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IEMA
Saracen House
Crusader Road
City Office Park
Tritton Road
Lincoln LN6 7AS
tel: +44 (0) 1522 540069
fax: +44 (0) 1522 540090
info@iema.net
www.iema.net

Editor
Paul Suff
paul.suff@lexisnexis.co.uk

Deputy editor
Sarah-Jayne Russell
sarah.russell@lexisnexis.co.uk

Managing editor
Louis Wustemann
louis.wustemann@lexisnexis.co.uk

Sub-editors
Brenda Morris
Angela Partington

Head of sales
Dan Wild
tel: +44 (0) 20 8212 1995
dan.wild@lexisnexis.co.uk

Recruitment advertising
Elaheh Umeh
tel: +44 (0) 20 8212 1984
elaheh.umeh@lexisnexis.co.uk

Senior marketing executive
Victoria Newman
victoria.newman@lexisnexis.co.uk

Design
Jack Witherden
jack.witherden@lexisnexis.co.uk

Advertisement production
John Woffenden
john.woffenden@lexisnexis.co.uk

Director of news and insight
Tristan Hilderley
tristan.hilderley@lexisnexis.co.uk

IEMA communications coordinator
Katrina Pierce
k.pierce@iema.net

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The heat is on

Capping global temperature rise at 2°C above pre-industrial levels by the end of the century is looking increasingly like a forlorn hope. COP 18 concluded with the usual warm words but very few concrete actions. Although the statement on the outcome of the Doha talks claimed governments had taken the next essential step in the global response to climate change, we are no clearer on what any future climate agreement will look like. The only positive thing to come out of COP 18 was an agreement on a second commitment period for the Kyoto protocol. It will run to 2020, but involve a smaller number of countries, accounting for just 15% of global emissions.

The sense of urgency that accompanied discussion at earlier COPs slipped away as the world fell into recession and policymakers turned their focus on averting economic collapse. Yet, we are edging closer to the climate cliff edge. Accountancy firm PwC warned

> Global leadership on climate change has gone missing, while the UK's self-styled "greenest government" has downgraded environmental concerns in its pursuit of gas

in November that, at current rates of reduction in major economies' carbon intensity (carbon emissions per unit of GDP), the world is heading for at least 6°C degrees of warming by 2100 rather than 2°C.

Carbon intensity needs to fall across the world by an average of 5.1% a year for the next 39 years, concluded PwC, a level of performance that has never been achieved. And, with the burning of fossil fuels, particularly coal, rising (p.5), we're unlikely to come anywhere near such a figure.

Global leadership on climate change has gone missing, while in the UK the self-styled "greenest government" has downgraded environment concerns in its pursuit of gas. This year, the UK hosts the G8 summit for the first time since 2005. Eight years ago, the threat of climate change was placed firmly on the agenda by then prime minister, Tony Blair. Number 10's current incumbent, David Cameron, recently issued his list of priorities ahead of the Lough Erne summit in June and climate change is missing. The omission comes despite the past 12 months providing a real insight into the kind of extreme weather events that will only become more common as the world gets hotter.

Paul Suff, editor

Short cuts

14001 uptake slows

The number of ISO 14001 certified environment management systems reached a record high in 2011, but rates of uptake are slowing reveals ISO. In its annual survey of management system certificates issued globally, the standards body confirms 267,457 certificates against 14001 had been awarded across 158 countries by the end of 2011. The total is 6% higher than in 2010, but the growth rate is only half that of the previous year, which saw certifications rise by 13%, and is the smallest percentage rise since the standard was launched in 1999. In the UK, 15,231 certificates were issued, leaving it fifth in the table of countries with the highest number of certificates – behind China, Japan, Italy and Spain. ISO's research also reveals that adoption of the new energy management systems standard ISO 50001 was slow. Following 50001's publication in June 2011, just 461 certificates were issued across 32 countries by the end of the year. The greatest number of certificates were issued in Spain, Romania and Sweden; meanwhile in the UK 11 certificates were awarded.

Sepa's flood warning

The Scottish Environment Protection Agency (Sepa) has set out its flood warning strategy up to 2016. Sepa was given new responsibilities under the Flood Risk Management (Scotland) Act 2009 as part of a country-wide approach to reduce the risk of flooding in Scotland. The new strategy covers the first planning cycle set out in the 2009 Act and explains how the regulator will maintain and develop its flood warning service over the next four years. The strategy has been developed around seven strategic areas: flood detection and monitoring, which addresses requirements to support Sepa's monitoring network (rain and flow gauges, as well as radar); surface water flooding; coastal/tidal flooding; river flooding; uncertainty in flood predictions; flood warning service development; and skills, expertise and knowledge.

Renewables cheaper than gas

Investing in low-carbon energy sources over the next decade will result in lower electricity prices than whole-scale deployment of unabated gas, predicts the committee on climate change (CCC).

In its latest analysis of energy prices, the CCC concludes that by 2050 wholesale electricity prices would be more than three times higher with a gas-based energy system than if the UK had largely decarbonised its electricity supply.

