmental viewpoint, the appeal by Central Craigavon focused on the SEA issue, arguing that in formulating the draft *Planning Policy Statement 5: Retailing, town centres and commercial leisure developments* (PPS5), the Department of Environment (DoE) in Northern Ireland had not complied with mandatory SEA requirements under EU or domestic law. SEAs seek to confirm that a PPS has been systematically assessed and revised during its preparation. They also ensure that the policy contributes to international sustainable development objectives.

Directive 2001/42/EC notes in recital 4 that: "Environmental assessment is an important tool for integrating environmental considerations into the preparation and adoption of certain plans and programmes which are likely to have significant effects on the environment and the member states, because it ensures that such effects of implementing plans and programmes are taken into account during their preparation and before their adoption."

The CA held that draft PPS5 could not be considered a "plan or programme" within the meaning of the Directive, which would require environmental assessment by virtue of article 3. It stated that draft PPS5 currently has no legal status until executive committee approval is obtained. The appellant's argument failed on this ground.

Nevertheless, the case highlights an important issue. Even before a draft PPS is finalised and adopted, it becomes a material consideration for developers in subsequent planning applications as an evolving policy, although the weight to be attached to it will be a matter for the relevant decision-maker. Consequently, unlike many draft documents, developers must be aware that a draft PPS is not a document devoid of legal significance and a decision to adopt a draft PPS carries legal effects.

Colleen Theron and Deirdre Lyons, LexisPSL

CRC pushes businesses towards energy efficiency

Energy The introduction of the Carbon Reduction Commitment Energy Efficiency (CRC) scheme has driven businesses to invest more in energy-efficiency measures, according to the annual npower Business Energy Index (nBEI). Almost three-quarters of the 300 companies polled report investment as a direct result of their participation in the CRC, with 62% having installed smart meters and one in five taking on additional staff to manage their inclusion in the scheme.

And while some businesses believe that the CRC is unnecessarily complex and unwieldy, and that it places an unnecessary financial burden on business, more than half (52%) want no more changes to the scheme.

In October 2010, the government announced that it was scrapping the recycling payments, effectively turning the CRC into a straight tax, just seven months after the scheme launched. Recently, climate change minister Greg Barker unveiled plans to further streamline the scheme, reducing the number of fuels covered, removing the auctioning of allowances, and abolishing the need for large organisations to participate in groups.

The nBEI suggests that the changes have led to confusion and disillusionment among businesses, with the vast majority of respondents (94%) demanding that the recycling element is reinstated.

Almost one-third (32%) say that the removal of recycled payments from the scheme has had a negative impact on plans to invest in energy-saving measures.

"The issues businesses have faced since the implementation of the CRC and through its subsequent changes have led to confusion. And, while it is encouraging to see businesses investing in energy-efficiency measures, it is clear that the removal of recycled payments has meant that perhaps businesses have not implemented as much as planned," says Dave Lewis, head of business energy services at npower.

Separate research by British Gas Business reveals that some sectors of the economy are planning to spend significant amounts on energy-efficiency measures in 2011, with others lagging behind. Its survey of 900 organisations found that 32% of industrial businesses and 30% of the public sector will invest heavily in such measures this year, but that 26% of retailers and 22% of business services do not plan on spending anything on energy efficiency in 2011. The top five measures being implemented are: monitoring use; installing energy-efficiency devices/technology; electrical compliance/safety checks; portable-appliance testing; and installing new systems and equipment, such as new boilers.

Meanwhile, the government has announced that Whitehall departments exceeded the 10% reduction in carbon emissions demanded by David Cameron when taking office last year.

Over the past 12 months, carbon emissions from central government buildings have fallen 13.8%, reducing energy bills by £13 million. The biggest reduction was at the Department for Education, which slashed its CO_2 emissions by 21.5%. DECC reduced its discharges by 21.3%, while Defra's were down by 11.6%.

The government has now set departments a new target: to reduce emissions by 25% by 2015.

Scottish landfill waste continues to drop

Waste The amount of waste being sent to landfill sites in Scotland has dropped 36% in just five years, according to figures released by the Scottish Environment Protection Agency (SEPA).

Its annual analysis of waste figures reveals that not only is less waste being generated, but that more is being recycled each year. During 2009, Scotland produced 17.1 million tonnes of waste, a 22% drop from 2005, with substantial cuts in the waste being produced both by businesses and homes, including a 28% cut in the construction sector. Other key findings over the five years include:

- a 26% drop in the amount of biodegradable waste sent to landfill;
- the amount of controlled waste being landfilled falling from 7.3 million tonnes to 4.7 million tonnes; and
- waste treated by waste management sites rising by 30%.

Martin Marsden, SEPA's head of environmental quality, said that the figures were encouraging and good news for the environment, but warned that challenges remain.

"We must all accept that new services, facilities and, most importantly, changes to our lifestyles will be needed if we are to further prevent, reuse and recycle our waste in Scotland," he said.

Ian Gulland, director of Zero Waste Scotland, agreed: "We all need to strive to do more by making full use of existing infrastructure and by making it easier to recycle, in particular for small and medium-sized enterprises and for people when they are out and about, as well as by increasing the range of materials it is possible for people to recycle."

SEPA's landfill figures followed a report from Zero Waste Scotland claiming the hospitality sector in Scotland could save £64 million a year by preventing or tackling waste more effectively.

No waste for Kit Kat factory

Confectioner Nestlé has announced that its factory in York has met the firm's target to send zero waste to landfill four years ahead of schedule.

The site, which makes more than one billion Kit Kats and 183 million Aero bars each year, is now saving almost £120,000 a year in landfill tax and is generating additional revenue by selling recovered materials including cardboard, plastics and pallets.

"Although there is still much to do in our sustainability journey I am very proud of what our employees have achieved in such a short time," said Paul Grimwood, chief executive officer at Nestlé UK and Ireland.

The Kit Kat factory, which is the third of Nestlé's 14 UK factories to hit zero waste before its 2015 target, has also cut its water use by 36%.

Forget Kyoto, go local, says Oxford report

Climate change International efforts to address climate change should now focus on voluntary national commitments to reduce greenhouse-gas (GHG) emissions rather than on agreeing a successor, or extension, to the Kyoto Protocol. That is the recommendation of a new report from the Smith School of Enterprise and Environment (SSEE) at the University of Oxford.

The report – *International climate change negotiations: Key lessons and next steps* (www.lexisurl.com/iema9623) – argues the voluntary agreements that emerged from the Copenhagen (2009) and Cancun (2010) climate change summits are significant progress because rapidly emerging economies, such as China and India, and the US put forward mitigation actions for the first time.

"We have made more progress through the voluntary agreements than through the formal UNFCCC process. Seventy-six countries, which account for 85% of global emissions, have now pledged to reduce their emissions," Sir David King, the SSEE's founding director and co-author of the report, told *the environmentalist*. The former scientific adviser to the UK government says the aim should be to reach a new legally binding international agreement by 2020, but, in the interim, the "pledge-and-review" system set up in Copenhagen and Cancun is a useful way of moving forward.

King: 76 countries have now pledged to cut their emissions

The SSEE report also highlights the importance of groups such as the G20 and the Cartagena Group – a 27-strong grouping of countries, including Australia, France, Germany and the UK – in driving forward the voluntary approach.

"We're not proposing that the UNFCCC negotiations are defunct, but that other bodies, like the G20, can provide leadership and stimulate the process," says King. "The Copenhagen Accord was not a UNFCCC agreement. But the UNFCCC ratified it at Cancun, turning the original 2.5-page document, with only 12 operational paragraphs, into a 30-page one with far more detail."

Putting a realistic price on GHG emissions and establishing a global cap-and-trade system, similar to the EU emissions trading scheme (ETS), are among the other recommendations in the SSEE report.

King supports plans by the UK government to introduce a carbon floor price, although he believes it needs to be higher than the initial price of £16 a tonne. "The UK is absolutely correct to put a price under carbon and £16 pounds a tonne is a good start as long as it gradually rises. I think €100 is a more realistic figure."

He believes a global ETS will develop, but is unlikely to involve all countries, and is more likely to require countries to first reach a sufficient standard before being able to join.

INSIDE SCIENCE

Pinning down the detail

We have well-founded confidence in predicting the general direction in which the climate is changing – warmer temperatures, changing precipitation patterns, sea-level rise, and more extreme events. But we have less confidence in pinning down the detail of, say, how much hotter the hottest summer days could be, or by what percentage winter rainfall will change.

The latest science (such as the UK Climate Projections 2009 (UKCP09)) puts explicit estimates on how much confidence we have in different degrees of change, but the range is still large. For example, UKCP09 suggests changes in summer precipitation for London under a medium emissions scenario of –43% to +16% for the 2050s. Making the uncertainty more explicit requires decision-makers to be able to handle these large ranges, rather than use averages, which, although more convenient, could result in less robust decisions. While the 2050s are seemingly a long way off, many decisions we make now will have ramifications during this period. The planned lifespan of a house is about 50 years, but of course many houses and major costly infrastructure last much longer. Building in adaptation measures to house design now is often cheaper than trying to retrofit in the future when the impacts of climate change actually occur. So understanding the long-term projected changes in climate is important. Overly complex information or uncertainty can act as a barrier to making this happen: what future should we adapt to? How can we work this out when presented with 10,000 different estimates of change, all of different likelihoods? Another barrier, suggested by a variety of social research and economic studies, is that relatively small up-front costs receive a much greater weight from people than the long-term payoff. Of course, we deal with uncertainty in everything we do – hence the widespread take-up of insurance by householders. Although climate change uncertainty seems very different, the basic principles are the same. For example, those planning the build site for a coastal power plant would (and do) plan on the basis of protecting against a very high level of flooding. The chance of this occurring may be very remote, but the potential costs and impacts of flooding are so enormous as to justify significant investment in managing even low probability risks. This is in effect their insurance policy; they are willing to pay a lot now to avoid the risk of flooding later. Sometimes surprise events, such as the recent Japanese Tsunami, demonstrate how we can still be vulnerable to very infrequent catastrophes. Even a 1-in-1,000 risk is as likely to happen tomorrow as in 1,000 years' time.

Robert Watson, Kathryn Humphrey, Joseph Lovell and Jonathan Bonas (Defra)

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NEW REGULATIONS

In force	Subject	Details
16 June	Climate change	The Greenhouse Gas Emissions Trading Scheme (Nitrous Oxide) Regulations 2011 enable the UK to include nitrous oxide emissions from the production of nitric acid in the EU emissions trading scheme. The European Commission granted the UK permission to do this on 6 June 2011. www.lexisurl.com/iema8464
25 June	Environmental protection	The Pollution Prevention and Control (Amendment) Regulations (Northern Ireland) 2011 amend the 2003 Regulations by: changing the interpretation of Part A to remove from the scope of Part A(b)(iii) and Part C(b)(iii) and (c) fuels manufactured from a waste; excluding the manufacture of powder coating unless the process uses lead chromate or triglycidyl isocyanurate; placing the drying of green crops in the list of exempt activities; and including carbon capture and storage in a new section (6.10). www.lexisurl.com/iema8269
25 June	Environmental protection	The Environmental Liability (Prevention and Remediation) (Amendment) Regulations (Northern Ireland) 2011 amend the 2009 Regulations to cover the geological storage of carbon dioxide. www.lexisurl.com/iema8274
29 June (1 August)	Natural environment	The Wildlife and Natural Environment (Scotland) Act 2011 (Commencement No. 1) Order 2011 brings a number of provisions of the Wildlife and Natural Environment (Scotland) Act 2011 into force on 29 June. It also brings s.34 of the Act into force on 1 August 2011. www.lexisurl.com/iema8468
30 June	Climate change	The Carbon Budget Order 2011 sets the carbon budget for the 2023–2027 budgetary period (1,950 million tonnes of carbon dioxide equivalent), while the Climate Change Act 2008 (Credit Limit) Order 2011 sets a limit on the net amount of carbon units that may be credited to the net UK carbon account for the 2013–2017 budgetary period of 55 million carbon units. www.lexisurl.com/iema8478; www.lexisurl.com/iema8480
4 July	Emissions trading	European Commission decision 2011/389/EU sets the total number of allowances for the EU emissions trading scheme from 1 January 2012 to 31 December 2012, and for phase III, beginning on 1 January 2013. www.lexisurl.com/iema9602
11 July	Environmental protection	The Storage of Carbon Dioxide (Termination of Licences) Regulations 2011 implement articles 18 and 20 of the Directive 2009/31/EC on the geological storage of carbon dioxide, which cover the transfer of responsibility for a closed storage site and the associated financial mechanism. www.lexisurl.com/iema8455
12 July	Pollution	The Pollution Prevention and Control (Designation of Directives) (England and Wales) Order 2011 designates 22 Directives as relevant Directives for the purposes of para. 20(2)(c) of Sch. 1 to the Pollution Prevention and Control Act 1999. www.lexisurl.com/iema8454
15 July	Built environment	The Building (Amendment) Regulations 2011 amend the Energy Performance of Buildings (Certificates and Inspections) (England and Wales) Regulations 2007 and the Building Regulations 2010, mainly rectifying errors. www.lexisurl.com/iema8466
15 July	Natural environment	The Conservation (Natural Habitats, etc) (Amendment) Regulations (Northern Ireland) 2011 amend the 1995 Regulations to transpose EU Directive 2009/147/EC on the conservation of wild birds. www.lexisurl.com/iema8273

LATEST CONSULTATIONS

1 September

Water quality

The Welsh Assembly government is consulting on the introduction of buffer zones alongside watercourses to tackle water pollution in agriculture. It involves setting a new Good Agricultural Environmental Condition (GAEC) for the buffer strips.
www.lexisurl.com/iema8494

9 September

Waste

The European Commission is reviewing the exemptions in Annex II of EU Directive 2000/53/EC on end-of-life vehicles. The Directive prohibits materials and components of vehicles put on the market since 1 July 2003 from containing lead, mercury, hexavalent chromium and cadmium, although there are a limited number of applications exempted, and these are listed in Annex II. Some exemptions are now up for mandatory review – and are subject to consultation – to see if they should continue beyond 1 January 2013.
www.lexisurl.com/iema8492

16 September

Enforcing regulations

As part of the government's drive to ease the regulatory burden on business, the Department for Business Innovation and Skills (BIS) is consulting on plans to change the way regulation is enforced. BIS has issued two consultation papers: a discussion paper on improving the implementation of regulation and a document on the future of the Local Better Regulation Office and the Primary Authority scheme.
www.lexisurl.com/iema8499
www.lexisurl.com/iema8500

16 September

Waste

The Waste Management Licensing (Scotland) Regulations 2011, which came into force on 27 March, provide greater flexibility in how technically competent management at waste management facilities is demonstrated. The Scottish Environment Protection Agency is seeking views on a new approach to the assessment of technically competent management at such sites. The requirement for a licence holder to provide technically competent management at a site is part of the test of whether an applicant is "fit and proper" to hold a waste management licence.
www.lexisurl.com/iema8495

23 September

Energy

Following a sixfold increase in the number of hydropower schemes planned in England and Wales over the past two years, the Environment Agency is consulting on updating its hydropower guidelines. The aim is to make the guidance clearer and more comprehensive for designers of new schemes, while ensuring that the environment is well protected. The revised guidance is due to be published in December.
www.lexisurl.com/iema8488

23 September

Enforcing regulations

The Department of Environment in Northern Ireland is consulting on the draft guidance and subordinate legislation required to underpin the fixed penalty provisions in the Clean Neighbourhoods and Environment Act (NI) 2011. The guidance covers a range of issues, including the basis on which fixed penalty notices should be issued and when they should not, and how non-payment should be monitored, managed and dealt with.
www.lexisurl.com/iema8509

30 September

Air quality

The environment directorate of the European Commission is consulting on existing EU air quality legislation, particularly whether Directive 2008/50/EC on ambient air quality and cleaner air for Europe and Directive 2004/107/EC relating to arsenic, cadmium, mercury, nickel and polyaromatic hydrocarbons in ambient air are effective in improving air quality. The consultation marks the beginning of a broad consultation on the review of EU air policy, which is likely to end in 2013.
www.lexisurl.com/iema8486

NEW GUIDANCE

GHG conversion factors	DECC and Defra have published new greenhouse-gas (GHG) conversion factors for company reporting. They are available in both Excel and pdf format at www.lexisurl.com/iema8496. The conversion factors complement the 2009 DECC/Defra guidance for businesses and organisations on how to measure and report their GHG emissions (www.lexisurl.com/iema8497).
Pollution inventory reporting	The Environment Agency has updated its guidance on pollution inventory (PI) reporting (www.lexisurl.com/iema8501) for operators of waste transfer stations. The guidance aims to assist operators to complete their PI and should be used together with general PI guidance (www.lexisurl.com/iema8502) to ensure that they meet the reporting requirements of the European Pollutant Release and Transfer Register (E-PRTR) Regulation.
Stack emissions monitoring	The Environment Agency has revised its technical guidance note (M2) on monitoring stack emissions to air (www.lexisurl.com/iema8505). It is one of a series providing guidance to agency staff, monitoring organisations, industry and other parties interested in monitoring such emissions. It is also a technical reference for the EA's Monitoring Certification Scheme (MCERTS) and Operator Monitoring Assessment (OMA) scheme. The agency has also published new guidance (www.lexisurl.com/iema8507) for applicants on its impact assessments for group 3 metals stack releases.

EVENTS CALENDAR

Date	Course	Location and details
13–14 September 2011	Energy event 2011	NEC Birmingham www.lexisurl.com/iema8279
13–15 September 2011	RWM 2011	NEC Birmingham www.lexisurl.com/iema8278
14 September 2011	Efficient ICT, greener government 2011	QEII Conference Centre, London www.lexisurl.com/iema6971
4–5 October 2011	Waste technology summit	Regents Park Marriott, London www.lexisurl.com/iema10668
5–6 October 2011	European bioenergy expo and conference, and Microgen and NextGen exhibitions	Stoneleigh Park, Warwickshire www.lexisurl.com/iema10667
6 October 2011	Energy-effective lighting – developments in ultra-low lighting solutions	Menzies Hotel, Glasgow www.lexisurl.com/iema10669
11–12 October 2011	Energy solutions 2011	London Olympia www.lexisurl.com/iema8513
20–21 October 2011	Carbon show 2011	Business Design Centre, London www.lexisurl.com/iema8277
24–25 October 2011	Sustainable innovation and design	Farnham Castle, Farnham www.lexisurl.com/iema8276

Looking at GHG reporting

Paul Suff follows the discussion at the recent *environmentalist*/WSP roundtable on mandatory greenhouse-gas disclosure

The Climate Change Act 2008 requires the introduction of regulations by 6 April 2012 obliging companies to report their greenhouse-gas (GHG) emissions or for the government to explain why this has not happened. Defra's consultation on GHG reporting, which closed on 5 July, contained four options to take this forward. The government has separately decided to seek changes to the narrative reporting obligations for quoted companies – these demand that information on social and environmental matters is included in annual reports. Defra has made it clear that any moves to introduce mandatory GHG reporting will align with changes to the narrative reporting framework.

It's obvious from the the consultation document that the government has still not decided whether to introduce regulations on mandatory reporting, even including "enhanced voluntary reporting" as one of the four options under discussion. Climate change minister, Greg Barker, recently conceded that there is "still a very live debate in government" over the issue, although he told the Aldersgate Group meeting in June that he was personally in favour of mandatory reporting because of the benefits for investors in understanding a company's carbon risk and for company directors who need to understand their exposure to the prices of carbon, oil and gas. "A common reporting practice is going to be good for business," he said.

The environment profession has heavily endorsed the introduction of mandatory reporting. In its latest survey of members, IEMA reports that support had reached 90% in June among the almost 900 environment professionals responding. A previous IEMA poll, in December 2010, found 80% of participants in favour. Many leading UK companies already report on their GHG emissions. The Carbon Disclosure Project (CDP), for example, revealed that 206 companies in the FTSE 350 disclosed their emissions in 2010, although not all made their data public. Smaller firms are less likely to report and few UK companies report in line with existing government guidance, which was published in 2009 and is based on the GHG Protocol. The Environment Agency found, also in 2010, that just 22% of the then 458 FTSE All Share companies reported carbon emissions in line with the 2009 guidance during the financial year 2009/10.

Martin Baxter – executive director of policy at IEMA. He also leads the UK delegation to ISO on all environmental standards

Aside from encouraging more voluntary reporting, Defra's options range from mandating all quoted companies (option 2) to disclose GHG data, which would cover about 1,100, to requiring all large companies (option 3) – as defined by the Companies Act 2006 – to do so, which would catch between 17,000 and 31,000 firms.

In June, *the environmentalist* and WSP jointly hosted a roundtable event to discuss the best approach to GHG reporting and some of the main issues surrounding mandatory disclosure.

Only one option

Lindsay Harris, the Defra official leading the team looking at GHG reporting, kicks off the discussion by explaining the government's position. "There is no preferred government option. Ministers haven't made up their minds yet," he stresses. **Harris** explains that Defra had run close to 20 workshops around the

David Symons – director at WSP Environment & Energy and WSP lead on sustainability and innovation

country, which had all been oversubscribed, and that environment department officials had spoken at events hosted by organisations such as the Aldersgate Group, CBI, EEF, the British Retail Consortium and IEMA. "Defra wanted to get a better sense of where stakeholders were coming from," he says.

He reports that "option 3" is the clear choice among most of those attending the workshops and meetings. "The fairly strong majority view is that we should be regulating all large companies," he says, before adding the caveat: "There is an element of 'they would say that wouldn't they', because the people that are motivated to attend the workshops tend to be those who are interested and who are already reporting and tend to think that others should do so too."

Harris also acknowledges that a fairly significant minority are not convinced that GHG reporting should be mandatory.

Most of the roundtable participants work in organisations that already disclose emissions data. **Steve McNabb**, who leads on environment practice at Simmons & Simmons, says the international law firm, although not a big emitter, has recently started reporting using the protocol developed by the Legal Sector Alliance (a calculation methodology developed with the Carbon Trust, verified by the Edinburgh Centre for Carbon Management). "It's voluntary and covers most of the largest legal firms in the UK," he explains.

Given their existing experience of reporting, it is no surprise that option 3 is also the preferred choice among the roundtable participants. "Our view would be option 3," says **Jonathan Garrett**, group head of sustainability at Balfour Beatty, the infrastructure company. "This year, for the first time, Balfour Beatty aligned its carbon reporting with its annual report," he notes.

Victoria Barlow, group environment manager at travel company Thomas Cook, also favours option 3. "Yes, we'd agree. Option 3 is the best option for us. We don't currently align our annual and sustainability reports so that would require some changes," she says.

"Option 3 is the logical way to go," concurs **Andrew Bright**, who leads on UK corporate sustainability practice at WSP Environment & Energy. **Martin Baxter**, policy director at IEMA, explains that the environment profession is overwhelmingly in favour of option 3 because it "will enable the biggest carbon reduction and the biggest business benefits – we don't see those two as being mutually exclusive."

Going down the option 3 route would involve far more organisations providing information on emissions than any of the other options, however. It would catch all large companies, which the Companies Act 2006 defines as a firm that meets two out of the following three criteria: more than 250 employees; annual turnover greater than £25.9 million; a balance sheet greater than £13.9 million.

There is some concern among the roundtable delegates that mandating up to 31,000 organisations – the consultation document makes it clear that option 3 would cover both private and public sector organisations – could pose problems.

"I think [reporting] is a journey, but one thing we need to be mindful of is, yes, the seasoned reporters are happy to have mandatory reporting, but if we go for option 3 it will be new to a lot of companies. We have to have some initial flexibility in how they measure their GHG emissions so they are not being forced to 'run before they can walk'," says **Garrett**. **Barlow** agrees: "There are a lot of organisations that haven't done this before, so we need to get everyone up to the same level."

David Symons, director at WSP Environment & Energy, says more assistance will have to be provided to the companies that currently do not report so they can accurately measure and disclose their GHG emissions. "Some organisations will need a lot more training in how to monitor and measure their emissions," advises **McNabb**.