While the report concedes that in 2020 energy bills will rise as a result of low-carbon policies, it argues that the increases will be lower than those seen in recent years from hikes in gas prices.

According to the CCC, commercial and industrial energy bills in 2020 will be 20–25% higher than today to help pay for renewables and carbon reductions. This compares with the 110-140% rise in energy costs between 2004 and 2011, mainly due to changes in wholesale gas prices.

"Adopting a strategy which invests in low-carbon technologies ... provides a portfolio of energy sources as insurance against the risk of high gas prices," commented Lord Deben, chair of the CCC. "It lessens the impact on household bills in the long term and enhances the competitiveness of UK industry."

Companies can offset the costs of increased energy bills by 8–10% by becoming more energy efficient, says the CCC, but stronger incentives are needed.

Meanwhile, the environment audit committee (EAC) warned the government that it risked rewarding energy-intensive firms with its proposed scheme to compensate companies for the indirect costs of climate change policy on energy bills. MPs concluded it was "nonsensical" to compensate businesses for the impact of the EU emissions trading system (ETS), for example, when they were benefiting from selling excess allowances.

"The government shouldn't throw good money after bad by giving compensation to those already making windfall profits from the ETS, when allowances were allocated free of charge," said Joan Walley, chair of the EAC. Across the EU, allowances worth €4.1 billion have been accrued by industry.

Firms walking into resource crisis

A poll of companies has found that most are unprepared for the impact of resource scarcity, as boards fail to grasp the business case behind sustainability.

A Carbon Trust survey of 475 senior managers at listed companies in the UK, the US, Brazil, Korea and China, reveals that just 20% of firms are taking action in preparation for resource scarcity, with 46% confirming that they do not foresee the need to make significant changes in their operations before 2018.

When asked about specific resources, respondents confirmed that they thought carbon emissions were likely to become critically important to their business in 2015, followed by water in 2018, electricity in 2020 and natural resources, such as rare earth metals, in 2022.

Despite this, 43% stated they did not monitor the risks of environment-related shocks, such as natural disasters, to their business and 47% agreed that acting on sustainability issues damaged profitability.

"Many organisations are 'asleep at the wheel' when it comes to addressing sustainability and resource scarcity," warned the Carbon Trust's chief executive Tom Delay. "Too often businesses see taking action as an obligation and a cost."

The Carbon Trust's findings were echoed by research from the Prince of Wales's accounting for sustainability project, which interviewed chairs of companies, chief financial officers (CFOs) and high-level managers about the importance of environmental data in board-level decision making. The study found that many organisations, both in the public and the private sector, failed to grasp the relevance of environmental factors to their operations and finances.

"The business case for the inclusion of environmental and social factors at board level is not yet clear, particularly for many CFOs," concluded the researchers.

Scepticism over the quality of data, difficulties in linking issues such as biodiversity to organisations' operations and problems in aligning sustainability issues with business objectives, were cited as key barriers to engaging board members with environmental issues in strategic decision making.

DECC outlines simplified carbon reduction scheme

Abolition of performance league table heads host of changes to the CRC

Plans to simplify the carbon reduction commitment (CRC) energy efficiency scheme will save participates a total of £272 million by 2030, claims DECC.

Confirming the changes to the scheme first mooted by the chancellor in his autumn statement, the energy and climate change department says its simplification of the CRC will make it easier for businesses to feel the benefits of using less energy and will support jobs in the energy savings industry through further incentivising demand for energy efficient products and services. "We have listened to the concerns of business and radically simplified the scheme to cut administrative costs and red tape," said energy minister Greg Barker.

Manchester United topped the CRC league table in 2011

Changes include abolishing the performance league table (PLT); cutting the number of fuels that participants have to report on from 29 to two; removing the rule that at least 90% of emissions are regulated; reducing overlap with other climate change legislation, such as that governing climate change agreements and the EU emissions trading scheme; and extending the annual allowance surrender date to October.

The changes will, for the most part, be implemented from the start of phase II of the scheme, in April 2014. Several of the changes, including the scrapping of the PLT and the reduction in the number of fuels covered by the scheme, will come into force from 1 June 2013, however.

The manufacturing body, the EEF, which has campaigned to have the CRC abolished, maintains that the changes do not go far enough. "There is still far too much duplication with other schemes designed to reduce emissions and improve energy efficiency," said head of climate and environment policy Gareth Stace.

Although the overall savings are estimated up to 2030, the government says it will review the CRC again in 2016 to see whether the scheme remains the best way of improving energy efficiency and reducing carbon emissions.

The CRC administrator, the Environment Agency, has confirmed to *the environmentalist* that the final PLT, covering 2011/12, will be published shortly. A spokesperson said at the start of January that the data was being verified and that the agency expected to release the table in the early part of the year.

Main changes to the CRC from June 2013

- Abolition of the performance league table – though participants' aggregated energy use and emission data will continue to be published.
- The reduction in fuels from 29 to two, so the scheme only covers emissions generated from the consumption of electricity and gas (for heating).
- Introduction of an organisation-wide 2% minimum threshold for gas. So, if a participant's gas consumption in 2012/13 is below 2% then it will not have to report on that fuel for the last two years of phase I or purchase allowances.
- The extension of the CRC allowance surrender deadline from the end of July to the end of October.