Asked whether mandatory reporting could go further and catch smaller companies, **Harris** says that is not an option. "I don't think there is any appetite from ministers to go down that route. They are very open about the options on the table and want to hear views on them, but they've made it quite clear that they're not interested in regulating SMEs at all," he explains.

Accountability

As well as catching a significant number of "new" reporters, option 3 could challenge existing reporters.

"Putting something in law is an entirely different proposition," explains **Harris**. "This has come out when talking to finance people in companies and the group representing company secretaries. Often companies, even the leading ones that are doing really good carbon reporting and who are regarded as leaders, provide very little GHG information in the directors' report. A lot of

Jonathan Garrett – group head of sustainability at Balfour Beatty. He is also non-executive director at IEMA

businesses have said to us that if GHG information has to go in the directors' report, that involves a significantly raised level of attention and verification of the data than if it is just reporting to the CDP, for example. So the sense we had before the consultation, that the all-listed-companies option wouldn't deliver much more as half are reporting already, is not quite right, because it will mean a lot of change even for those companies."

There is an acknowledgment among participants that data accuracy and levels of assurance will have to improve. "We have a degree of assurance, but it is not as well developed as the processes we have for our financial data," concedes **Garrett**. "It's evolving. The CRC [Carbon Reduction Commitment Energy Efficiency scheme] has been a real driver. Because it's a regulatory requirement a lot of effort has gone into getting the numbers right, so the level of assurance has increased markedly over the past year. I think once mandatory reporting comes in there would be a higher degree of internal checking. But we're going to be doing that anyway as part of our response to the CRC. Our evidence packs are pretty good, but we'll be doing more to improve accuracy."

Barlow says that Thomas Cook is treading a similar path. "We are currently improving our data capture methodology but whether we'd have it ready in time for the legislation is something we'd have to sort out internally."

Involving finance departments in data gathering is one way of improving assurance, according to several delegates. "The more we ask our finance team to produce numbers, the more robust they are," says **Symons**.

Harris says the related issues of organisational boundaries – what parts of the organisation are covered by any obligatory requirement to report – and the scope of the emissions data have been keenly discussed in the Defra workshops.

"Organisational boundaries are an issue, especially among multinationals that also operate in the US," says Harris. "There is a concern about the strict liability rules that govern the American system.

"Boundaries could also be tricky if we go down the mandatory route because if we legislate under the Companies Act, the organisational boundary will be the same as for financial reporting. In the Defra GHG reporting guidance we recommend financial control as the way of setting your organisational boundary, based on the GHG Protocol. Apparently, that is slightly different from the way the organisational boundary is set in some financial reports and accounts. Not hugely, but marginally. So anyone following the guidance, and not putting the figures in the directors' report might need to amend their GHG figures at the margins."

Barlow advises that the legislation has to be quite clear on what needs to be covered and in setting the organisational boundary.

The discussion shifts to scope, and specifically whether scope 3 emissions – indirect discharges, such as those from business travel and upstream emissions embedded in suppliers' products – should be included in the mandatory data.

Lindsay Harris – deputy director of sustainable business and resource efficiency at Defra

Although scope 3 emissions are much harder to calculate than either scope 1 or 2 discharges, measuring them gives organisations and investors a better understanding, including their potential exposure to climate change risks. "Material scope 3 emissions provide a more complete picture of performance in terms of the overall value chain of the products and services they are providing," acknowledges **Baxter**.

McNabb says that larger firms are increasingly seeking such information. "We do get asked in tenders from large corporations in panel reviews: 'How do you measure? How do you monitor?' There is significant supply chain pressure."

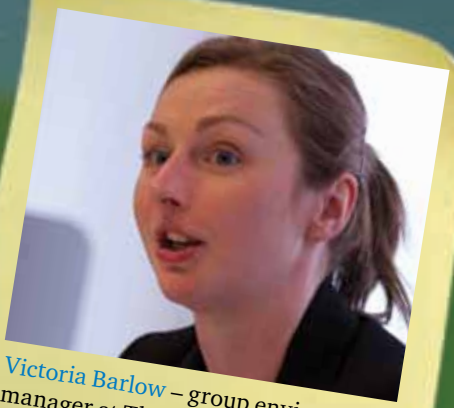
Including scope 3 emissions in the requirements will be a huge challenge for many organisations, however. "The issue we have with scope 3 is that our hotel supply chain is vast and very difficult to get data from. Yes, some of the big hotel chains release information about their own carbon footprint, but for us to go to hotels and get that sort of data is just too difficult. Most just don't collect that information," explains **Barlow**. "Scope 3 is therefore a big nightmare for us."

Garrett says Balfour Beatty sees scope 3 as more of an opportunity than a nightmare. "Where we have done it well, we've saved money through material substitution. It comes down to materiality for your organisation."

Harris says the general consensus is that including scope 3 emissions would be too difficult. "On the whole, the message is don't go there: it's too complicated."

He is keen to know whether using intensity ratios – for example, the amount of CO_2 emitted per £ of turnover – as a way of reporting emissions is something roundtable participants would support.

"Intensity ratios have come up a lot in the Defra workshops, particularly among large companies," says **Harris**. "Some company reports use intensity ratios and it helps stakeholders to see the performance of the firm over time. So, where you've got big acquisitions or changes to the business it provides a more comparable figure." **Baxter** agrees. "If firms are encouraged to develop intensity ratios, more meaningful comparisons could be made," he says.



Victoria Barlow – group environment manager at Thomas Cook

Others are not convinced. "Intensity ratios have a huge amount of use inside companies to understand efficiencies of operation and to make comparisons with other organisations, where they can be looked at on a like-for-like basis. It's particularly easy to make direct comparisons between companies making 'widgets'. But they can also hide a huge amount of disparity and the numbers can be skewed to make you look good and bad," explains **Bright**.

Several delegates were concerned that comparisons of intensity ratios might lead to the wrong conclusions being drawn. "I'm not against intensity ratios," says **Garrett**. "I'm just saying it's hard to directly compare numbers. Take tonnes of carbon per million pounds of revenue, for example. If yours is 50 and you are being compared with an organisation with 10, then you're not comparing 'like with like'."

Symons offers the following example to illustrate the potential problem. "Take supermarkets. Morrisons is a more vertically integrated organisation than Sainsbury's. It has its own dairies and bakeries etc. To the uninitiated, if you were to make a direct comparison of the carbon intensity of both companies you'd draw some very different conclusions that would probably be incorrect. Comparison of GHG intensity even between companies in the same sector is extremely difficult," he notes.

Conflicting demands

Participants were unanimous in suggesting that the existing reporting demands on organisations need to be streamlined if mandatory reporting is not to be seen as another burden. "There are already so many different carbon-reporting programmes out there that all require different sets of data over different time periods, so we need to keep any mandatory mechanism as simple as possible," says **Barlow**.

Inevitably, attention turns to the relationship between mandatory reporting and the CRC. **Bright** picks up on this point. "We've got so many reporting mechanisms and if we go down a mandatory reporting route there is a danger that organisations will have several different carbon 'numbers' in the public domain. So the 'man in the street' and newspaper headline writers will be able to make some interesting comparisons out of the differences between those numbers without being particularly well informed, which could put companies in quite awkward positions. It creates a situation where they have to come out and defend or set out the reasons why the figures differ. "Do we not need to do something with the CRC in terms of its reporting and maybe think about getting rid of it?" he asks.

"People are saying precisely that," admits **Harris**. He says the link or overlap between the CRC and mandatory reporting is one of the biggest things to have come out of the Defra workshops and meetings. "Most of the participants in the Defra reporting workshops that have spoken about the CRC support the idea of replacing the reporting element of the scheme with mandatory reporting," says **Harris**.

"If the government did remove the CRC reporting league table element, that would fit with its 'one in, one out' regulatory commitment," notes **Baxter**.

He says one of the main problems with the CRC is that it only measures a small proportion (energy-related) of emissions. "We've currently got regulatory levers that drive organisations to look at only a very small part of their overall emissions. Whereas mandatory reporting will provide overall context," explains **Baxter**.

Barlow acknowledges that point. "Because we operate four airlines, which account for 98% of our carbon footprint, we actually look better in the CRC than we would if our complete GHG picture was on display. So, by us focusing on our electricity and gas consumption across our retail outlets, we're not having a massive impact on our overall carbon footprint because of our aircraft."

Garrett, however, says that Balfour Beatty's participation in the CRC is driving the company to look much more closely at aspects of its carbon footprint that are not covered by the scheme.

Costs and benefits

Several roundtable participants were critical of the impact assessment (IA) that accompanied the consultation document. "If you look at the IA, for all the options, other than the voluntary one, the costs are greater than the benefits," notes **Symons**.

Steve McNabb – leads on environment practice at international law firm Simmons & Simmons

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"We've been working through the IA and are challenging some of the assumptions it makes," **Baxter** says. "We believe that the balance of costs and benefits associated with GHG reporting is significantly different to the situation outlined in the IA."

Harris responds by saying: "We are conscious of the limitations of our IA. I would accept that our IA probably does under-catch the benefits, and that has been a fairly unanimous verdict from businesses at our consultation workshops and gatherings. My gut feeling is that the total benefits are a bit low, but getting the data to demonstrate total benefits is hard."

Others are keen to illustrate some of the potential benefits by highlighting how the CRC is driving improvements. "The introduction of the CRC scheme means that both myself and our energy services manager have been able to put together better business cases for the installation of smart metering across our retail network and improving lighting at our aircraft hangar facility. We are starting to get more attention at the board level," says **Barlow** at Thomas Cook. She says that although the roll-out of smart meters is not yet complete, the travel company is looking at savings, with one outlet saving between £4,000 and £4,500 so far.

Harris asked whether the business case for smart meters was because Thomas Cook now has to report under the CRC or because the firm now has the numbers to support the introduction of smart meters.

"It's a mixture of both," responds **Barlow**. "We've obviously gone out there and reported, which required the data set. By improving our data-capture methodology we've now got a bit more trust in the figures. For example, previously, the CRC energy use in our UK retail network was based on estimated bills most of the time. And although we did some utility bill validation, and were able to get some costs back, now we've installed smart meters we can see that most of our outlets had faulty heating switches, meaning the heating was running all night. That has been remedied through a very simple solution."

Garrett believes the potential benefits of reporting are more than just financial, and include reputational drivers. "If you look at it purely from a cost perspective, it wouldn't even be on the radar of senior management. Balfour Beatty's revenues are £10.5 billion and energy is a tiny, tiny proportion of that. But when it gets reported as a distinct key performance indicator, and when you are being ranked against other organisations, its importance increases," he explains.

Symons uses the IA for the CRC to highlight the paucity of the benefits set out in the reporting IA. "The CRC IA forecast a net present value benefit of £3.8 billion before recycling payments were removed. It quantifies the intangible benefits such as air quality which the reporting IA excludes. Most importantly though, the CRC IA suggests that reporting is very good for business – which the GHG reporting IA does not. It's inconsistent," he explains.

Baxter agrees, and goes further. "The critical thing is that the number of companies that are in the CRC and would also be covered by mandatory reporting if it came in would be about 2,100. The public sector wouldn't be there, so the actual figures are different. There would be significantly more companies that would potentially benefit from mandatory reporting. It will force them to look across their performance. In order to have to report, they'll have to be managing their energy and collecting data, so they'll start to ask 'why are we heating our offices at night', or whatever, so they'll get those benefits."

Garrett takes a similar view: "We'd be looking at wider carbon impacts than the CRC, including transport. There is lots of stuff out there that gives you 10–15% savings. There is more stuff to go for, more potential efficiencies to be made."

The final word

Finally, roundtable participants are asked to offer some closing thoughts on the introduction of mandatory reporting.

"I think this is a great opportunity. UK plc collectively and companies individually will benefit hugely from undertaking mandatory reporting. They should see it as an opportunity," says **Bright**.

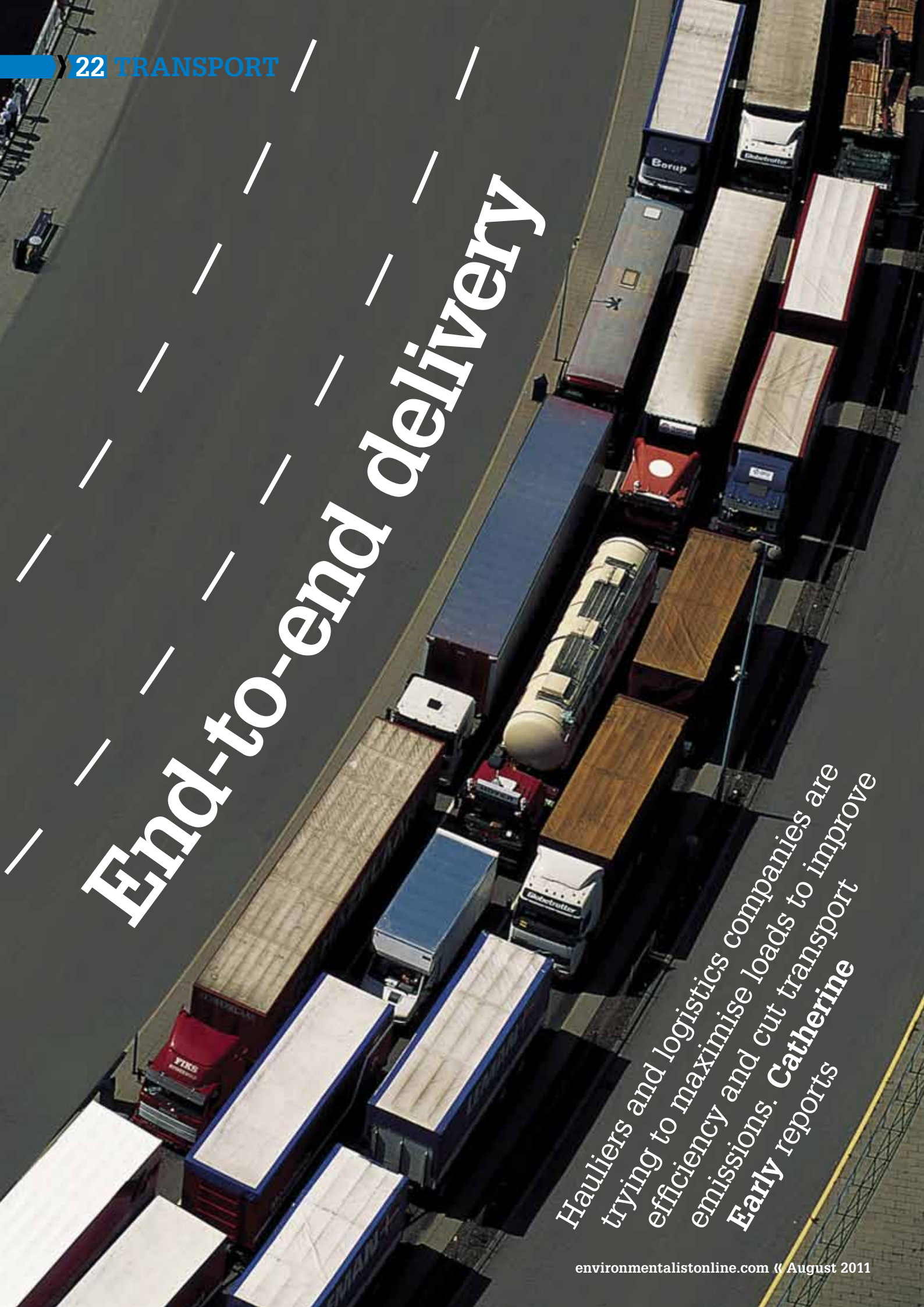
Garrett agrees that it is a potential opportunity: "If you get it right it will save companies money." He would like to see voluntary reporting continue for smaller organisations, and the government to encourage this through its procurement activities. "The message is don't drop encouragement for voluntary reporting," he says. **Barlow** reiterates her call for the mandatory mechanism to be as simple as possible.

Baxter says: "Mandatory reporting removes misdirected efforts by allowing companies to take a view on all their emissions, not just some of them, and target improvement where the greatest environmental and business benefits can be gained."

Symons spells out the enormous potential environmental benefits. "We know that we can take 10% out of the energy consumption of a building just through better monitoring at no cost. So, if we get up to 29,000 more companies doing that, it will have an enormous impact on UK emissions, as well as delivering huge cost savings for business."

the environmentalist and WSP roundtable took place on 23 June at WSP House in London. WSP and *the environmentalist* would like to thank all those who took part.

End-to-end delivery



Hauliers and logistics companies are trying to maximise loads to improve efficiency and cut transport emissions. **Catherine Early** reports

Lorries are seen by many as a necessary evil, as there will always be a need to transport goods from their place of manufacture to their point of sale. But in around one-quarter of the journeys that are adding to the UK's CO_2 emissions, not to mention air and noise pollution, the lorries are actually driving around empty.

There have been calls for companies to take action on so-called "empty running". Haulage firm Stobart Group has gone as far as to ask the government to tax empty running after it managed to cut its own rate down to 15% of its vehicles.

Meanwhile, the Committee on Climate Change has recommended increasing load sharing and backloading of vehicles – where companies fill their lorries with recyclate, produce or even another firm's load for delivery elsewhere – as part of a package of abatement measures the freight industry could take to reduce its carbon impact.

Taking action

The transport sector accounts for approximately 21% of UK domestic greenhouse-gas emissions, and heavy-goods vehicles (HGVs) are responsible for 20% of that figure. The freight industry is already taking action.

In 2009, the Freight Transport Association (FTA) launched its Logistics Carbon Reduction Scheme as a voluntary, industry-led response to climate change.

The campaign has 53 member organisations, representing about 48,000 commercial vehicles, or around 5% of the total national fleet. Participants have been set a target of reducing emissions by 8% by 2015, from a 2010 baseline.

Cutting empty running by increasing backhauling is one of the actions members have undertaken to work towards the target. It is not a new concept, but it is one that companies are increasingly seeing the benefit of. Professor Alan McKinnon, who has been studying the environmental impacts of freight at the Logistics Research Centre at Heriot-Watt University for 20 years, reports a real change in mood in recent years. "There's a new seriousness on the part of many companies – they are intent particularly on cutting their CO_2 emissions, either on their own, or increasingly collaborating to share vehicles and looking at how they can work together on their supply chain to reduce their carbon impact. I've detected a genuine change in attitude on this."

Of course, one of the major reasons behind this is the rocketing cost of fuel. But McKinnon is adamant that companies are not just greenwashing their intentions. "I think there's a genuine realisation that sustainability has an economic and an environmental dimension," he says.

Rachael Dillon, FTA climate change policy manager, agrees. "Fuel duty is very high. But by the same token, if you cut your fuel use you cut your emissions."

The proportion of kilometres covered by empty HGVs has steadily declined over time. In 1973, empty running rates were 33.7%. By 2003, this had reduced to 26.5%, according to the Department for Transport. If the percentage of empty running had remained at its 1973 level, road haulage costs would have been £1.3 billion higher and an extra 1.1 million tonnes of CO_2 would have been emitted into the atmosphere, a study by Heriot-Watt University has found.

The increasing length of journeys made by HGVs can partly explain the fall in empty running over the past 30 years. The longer the journey, the greater the incentive for hauliers to find a return load. Many supply chains have also strengthened the return flow of packaging waste because of government regulations.

The rate of empty running has increased slightly to 27% in recent years, however. Nonetheless, a survey by McKinnon found that logistics experts believe that, combined with other actions such as driver training, carbon emissions from road freight could be cut by 10% by 2020, even with a projected 25% increase in freight transport.

Matchmaking

One way the 10% figure could be reached is through the increasing trend for companies to fill their vehicles with loads belonging to other companies, rather than with their own product or waste. The Institute of Grocery Distribution (IGD) has been encouraging its members to collaborate in just such a way.

Karen Chalmers, senior supply chain analyst at the IGD, says: "Lorries are expensive to buy and transport networks are expensive to run, and we know that there's a huge amount of tailpipe emissions from lorries, so anything an organisation can do to be more efficient makes good business sense as well as environmental sense."

Stobart Group has asked the government to tax empty running – lorries travelling without a load – after cutting down its own rate to 15%

Companies need to look outside their own operations when considering how to improve the sustainability of their networks, she adds.

The IGD has run events aimed at matching up organisations to share distribution operations, which has resulted in a number of collaborations, even between companies that are direct competitors on the shop shelf.

Nestlé and United Biscuits have joined forces despite their rival positions as manufacturers of products such as Kit Kat and Penguin biscuits.

Rob Wright, logistics controller at United Biscuits, explains how this came about after a chance meeting at an IGD event which aimed to match manufacturers and retailers so that they could explore opportunities to work together. "It was a bit of a speed-dating experience. We weren't put together [with Nestlé] because we were competitors. But we got talking at the coffee machine in a break and realised we have the same customers."

The companies identified a potential to work together in flows operating between York, Halifax and Leicestershire. United Biscuits was delivering into one area and coming back empty, while Nestlé had the opposite run. So, in 2008, the companies began collecting each other's loads after making their own deliveries. The practice was expanded in 2009 and 2010, and together they have removed journeys amounting to more than 400,000 kilometres from the UK roads.

"It's captured everyone's imagination because we are competitors – United Biscuits is the number one biscuit manufacturer, but Nestlé makes Kit Kat, the UK's number one biscuit," Wright says. "But we took the view that we compete on the shelf, not as logistics providers."

Collecting each other's loads has removed journeys amounting to more than 400,000km by United Biscuits and Nestlé lorries

The collaboration is an extension of United Biscuits' green logistics strategy, which involved the company backhauling waste and packaging for its customers and other suppliers. It has now reduced empty running from 22% to 13% in the past four years. "Backhauling makes transport planning more complex, but other than that there's quite a benefit to be had. The benefits far outweigh the challenges," explains Wright.

Examples of similar collaborations include Unilever and Asda Wal-Mart. By working together the two companies have saved more than 80,000km a year, while a collaboration between and Sainsbury's and Nestlé has reduced HGV journeys by 64,200km a year. Elsewhere, Kelloggs, the producer of breakfast cereals, and Kimberley-Clark, which produces Kleenex tissue among other brands, have jointly saved about 430,000 lorry kilometres a year by coordinating their transport. Also, Unilever and Tesco have saved 11,000km a year on just one route between Doncaster and Goole. The two firms are now looking at expanding the partnership.

Morag White, environment manager for logistics at Sainsbury's, which is a member of the IGD's sustainable distribution group, explains: "The utopian position may be that you have a Tesco lorry delivering Sainsbury's products and vice versa. We're nowhere near that. You can imagine the politics of it! But cost pressures alone will force people to do that."

White believes it is easier for suppliers to act in this way than for retailers, because their branding is less visible to consumers. However, she adds, meeting under the umbrella of bodies such as the IGD can remove the politics of competition.

The IGD and Heriot-Watt University are in the middle of analysing data from the biggest survey of its type to date. They have gathered transport information at route and vehicle level from 27 retailers and manufacturers to identify future opportunities to reduce empty running even further. The results will be published in November.

Better data

Even with further successful collaborations such as the one between United Biscuits and Nestlé, however, the logistics industry generally accepts that there is no way of completely eliminating empty running.

McKinnon says that although the 27% rate of empty running seems very wasteful, there are many good reasons why it is not lower.

"It's partly to do with geographical imbalances," he explains. "If more freight moves in one way than in the opposite direction it can be quite difficult to find enough backloads to balance the flows in both directions."

One of the problems faced by even the keenest companies is to get information about what loads are available to backhaul. How does a haulier in London taking a truck to Edinburgh find out what other companies have loads waiting to be taken in the opposite direction?

Over the past 10 years, online freight exchanges such as www.haulageexchange.co.uk and www.shiply.com have made a business out of tackling this problem. These websites allow users to list a load they need moved. Haulage and delivery companies then bid for the work in a reverse auction.

Shiply.com was launched in 2008 and already has 385,000 users and 30,000 haulage and delivery firms. It estimates that it has helped to save more than

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United Biscuits and Nestlé work together on delivering goods

36,000 tonnes of carbon dioxide emissions by pairing customers and haulage firms in this way. It has now expanded its services across Europe.

McKinnon says that such sites are useful, but that no systematic assessment of their net effect on empty running has been undertaken. "People thought that the creation of these online freight exchanges would solve the problem, but it hasn't. It's helped at the margin but it hasn't dramatically affected the problem," he says.

The distance travelled by lorries in the UK is relatively short – just 90km – compared with the US, where backhauling is more common

Part of the issue in the UK is that distances travelled by lorries are relatively short. The average haul is about 90km, whereas in the US, where backhauling is much more common, the average journey length is four to six times higher.

"Where the distances are quite short, which is the case across much of the UK, companies find it more useful to bring their vehicles back empty. It's partly due to the size of the country," says McKinnon.

Tracking vehicles

All the good intentions of companies to reduce empty running can be offset by rising business, however. The FTA's 8% carbon reduction target refers to CO_2 emissions per vehicle kilometre, rather than an absolute reduction. "If the level of activity grows by 1.6% a year, then we're back to where we started, there's no absolute reduction," McKinnon points out.

The answer could lie in developments in telematics technology, which uses GPS tracking devices to monitor vehicle movements and journeys. Many retailers, manufacturers and haulage companies use this for various reasons, to better manage their fleets. It can help improve driving styles, routing and scheduling. The idea is to save customers fuel and money.

One such company, Isotrak, is taking this to the next level with new technology it is rolling out this autumn. Its third-party integration system – known as 3iS – will allow customers to integrate jobs and resources from any fleet that is a member of the system. The GPS tracking equipment accepts data from a wide range of tracking systems, not just those of Isotrak.

"We can give customers visibility, not just of their own vehicles but also vehicles that are outside of their control – a virtual network of all the vehicles that are available to them that are coming into their stores or depots," explains Greville Coe, sales and marketing director at Isotrak.

Stobart Group and Tesco have been using the technology since 2008. Stobart vehicles are fully integrated with Tesco's replenishment system, which has enabled Tesco to increase the number of supplier vehicles delivering to stores in place of its own vehicles. As a result, Tesco has now been able to hit its target of eliminating more than 480,000km and 400 tonnes of carbon dioxide from its transport operation.

There is a huge potential for such technology improvements to drive down rates of empty running in the future, Coe believes. Many vehicle manufacturers are now developing their own telematics hardware and in five years' time, he predicts, most trucks coming off the production lines at vehicle manufacturers will have a system of some sort built in as standard, allowing them to join networks such as 3iS. "Ultimately, it's about saving money and giving a better return to their shareholders, but most customers we have now are committed to a green agenda. We're seeing more and more collaboration in the market," says Coe.

Limiting liability

Steve Simmons on what activities are exempt from new rules on applying the five-stage waste hierarchy

Waste costs have risen relentlessly since 1997 following the introduction of the landfill tax. The pressure to control cost and ensure compliance has increased still further this year in England and Wales since the passing of the Waste (England and Wales) Regulations 2011. There is now a legal duty on anyone creating commercial or industrial waste to apply the waste hierarchy in deciding on the best way to deal with their waste. The hierarchy sets out, in order of priority, the waste management options to be considered by the producer:

1 prevention;
2 preparing for reuse;
3 recycling;
4 recovery (eg energy recovery); and
5 disposal.

From 28 September 2011 transfer notes, which are legally required when waste is transferred from one person to another, must also contain a declaration that the transferor has applied the waste hierarchy. This new duty will inevitably lead to many waste producers looking at their waste streams and trying to find alternative options that are further up the hierarchy. However, some waste activities remain exempt.

Permit conditions

Under the Environmental Permitting (England and Wales) Regulations 2010 (EPR), most forms of waste storage, treatment or disposal activity can only be undertaken under the authority of an environmental permit. This requirement applies not only to waste contractors, but may also apply to the original producer. Producers looking to deal with their waste in different ways, other than simply putting it in a skip for disposal elsewhere, need to be aware of this requirement as they may inadvertently stray into using forms of waste treatment requiring permits or other forms of legal authority before they can be undertaken.

Environmental permits entail costly application and subsistence fees, require technically competent management and generally set out numerous conditions that must be complied with. In order to facilitate storage, treatment and disposal activities that lead to environmental benefit and carry little environmental risk, there are defined circumstances where a person can undertake such activities without the need to obtain a full permit. These are referred to as exempt activities and they are set out in Schedule 3 of the EPR.

Even if the activity is exempt, there may be a requirement to register it formally with (usually) the Environment Agency (EA) and there may be conditions and limits placed on the activity.

Free from control

The first option that many producers will consider is segregating waste into different storage containers pending its transfer for recycling or recovery elsewhere. Sorting waste is a "treatment operation", but in most circumstances producers can do this without prior permission or registration, as this activity has a so-called Non-Waste Framework Directive exemption. This also allows producers to undertake simple forms of waste treatment where the operation does not result in a change in the make-up or composition of the waste, and is carried out purely to facilitate transport or separate collection of components.

This may include activities that, prior to the EPR, also had to be registered – such as compaction of paper and cardboard, shredding of confidential papers or the separation of recyclables from mixed wastes into separate storage containers. The ability to sort waste without registering exemptions or gaining a permit will be an obvious benefit to organisations keen to increase their recycling performance.

Another exempt activity that producers may consider is the temporary storage of waste on a site controlled by the producer. It enables the waste created elsewhere to be taken back to their main place of business for storage and transfer for recycling or disposal. This will be of particular value to builders and service companies, allowing them to take site waste back to their depot for storage in a skip. Again, there is no requirement to register this activity.

Registered exemptions

If an activity is not allowed for under the circumstances outlined above, it may be possible to operate under a registered exemption. There are four categories of activity that may be eligible:

Dr Steve Simmons is a consultant specialising in waste and environment management and training for The Key Consultancy

- use of waste;
- treatment of waste;
- storage of waste; and
- disposal of waste.

In Schedule 3 of the EPR, these are given codes prefixed with the letters U, T, S or D as appropriate. Before undertaking any of the listed activities themselves, or transferring waste to someone else who may wish to operate under an exemption, producers should check that the waste meets the definitions contained in the Schedule, and that, where required, appropriate planning permission is in place and the activity can be undertaken without risk of pollution or harm to health.

If all of the requirements can be met, the EA must be given advance notification using a registration form. Once registered, the activity is then permissible as long as the conditions are complied with. All but one of the defined exempt activities are free and last for three years, after which time they must be re-registered. Exemption T11 – "Repair or refurbishment of WEEE (waste electrical and electronic equipment)" – is a chargeable exemption (£840 for three years).

Low-risk waste

If the activity is not listed under the exempt operations there may be two further options to consider, which, although they are not legally defined in the EPR, would still allow some forms of storage, treatment or disposal without a permit. These are "low-risk waste" activities. It does not make the activity "legal", it simply allows it to continue without the risk of enforcement action.

There is a list of activities that the agency is prepared to allow to continue under its low-risk waste regulation policy on its website (www.lexisurl.com/iema9615).

Most of the activities listed are highly specific to particular types of activity or types of waste.

Paper trail

There is an old saying among lawyers that is particularly applicable to waste management: "Ending up in court is like going to the toilet: if you do not have a piece of paper with you it is a very messy business!" Legally dealing with waste involves a lot of paper – waste transfer notes, consignment notes, copies of contractors' permits or waste carriers' registration records, and waste exemption registrations.

Businesses keen to start diverting their waste from landfill need to determine whether any arrangements to apply the waste hierarchy, including diverting waste for reuse, recycling or recovery, are exempt or whether an environmental permit is required. It is worth remembering that innovation in waste management to improve environmental standards, although often well intentioned, can easily stray into illegality.

Swish, swish, swish ...

Stephen Tromans looks at the Court of Appeal decision on noise restrictions at wind farms

Last month's case law column reported on the Court of Appeal decision in *Hulme v Secretary of State for Communities and Local Government* [2011] EWCA Civ 638. Readers may also have watched the BBC 2 documentary series *Windfarm wars*, and the proposal by Renewable Energy Systems (RES) for a wind farm at Den Brook in Devon. One of the leading opponents was Mike Hulme, and it was his legal attack on planning permission given to RES that was the subject of the unsuccessful appeal to the Court of Appeal.

The challenge was made on nine grounds, with four relating to noise issues, and five to a variety of other issues. The noise grounds included that having recognised that a condition was required in order to control amplitude modulation (AM), or "blade swish", defective conditions had been imposed, in that there was no sanction to ensure compliance with the objective.

The principal question was whether the conditions as drafted were capable of achieving the objective of preventing inappropriate aerodynamic noise levels. The secretary of state submitted that, properly understood and in context, the conditions did envisage an effective enforcement of acceptable AM noise levels. On appeal, Hulme argued that the conditions failed to provide the proper enforcement mechanism, identifying the following reasons:

- **Absence of an enforcement mechanism** Although condition 20 (of the planning consent) defined what constituted excessive AM and identified how and where it should be measured, it said nothing about what was to happen if the levels of noise were excessive. Condition 21 required that a scheme be adopted to enable the measurement of the AM noise levels so as to evaluate compliance with condition 20 and identify when they exceeded the permissible level. The scheme had to be approved by the local planning authority, and then applied as approved. But condition 21 had not envisaged that the scheme should be designed to provide a mechanism for enforcement of the condition 20 standard; its purpose was simply to ensure that the relevant AM could be properly measured to see whether or not it complied. If AM levels exceeded permitted levels, there was nothing that could be done about it.
- **Condition 21** The appellant submitted that even if, contrary to the first argument, the scheme could incorporate an enforcement mechanism, once the developer could demonstrate compliance with condition 20, as agreed in writing by the local planning authority, the scheme then ceased to operate altogether. Thereafter the principles imposed by condition 20 could be ignored without any effective remedy.

Stephen Tromans QC, 39 Essex Street

Lord Justice Elias found on the second point that there was no doubt that condition 21 was not easy to interpret, but that it did not require that the scheme had to be implemented before the turbines could operate and that if there was compliance the scheme then terminated.

That would be implying a requirement that is not stated in the condition itself. It was never the intention that the scheme should terminate while there were still legitimate complaints to be assessed, and it did not have to be so construed.

That left the first question of whether it was possible to read into the conditions an obligation placed on the developers to comply with the requirements of condition 20. It plainly had been the intention that the standard set in condition 20 could be enforced in some way. However, condition 21 stated what the scheme is designed to do, namely to provide for the measurement of the AMs generated by the turbines and to evaluate compliance with condition 20.

Nothing was said at all about what was to happen if the evaluation demonstrated non-compliance. The clear intention was that the standard laid down in condition 20 should be met. It followed that there was an obligation on the developers to comply with the AM levels specified in condition 20 and that obligation would run for the duration of the planning permission. That obligation could be enforced by the planning authority in the normal way. Accordingly, the principal ground of appeal failed.

Noise, and especially AM, is currently a particularly problematic issue for wind farm projects. This decision demonstrates a pragmatic approach to what might be thought to be defective conditions, in order to make them work.

Pressing the button

the environmentalist finds out how Oxford company Seacourt is leading the way on sustainability in the printing industry

For such a small business, Seacourt has accrued an impressive array of environmental awards. Employing just 19 people in Oxford, the family-run print and design company has so far won numerous accolades, including the 2004 South East England Development Agency sustainable business award, the waste reduction category in the Environmental Pioneer Awards 2010 and the 2008 award for the European Eco-management and Audit Scheme (EMAS). The company also carried off the sustainable development trophy at the Queen's Award for Enterprise in both 2007 and 2011. All these awards are open to all companies across all industries.

Unsurprisingly, Seacourt has the environmental framework and credentials to warrant such a high degree of external recognition.

One of its key principles is to maintain an environmental management system that continually aims to reduce waste, effluent emissions and the use of scarce resources.

Seacourt has been IS0 14001-certified since 1998 and EMAS-accredited since 1999. The company has been independently verified as carbon-neutral, using 100% renewable green energy, is Forest Stewardship Council certified and does not have a single waste bin on-site.

Given that Seacourt uses a huge amount of resources for its printing activities, including 273 tonnes of paper annually, achieving zero waste to landfill is quite a feat.

"Over the past 15 years we have taken our company from being a standard dirty printer to become the first closed-loop, zero-waste company in our industry," says Seacourt chair Jim Dinnage. "We are now known for our radical approach to the environment and have been recognised by a global printing association as being at least 10 years ahead of any other environmental printer, including the Japanese!"

Waking up to environmental impacts

Seacourt's fundamental shift in its thinking about the environment happened almost by accident. In the early 1990s the company needed a new printing press and, because it fitted the required specification rather than any environmental goals, it settled on a waterless offset printer.

As a result of this purchase, Seacourt joined the industry's Waterless Print Association, a worldwide, non-profit trade association dedicated to waterless printing. Part of its mission is to promote the environmental advantages of the process and, in 1996, Dinnage and Seacourt's managing director attended one of the association's international conferences where they heard all about the environmentally damaging impacts of traditional printing processes.

For Dinnage, it was almost an epiphany: "I could not initially accept that offset lithography was so damaging to the environment but learned pretty quickly from a credible source that this type of printing fell into the same environmental risk category as mining, oil exploration and nuclear in terms of its impact."

The reason why printing is so harmful to the environment is not because of the large amounts of paper used, particularly if recycled paper is used. It is because printing with offset lithography demands the use of huge amounts of water and hazardous chemicals called VOCs (volatile organic compounds), which have significant chemical reactions that can affect the environment and human health.

Because VOCs evaporate very quickly, massive amounts are needed as part of the process; according to Dinnage, the amount of water Seacourt used for printing before switching to waterless offset would have been equivalent to around eight hosepipes trickling water 14 hours a day. "When I started researching the process it was a huge shock to realise the extent of the impact our operations were having on the environment," Dinnage adds.

on a print revolution

From that point onwards, he was determined to reverse that impact, even if it meant taking a significant business risk by investing in new machinery and transforming the company's day-to-day operations.

The journey to sustainability

Dinnage estimates that, of about 12,000 printers in the UK, fewer than 10 use mainstream waterless offset, so Seacourt really is one of the pioneering few. He says that waterless offset is not more expensive to operate once up and running, and the quality of the end product is better.

So why don't more printing companies make the change? "It's a huge business adjustment and there is the initial expense of either buying new machines or converting existing ones," Dinnage explains. "There is also the big issue of retraining staff and developing a whole new skill set, while trying to ensure that clients are happy with the quality at the same time as the business is undergoing that change process – and the profit margin is tight enough as it is."

Within the first year of the senior management team's environmental wake-up call, Seacourt had switched entirely to waterless printing, and there followed a two-year transition period – as the business climbed the learning curve of the new process – that was challenging for everyone employed by the company.

There were also the inevitable hiccups with clients as the company struggled to perfect the new printing process. But the senior management team was spurred on by its vision of becoming a cleaner printer, and the end result means that the company has reduced its VOC emissions by 98%.

Buying its first direct imaging press and converting other machines to waterless offset represented the biggest shake-up to Seacourt's operations following its adoption of more environmentally sound business practices, and it is these large-scale operational changes that have had the greatest power to reduce its environmental impact.

But the company started making a wealth of other changes as part of its new sustainability agenda. For instance, it introduced recycled paper exclusively and switched to vegetable-oil-based inks. It also bought and installed a water recirculation system to a pre-press machine, saving enormous amounts of water. Although the company was no longer using water as part of the printing process, Dinnage says it was using a lot in making its own litho plates for the new waterless system – roughly 135,000 litres a year. But buying and installing a machine that recycles the water has resulted in a 99.5% saving in water use for plate-making.

Zero waste to landfill

Seacourt has gradually been increasing its recycling streams since the start of its environmental journey; in the early days the company recycled straightforward waste such as aluminium-based litho plates, paper and cardboard. But it has now reached a point where absolutely everything is reused or recycled, including:

- aerosols;
- light bulbs;
- waste ink;
- polystyrene;
- plastics;
- CDs and CD cases;
- photocopier parts;
- rubber blankets; and
- tea bags.

The amount of water Seacourt used for printing before switching to waterless press was equal to eight hosepipes trickling for 14 hours a day

Some waste categories have proved a challenge to recycle or reuse in either their current or another form. As Kalpana Peigne, marketing manager, explains: "When we first started recycling, there weren't the recycling routes available that there are now, and we had to work hard to find a 'home' for some of our waste products."

Polystyrene is a case in point, but Seacourt has now found a way to deal with that item at the tail end of its life cycle: a recycling company collects it and turns it into an insulation material. Old CDs and CD cases are either given to customers or sent to Germany for recycling.

Seacourt's waste ink is placed in cans and a company collects it and turns it into pellets for fuel, used in furnaces that make cement.

We have gone from being a standard dirty printer to become the first closed-loop, zero-waste firm in the printing industry

One of the last bastions to withstand the recycling drive was not waste produced by the printing operations but from people – tea bags. "We're all big tea drinkers and the disposal of the used bags did pose a problem – but we found a solution," says Dinnage. The answer was to establish a wormery for waste food and the ubiquitous tea bags. One wormery proved inadequate for the workforce's char consumption and there are now four. The wormeries produce a very useful, rich compost which is bottled and given to friends and clients, including *the environmentalist*.

Dinnage says that 14 October 2009 was a momentous day for Seacourt – it was when it sent its last shipment to landfill. The company used to send at least six wheelie bins' worth of rubbish to the same landfill site each week, so zero waste to landfill is regarded as a unique achievement, certainly within the print industry.

A return on investment?

What Seacourt's environmental agenda costs, or benefits, the business is a fine balancing act. On the plus side of the financial equation, the company undoubtedly saves a significant amount by using so little water, and it also no longer buys the expensive, hazardous chemicals that printing lithography needs. Unlike the vast majority of other printing operations, virtually the only water Seacourt uses is for tea and toilets. On the negative side, the type of litho plates required for its waterless printing are much more expensive. And, remarks Dinnage, the company could save around £20,000 a year by using non-renewable energy. "But if we did opt for cost savings over environmental savings, where would we draw the line?" he says.

Overall, it costs the company to recycle most waste products as it has to pay external companies to do so. But some recycling streams attract a small income, most notably its used litho plates because the aluminium can be reclaimed. However, Seacourt donates a significant proportion of the proceeds from its recycling activity to a local wildlife charity.

14 October 2009

Date when Seacourt sent its last shipment of waste to landfill

The company's environmental credentials and commitment are a prominent part of its corporate brand, featuring strongly on its website. When asked what its sustainability agenda means to its clients, Dinnage says that it has a loyal client base, with high customer retention rates. As he comments: "Our clients made this journey possible because their patience was needed as we made the transformation. But now they have a better-quality product and have been able to share in our success."

From the outset, Seacourt has also been keen to engage employees in its sustainability agenda – a necessary step as changing its operations had a direct impact on the people operating the machinery. Most employees welcomed the opportunity to expand their skill set by switching to a waterless process, and all are actively involved in the company's many recycling activities. The health advantages of not working with VOCs were also a strong selling point.

Where now?

When asked if there are any learning points from the work Seacourt has undertaken to turn its printing process around and become a cleaner printer, Dinnage has only one: he wishes the company had done it sooner. The one challenge that confronts the company is where to go from here. Ongoing certification under its environmental management systems demands proof of continuous improvement, and although Dinnage says the company hasn't finished on its sustainability journey yet, it becomes harder and harder to make significant progress because so much is already being done.

Recognising itself as an exemplar in environmental practice, not only within its industry but on a UK and even European platform, for well over a decade now, Seacourt has been organising and hosting external seminars on sustainability issues. Several of these have taken place at the House of Commons, with high-profile speakers in the field and environmental organisations including MPs, WRAP and Biffa, the specialist waste management company.

"Apart from raising debate on environmental affairs, these events help Seacourt to demonstrate its commitment to, and act as an ambassador for, this agenda," says Peigne. The firm uses the conferences as an opportunity to invite clients as delegates so that they too can share in the debate.

Back at his Oxford office, Dinnage ruminates about the possibility of waterless toilets – the company's water supply would then be reduced solely to tea-making activities …

A year of solar power: the verdict

Last year, **Dr Mark Everard** reported on the installation of 17 photovoltaic panels on his house in North Wiltshire. Now, one year on, how has the system performed?

Our photovoltaic (PV) system was installed on 22 May 2010 and, as April 2011 progressed, we grew obsessed with seeing if we'd reach a largely arbitrary, but nevertheless nicely rounded, total of three thousand kiloWatt hours (kWh) in the first year. That milestone was passed on 10 May, and by the 12-month anniversary on 22 May, the panels had generated 3,165 kWh, averting 1.7 tonnes of CO_2 emissions. That means the 17-panel system has performed 25% above projected generation over its first year. Performance has varied on a daily basis, from three successive lows of 0kWh generated, when the panels were covered in snow, to a "record high" of around 22kWh. Output closely tracked weather, day length and moment-by-moment changes in sunlight. On a clear day, output was a beautifully symmetrical "bell curve" on the read-out, but it turned rather "spikey" when clouds scudded across the sky.

Financial performance

Our motivation for installing the PV system was almost entirely values-based, but it certainly had to pay its way. People in the industry tell me that most investments in home-scale PV are not justified on sustainability grounds but because homeowners with spare cash anticipate better financial returns than from currently low bank or building society interest rates. But did it stack up financially for us in the first year? Well, the bill for the quarter ending June 2011 recorded a credit of £42.34.

More importantly, a rosy picture has emerged across the year. Allowing for some assumptions, the bottom line for the first year was a healthy overall benefit of £1,604.94.

This comprises feed-in tariff (FIT) payments over the year of £1,332.82, covering payments for energy generated, whether consumed or not, in addition to 3p per unit of energy deemed to be fed into the national grid, as well as a £272.12 saving on electricity consumption – compared with the previous year's bills. This shortens the theoretical payback period to around nine years – against a projected 11 plus years – over which there is a return on investment of nearly 11.5%, and beyond which there is pure profit.

Dr Mark Everard is visiting research fellow at the University of the West of England, and author of a number of books, including *The business of biodiversity*.
www.markeverard.co.uk

BUSTING COMMON MYTHS

Dr Mark Everard's photovoltaic (PV) system and his earlier articles for *the environmentalist* promote the sustainability virtues of PV, but the technology continues to be accompanied by myths. Here he tackles the common ones.

- *Does it heat water?* PV systems convert light (photo-) into electricity (-voltaic), whereas solar thermal systems trap heat, warming water running through them. These are different systems entirely, although some hybrid products are just entering the market.
- *Isn't it really complex, and doesn't it require rewiring?* No, PV panels attach to metal rails on the roof, their direct current output is routed to an inverter unit in the loft which converts this to alternating current, and this goes via a meter into a spare gangway in a normal domestic fusebox. No other wiring is required.
- *Isn't it really complicated to use?* Not at all. A clever (also solar-powered) box sits on the windowsill and receives wireless signals from the generation meter, providing instantaneous, daily and month-long read-out data.
- *This type of new technology is bound to go wrong, isn't it?* PV has been around a long time, and is the basis of a mature and substantial global industry. The technology is not only reliable and proven, but comes with long warranties.
- *Why do planners tell me that I can't have them on my house?* Some planners remain ignorant of the law or else are just plain obstructive. My house is in a conservation area – an often cited obstruction – but has a PV system that was installed quite legally, even though planners initially told me it could not be installed. Part 40 of the General Permitted Development Order allows them to be installed.
- *What if the government scraps feed-in tariff (FIT) payments, the main economic driver?* It may eventually do so for new entrants, as we are seeing for large-scale systems, but a registered PV system constitutes a 25-year contract with payments not only guaranteed but index-linked.
- *A company has offered to install panels for free and I get to keep the free electricity, isn't that good?* No. The company is proposing to use your roof to receive FIT payments, the overwhelmingly largest proportion of the benefit of a PV system. Your energy savings will be modest.

Of course, there may eventually be a small drop-off in system performance with age. But, with energy companies recently announcing significant increases in electricity prices, the financial savings are likely to increase further.

The jury is still out over a couple of issues, however. The first concerns locking yourself into a technology for 25 years.

How will the PV panels look and perform by 2036? The safety net here is that PV installations are guaranteed, and the FIT is contracted for 25 years. So, regardless of the emergence of shinier, newer and more efficient technologies in future, the benefits are known.

The impact of a PV system on the value of a property is also currently largely untested. Some claim that PV systems can only add value as new occupiers become eligible to receive FIT payments. Others suggest that the value of a property to prospective buyers who do not like PV systems will be diminished. Opinions vary, but clear evidence is yet to emerge.

A positive glow

Notwithstanding these questions, the balance of benefits of PV installation is otherwise pretty clear. We are saving carbon emissions, becoming a net supplier of electricity, benefitting financially from it, promoting an industry with a future, spreading the learning and making physical and visible our commitment to sustainable development.

Unfortunately, the government's fast-track review of the FIT for bigger plants (50kW and over) has stifled investment in large-scale solar and other renewable-energy technologies by the agricultural sector and municipalities, such as Cornwall County Council.

The silver lining to this dark cloud is that domestic-scale tariffs continue unchanged. Not only has the FIT remained in place for domestic PV installations but promises by the government to keep it index-linked have been honoured.

Last financial year, the FIT for domestic PV stood at 41.3p per unit. This increased from 1 April 2011 to 44.3p, in line with the retail prices index rise of 4.8%. Annual FIT payments for a typical 3kW peak system should rise by around £50 as a result.

The FIT has in fact been a great success in driving uptake of renewable-energy systems. Official figures reveal that 28,608 photovoltaic systems, out of a total of 30,263 renewable-energy installations (also including hydropower, wind, micro-CHP and anaerobic digestion), were registered within the first financial year of the scheme, which started in April 2010.

But so much more could have been achieved in the UK. Germany's solar sector now employs 133,000 people and is worth €10 billion a year. It has installed capacity of 17,000MW, with more coming on stream under a national strategy to phase out coal and nuclear generation in a climate-challenged, post-Fukushima – the site of the recent nuclear disaster – world.

Meanwhile, the UK's paltry 75MW of installed PV capacity and the backtracking on support for larger systems signals that it is unlikely to make an equivalent quantum leap, with all the benefits this would bring.

Footprint size

Wendy Buckley explains how to start measuring an organisation's greenhouse-gas emissions

The term "carbon footprint" has become common in environment management and is seldom off media or boardroom agendas. It is a measure of the impact business activities have on the environment in terms of the amount of greenhouse gas (GHG) produced, calculated in units of CO_2 equivalent (CO_2e). Organisations need to assess and manage their carbon emissions, not just to meet regulatory needs and to save energy costs, but to give competitive advantage. So, what are the practicalities of measuring your footprint?

What to measure?

Clearly the pressure is on for businesses to assess their carbon footprints. But what needs to be reported and measured? First, you need to make a decision on whether you should calculate your organisational footprint or product/service footprint.

Organisational footprinting is the main focus of this article , and is usually repeated on an annual basis. However, products and services can also be quantified and best practice for this is the Publicly Available Specification 2050 (PAS 2050), also known as product life cycle analysis (LCA). LCA calculations take into consideration emissions associated with:

- sourcing raw materials and their transportation;
- the production, manufacture and packaging of goods; and
- their distribution, retail, use and end-of-life.

By their nature, LCA calculations are far more involved than organisational carbon footprint projects and the former often involve weeks – even months – of work (and cost!) depending on product/service complexity and access to supply chain partner data.

How to calculate your footprint

Once you have decided on what to measure, the process for measuring and managing your carbon footprint includes the following key steps:

1 Define the organisational boundary.
2 Collate all source data (include all GHGs, not just carbon dioxide).
3 Perform calculation (using Defra metrics).
4 Analyse and benchmark performance.
5 Input results into carbon management plan.
6 Report.

An organisational carbon footprint is based on the emissions of the business. The methodology for footprinting is described by ISO 14064 and the GHG Protocol defines the scope of these emissions. You must establish at the outset realistic "operational boundaries" for your calculations; these boundaries should always be disclosed when you report your carbon footprint.

There are two main types of emissions: primary and secondary. Primary emissions are those that can most realistically be controlled and managed. Calculating and managing secondary emissions is much harder, but you should be considering your secondary emissions if at all possible.

There are two principal causes of emissions: the energy used in buildings and travel emissions. This encompasses electricity use, burning oil or gas for

Dr Wendy Buckley is commercial director at Carbon Footprint and current National Women on their Way award winner

MAIN TYPES OF EMISSIONS

PRIMARY FOOTPRINT

Activity	Scope
Electricity, heat or steam generated on-site	1
Natural gas, gas, oil, LPG or coal use attributable to company-owned facilities	1
Company-owned vehicle travel	1
Production of any of the six GHGs	1
Purchased electricity, heat or steam	2
Employee business travel (using transport not owned by the company)	3

SECONDARY FOOTPRINT

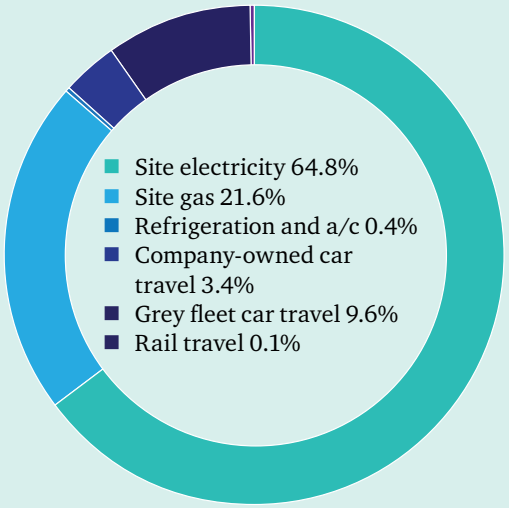
Activity	Scope
Employee commuting	3
Transportation of an organisation's products, materials or waste by another organisation	3
Outsourced activities	3
GHG emissions from waste generated but managed by another organisation	3
GHG emissions from the use and end-of-life phases of an organisation's products/services	3
GHG emissions arising from the production and distribution of energy products, other than electricity, steam and heat, consumed by the organisation	3
GHG emissions from the production of purchased raw or primary materials	3

heating, and fuel consumption as a result of business travel or distribution. The primary footprint corresponds to elements within scopes 1, 2 and 3 of the GHG Protocol. The secondary footprint is a measure of the indirect emissions from a company's upstream and downstream activities, typically from outsourced/contract manufacturing, and products and services offered by an organisation. The secondary footprint corresponds to scope 3 of the GHG Protocol, excluding employee business travel (see panel, above).

It is more typical for organisational calculations to focus on the primary footprint, as this lies under its control. You will need access to information on all these datasets to compile your carbon emission calculation. If this seems onerous, then don't lose sight of the fact that typically businesses waste 30% of all energy they use, which is a huge potential cost saving that can only be identified by following this process. However, while datasets on building energy use are easily found, travel data can be harder to locate and more fragmented – data is often held within finance teams and sometimes within human resources, if it relates to claimed expenses.

Once you have all the relevant data, it needs to be converted from its native units – for example, kWh of electricity and gas or litres of diesel fuel – into tonnes of CO_2e. This involves applying the appropriate carbon

EXAMPLE OF A FIRM'S CARBON FOOTPRINT



emission metrics. Defra publishes these on a regular basis (www.lexisurl.com/iema8496). Although the calculation seems easy, the complexity of the organisation will determine the time and resources you need to complete the assessment. Other complexity arises if your business shares facilities with other parties, for instance, or you need to apportion carbon to a particular business subsidiary from its corporate parent.

A number of carbon footprint measurement software tools are available; some are free to use and available online (for example: www.lexisurl.com/iema8447) and others are geared towards particular sectors, such as manufacturing (www.lexisurl.com/iema8448). There is also a range of commercially available carbon management software now emerging in the marketplace. The best tools use ISO 14064 methodology, the GHG Protocol and metrics from a recognised database, such as the Defra one.

The results

A simple pie chart or bar chart representation is often the easiest way to interpret your current emissions status (see example above). This will provide a snapshot of your current performance and enable the organisation to prioritise resources in areas contributing most heavily. The example footprint reveals that emissions from electricity consumption dominate. This might indicate significant overnight electricity draw from the building. Possible causes, such as lighting or PCs being left on, should be investigated in this instance.

It is also valuable to benchmark current performance against other similar businesses. Although current data resources are a little patchy, useful data is becoming available and is commonly expressed in terms of tonnes of CO_2 per employee/by sales turnover.

Once you have completed your carbon footprint calculation, use it as a baseline emission level for targets and monitoring ongoing performance.

Institute responds to consultation on greenhouse-gas reporting

Reporting IEMA has responded to Defra's consultation exercise on whether regulations should be introduced to make it mandatory for certain UK companies to report on their greenhouse-gas (GHG) emissions. As widely reported over the past year, IEMA supports a mandatory reporting requirement for all large companies – option 3 in Defra's consultation – and has now submitted a response, which draws on direct evidence from IEMA members gleaned from surveys and workshops.

The response challenges some central aspects of the consultation's accompanying impact assessment. Critically, this included assumptions relating to costs and benefits over time and to the value of GHG reporting (see also p.4). The IEMA response addresses the specific consultation questions and presents practitioner-sourced evidence and information on the benefits, costs

and value of GHG reporting. Summary findings and analysis from the June 2011 survey of IEMA members on GHG reporting are also included. The full IEMA response is available from www.lexisurl.com/iema10649.

For enquiries about IEMA's work on GHG reporting, please contact Nick Blyth, senior adviser for climate change, at n.blyth@iema.net.

Scottish green awards

Awards IEMA is supporting the Scottish green awards, created by *Scottish Business Insider* in association with ScottishPower, for the third consecutive year. This high-profile annual event promotes Scotland as a country that encourages sustainability, tackles climate change and is committed to improving energy efficiency. The entry period closed at the end of July but shortlisting and judging is currently taking place. The awards will be presented on Thursday 29 September at the Glasgow Science Centre. IEMA's policy director, Martin Baxter, is on the judging panel and will present one of the awards. Eight IEMA members from the three Scottish regions will also attend the awards, seated at a table hosted by Baxter. The winners will be revealed in the October issue of *the environmentalist*.

Tickets to attend the awards ceremony and sponsorship opportunities are still available. Visit www.lexisurl.com/iema10653 for more details.

Media focus on environmental skills

Survey As part of a constant commitment to creating a sustainable future through the development of environmental skills, knowledge and thought leadership, IEMA dedicated the month of June to profiling the value of environmental roles within organisations. Beginning with a UK membership survey and the launch of the competency framework, the campaign achieved significant coverage in the *Guardian*. Entitled "Turn green for a fresh start", the article used key findings from IEMA's recent environmental skills and talent survey to demonstrate the high number of professionals entering environmental roles from other sectors and the high levels of satisfaction reported by those career changers. Go to www.lexisurl.com/iema10658 to read the article.

A well-attended and lively webchat on 29 June followed the *Guardian*'s article. Many other environment, business and human resources publications also featured our messages on the rate of individuals joining the profession and the value of the competency framework.

Short cuts

More e-briefings

Members are encouraged to download the second and third documents from the series of IEMA's new e-briefings. The second briefing – *Schemes and standards for GHG reporting*, accounting and management – provides an overview of the many existing and emerging schemes that are in place to manage carbon and other greenhouse-gas emissions. The third in the series, *Carbon neutrality*, focuses on the various schemes, standards, benefits and business-case considerations around the carbon and climate neutrality issue. The series of member-only documents will be extended throughout the rest of 2011 and beyond. You can find the e-briefings in the members-only reading room at www.lexisurl.com/iema10650. Why not subscribe to the RSS feed button so that you will always have access to these exclusive and useful documents?

Graduate Award 2011: judges ready for entries

The judging panel for the 2011 IEMA Graduate Award is now ready to receive award entries. The 2011 panel features individuals from the private, academic, media and not-for-profit sectors. Each judge has an interest in helping to develop and promote the environmental skills and talent of early career professionals.

The judges are:

- Dave Farebrother – Land Securities Group (sponsor)
- James Thorne – IEMA
- Garry Cornell – ERM
- Diana Montgomery – Chemical Industries Association
- Jane Newbold – University of Hertfordshire
- Paul Suff – editor of *the environmentalist*
- Sherry Palmer – McLoughlin & Harvey (IEMA Graduate Award winner 2010)

The entry period closes on Friday 30 September. Full entry details are available at www.lexisurl.com/iema10651.

First members to achieve the new IEMA Diploma in Sustainable Business Practice

Qualifications More than 25 delegates have now advanced their strategic environmental knowledge through the IEMA Diploma in Sustainable Business Practice (DipSBP).

Officially launched in *the environmentalist* in March, the Diploma supports Associate members requiring an advanced environmental qualification to drive strategic change in their organisation and influence decision making at board level.

It builds on the knowledge and understanding gained through completion or achievement of IEMA Associate membership (65% of IEMA members are Associates), broadening an individual's knowledge and understanding beyond their immediate role or sector.

The Diploma provides a supporting framework for Associate members to develop their knowledge and understanding to the level necessary to accomplish Full membership.

Because the Diploma is aimed at members who are working in a business environment, it has been structured to integrate with working life, and the assignments are often based on work-related practices and real-life examples, making the workload, although challenging, achievable.

To date, 27 delegates have now proved this by undertaking and passing the DipSBP. IEMA would like to congratulate each of the following on their success.

- Darren Amos
- Charles Carradine
- Robert Clegg
- Michael Cox
- John Fanning
- Mame-Coumba Faye
- Mike Fenton
- David Forbes
- Adrian Garrity
- Andrew Harris
- Mark Hewitt
- Marcele Hornshaw
- Kamaljeet Singh Jabbal
- Owen Landon
- Jonathan Lee
- Paul Lyons
- Tony Marlowe
- Robert McConville
- Barrie McQueen
- Daniel Oldfield
- Jason Posner
- Emma Saych
- Davis Starling
- Ian Tennant
- Caroline Thomson
- Kay Wagland
- Andrew Wilson

Each of the delegates so far has studied with EEF's Woodland Grange. Wayne Roden, course manager of the IEMA Diploma at Woodland Grange, said: "On behalf of EEF and Woodland Grange I'd like to congratulate the IEMA Diploma graduates. While this course is intense and requires an admirable level of dedication, the knowledge and experience gained through study and the class work is unrivalled. The graduates have been able to take what they've learned back to their workplace, apply the concepts, techniques and processes covered in the syllabus and really make a difference, delivering benefits both for environmental and business performance in meeting the challenge of sustainability. I know that the rest of the EEF team and IEMA are looking forward to welcoming many more Diploma delegates in the months and years to come."

The DipSBP is currently being rolled out to a number of approved training providers. EEF Woodland Grange will continue to offer the Diploma alongside their other IEMA approved courses.

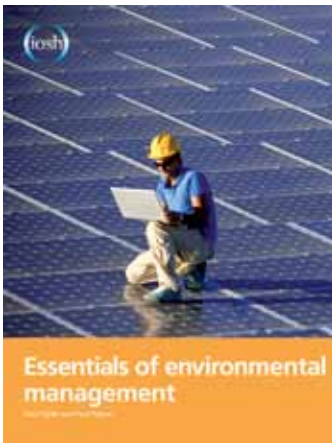
Full details can be found at www.lexisurl.com/iema10655.

IEMA EVENTS

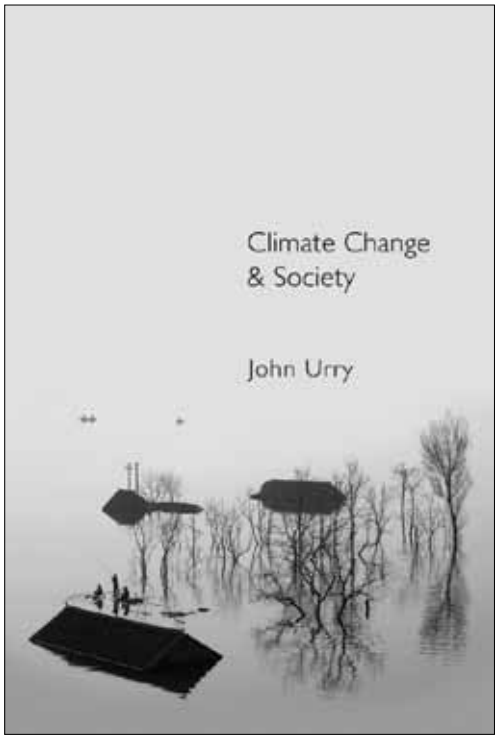
Date	Region	Topic
Regional events		
7 September	South East	Social
8 September	North West	Cleveleys' innovative and low-carbon coast protection scheme
8 September	South West	Green drinks (Southampton)
28 September	South West	Green drinks (Bristol)
4 October	North West	Eco-house visit
5 October	South East	Social
13 October	South West	Green drinks (Southampton)
26 October	South West	Green drinks (Bristol)
CPD workshops		
7 September	Yorkshire & Humber	Guiding you through the screening and scoping process for EIA
14 September	North West	Get your message across: environmental communications
28 September	Midlands	Environmental law and legislation
Membership workshops		
16 September	North West	Full and CEnv membership workshop (Manchester)
21 September	South East	Full and CEnv membership workshop (London)
27 September	Midlands	Full and CEnv membership workshop (Peterborough)
29 September	Midlands	Associate Open Book workshop (Birmingham)
6 October	Wales	Full and CEnv membership workshop (Cardiff)

Essentials of environmental management

Paul Hyde and Paul Reeve / IOSH, supported by IEMA / Paperback: £30 / ISBN: 978–0–9013–5748–9



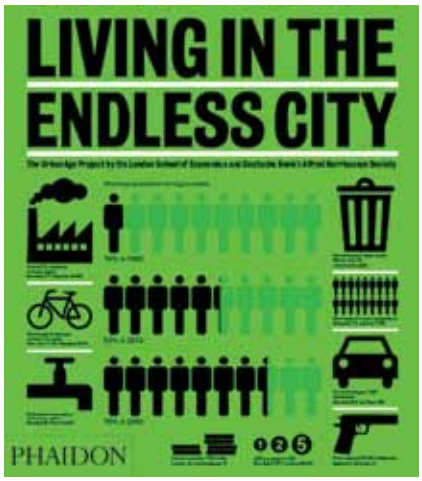
BOOK This popular book is now in its third edition and continues to be one of the best introductory texts to environmental management. There is discussion of the interaction between business and the environment, the different tools for assessing environmental impacts, operational control and more strategic issues, such as sustainable development and corporate social responsibility. The key to the book's enduring appeal is its clear structure and practical approach. The chapter on environmental management systems (EMSs), for example, takes the reader through the various stages and processes involved in establishing an effective EMS, from developing an environmental policy to allocating responsibilities and providing training. Both authors have a wealth of experience of environmental management, which is apparent in the pages of the book. A must-read for those wanting a good, comprehensive, practical introduction to environmental management. It is also excellent for students studying for formal environmental qualifications.



Climate change & society

John Urry / Wiley-Blackwell / Paperback: £15.99 / ISBN: 978–0–7456–5037–1

BOOK Climate change will have a devastating impact on the environment, but it will also fundamentally alter many of the institutions and behaviours that are key to modern society. John Urry, a professor of Sociology at Lancaster University, argues that climate change, which has so far been explored mainly from an economic perspective (such as by the Stern Review), should also been seen through the sociological prism. While many existing social processes – from political systems and working practices to consumer behaviour – contribute to a high-carbon lifestyle that rests on coal and oil, they also hold the key to a low-carbon future, says Urry. He explores different future scenarios, including how the depopulation of cities such as Detroit – which he describes as an example of nature reclaiming the "carbon world" – could become the norm in many places around the world unless low-carbon systems are pursued. A good read.



Living in the endless city

Edited by Ricky Burdett and Deyan Sudjic / Phaidon Press / Hardback: £39.95 / ISBN: 978–0–7148–6118–0

BOOK This fascinating book – the outcome of work by the London School of Economics' Urban Age project and Deutsche Bank's Alfred Herrhausen Society – explores the physical and social dimensions of living in three of the fastest growing mega-cities: Mumbai, São Paulo and Istanbul. It examines the biggest issues facing these ever growing cities, such as globalisation, immigration, jobs, social exclusion and sustainability, through remarkable photographs and revealing statistics and maps on everything from murder rates to environmental impacts. Did you know, for example, that 2% of the earth's surface is occupied by cities containing 53% of the world's population? Or that the population of Istanbul has soared from 1.2 million in 1950 to 12.9 million in 2010? The lives of the inhabitants of the three cities are also contrasted with those of other city dwellers, mainly in the developed world. The average New Yorker emits 20 times more CO_2 than an average Mumbaikar, while daily water consumption in the Indian city is 90 litres (on a per capita basis) compared with the equivalent measure for New York of 607 litres. A wonderful book for everyone interested in urban development and environmental limits.

Peter Barden

Technical director, Future Perfect

Why did you become an environment professional? My interest in, and love of, the natural world dates back to my school days. I studied agricultural science and forestry at university with the aim of going into forestry management. However, things did not work out as planned and I started work in the wood industries. It was extremely interesting.

What was your first environment job? I suppose this depends on how you look at it. My first summer job was as a soil surveyor for the Forestry Commission. My first full-time job in the environmental field, however, was to set up SGS's Forest Stewardship Council (FSC) certification programme, Qualifor. This was the first sustainability certification programme to link environment, social and economic considerations to an analysis of the supply chain.

How did you get your first environment role? I wish I could say this was by design, but it was more a question of being in the right place at the right time. My previous job had been declared redundant and I was in need of a new challenge, when the three-month contract to join SGS and help set up the FSC programme came along. Fortunately, I had a mix of qualifications and experience that were suited to the task. Within weeks I was offered a full-time contract and I haven't looked back.

How did you progress your environment career? From forestry, wood industry and supply chain work, I moved into broader environment management consultancy, certification and training, together with corporate social responsibility and emissions trading. I have been lucky enough to be at the forefront of many new areas and initiatives, the latest of which have been in renewable energy and sustainable biofuels. Throughout my career I have maintained a close link with IEMA and I am proud to be a Fellow and a principal environment auditor.

What does your current role involve? My role is typical of a technical lead in any environment consultancy. I have overall responsibility for the delivery of high-quality projects, using a mix of directly employed team members and associates. Our areas of work broadly divide into three: acting as auditors or verifiers, offering traditional consultancy services, and training development and delivery. My other responsibilities are the training and mentoring of junior staff.

How has your role changed over the past few years? One of the most exciting things about working in the environment area is that things never stand still. Client needs are forever changing as a result of internal drivers, external stakeholder pressure and, most commonly, legislative changes. This inevitably creates a range of challenges for our clients and opportunities for us as environment professionals.

What's the best part of your work? The great joy of the environment profession is that it can take you into areas and industries you would not otherwise have the chance of seeing, and there are always new challenges so you never get bored.

What's the hardest part of your job? In constantly changing times the biggest challenges is keeping up to date.

What was the last development course you attended? An international sustainability and carbon certification workshop in Hamburg. It gave me an appreciation of the German perspective on implementing the EU Renewable Energy Directive.

What is the most important skill for your role and why? The ability to see the complete picture. Sustainability has to be a balance of equal parts and economics has to be as important as environmental and social issues. Setting sustainability in the true business context is critical.

CAREER FILE

Qualifications
MA (Oxon), MSc, MBA, FIEMA, MIWSc, CEnv

Career history

2003 to now:
Director, Future Perfect

2000–2003:
Manager, KPMG Sustainability Advisory and Certification Services

1997–2000:
Principal environment auditor and senior training consultant, SGS

1993–1997:
Programme manager, SGS Forestry

1989–1993:
Technical manager, Raab Karcher

1984–1989:
Midlands regional officer/senior regional officer, TRADA

1978–1984:
Various roles, Mallinson Denny Group

Where do you see the environment profession going? The profession will have to continue to evolve, especially in light of an ever increasing regulatory framework.

Where would like to be in five years' time? Building on what I have achieved to date and taking Future Perfect on to greater things.

What advice would you give to someone considering going into the environment profession? You need to be flexible, adaptable and willing to keep up to date. If you want an exciting and interesting career in which to make a difference, then this is the job for you.

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Bristol/South West
£Comp
Ref: EN0440

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Cheshire
£20–30k
Ref: 5251

Geo Environmental Manager

Nottingham
£40–50k
Ref: MT2011/08/GeoMa

Senior Environmentalist

Kent
£Neg
Ref: CG/HQ00010642

Environmental Specialist

UK Sites
£40–50k
Ref: MXN00025

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