Short cuts

CO_2 targets delayed

The government has deferred making a decision on whether to include CO_2 emissions from international aviation and shipping in legally-binding carbon reduction targets until 2016. Under the Climate Change Act, ministers had until the end of 2012 to introduce legislation expanding the carbon budgets to include international transport emissions. However, following developments in negotiations to establish a global approach to cutting aviation emissions, the energy secretary confirmed that no decision will be made until the government sets the fifth budget in 2016. DECC cited the European Commission's agreement to "stop the clock" for 12 months on including flights from outside Europe in the EU emissions trading scheme as a key driver behind the move. The European decision followed a meeting of the International Civil Aviation Organisation where it was agreed that a single global market-based mechanism was needed to cap emissions from the sector.

Coal burning up

Coal will come close to outstripping oil as the world's top energy source by 2017, according to the latest projections from the International Energy Agency (IEA). Coal met nearly half of the rise in global energy demand during the first decade of the 21st century and this trend is set to continue with 1.2 billion tonnes more coal predicted to be burned in 2017 than today. Use of coal will increase throughout the world, except in the US, according to the IEA's latest report, with demand led by the growing economies of China and India. In the EU, the agency predicts that the current trend of rising coal consumption is close to peaking, and that increasing uptake of renewables will see coal demand in 2017 fall to levels similar to that of 2011. Meanwhile, the latest statistics from DECC confirmed that, in the third quarter of 2012, coal-powered stations generated 35.4% of the UK's electricity – its highest market share for 14 years.

In Parliament

The gutting of the CRC

The chancellor's announcement in his autumn statement that the government planned to "simplify" the carbon reduction commitment (CRC) energy efficiency scheme received little publicity at the time. But it is a decision that I think underpins a wider Treasury view towards all things low carbon.

The original CRC, introduced in April 2010, was supposed to be an instrument that prompted CO_2 savings in those sections of the economy not affected by the climate change levy or carbon trading. It was designed to reward good CO_2 reduction performance by transferring levies from those performing poorly; a public performance league table (PLT) would provide a reputational record. Because of the redistribution of levies from poor to good performers, it was revenue neutral.

It has been apparent from the off that the chancellor doesn't like the CRC, except in one aspect, which he demonstrated with his first bite at the legs of the scheme in the 2010: CRC levies would not be circulated but go to the Treasury, netting it a handy £1 billion a year. But at least the PLT remained so we could still see who was doing well and who was not.

Now we have further simplification (p.5). The PLT is to be abolished, but the levy whereby all CRC participants must pay a "forecast allowance price" of £12 per tonne of CO_2, rising to £16 per tonne in 2014/15, to the Treasury continues. And, in a telling passage in the statement, the Treasury has indicated that it would like to remove the tax as well, but will only get round to that when public finances allow.

The stealthy but complete evisceration of the CRC is, I think, a minor scandal, especially since its whole purpose and design has now been removed. But it still produces a good wedge of cash for the chancellor, so perhaps that's what matters most.

Alan Whitehead, Labour MP for Southampton Test and energy and climate change committee member

Fracking given the green light

Exploration of UK shale gas reserves will resume after DECC imposed new controls to mitigate the risk of seismic activity being triggered by hydraulic fracturing drilling techniques, known as "fracking".

The energy department suspended drilling at the UK's only fracking site in May 2011, after two minor earthquakes were recorded nearby. Subsequent investigation found that the drilling process, which pumps thousands of litres of pressurised water and chemicals into shale deposits to break up the rocks and release gas, was responsible for the tremors. The new controls include mandatory risk assessments and plans showing how seismic risks will be addressed. Fracking operations will be halted in certain conditions.

Cuadrilla Resources, the company behind the shale gas operation near Blackpool, said the announcement to allow drilling to resume marked a turning point for the country's energy future. "[The] decision will allow continued exploration and testing of the UK's very significant shale resources in a way that fulfils the highest environmental and community standards," said CEO Francis Egan.

Cuadrilla can now restart operations

The company said it was now ready to move ahead with its plans, which involve the hydraulic fracturing and flow testing of a number of wells in Lancashire. However, it has pledged to work closely with DECC, Lancashire County Council, the Environment Agency, the HSE and local communities to obtain regulatory approvals and planning permission before further exploration and testing.

Sepa gets backing for reforms

Proposals to simplify and integrate the regulatory framework in Scotland for waste, water, industrial pollution and radioactive substances have received backing from Scottish businesses and environmental groups.

A consultation on the plans by the Scottish government and Scottish Environment Protection Agency (Sepa) ended on 4 August last year (lexisurl.com/iema12629), and analysis of the feedback by the regulator reveals strong support for the proposals. Overall, 82% of the 89 respondents agreed that an integrated framework for licences, permits and rules controlling potentially harmful activities would provide more effective protection of the environment and human health.

Respondents also support changes to the enforcement tools available to the regulator, which Sepa says would enable it to adopt a more proportionate, risk-based approach to deter non-compliance.

Commenting on the favourable response, Sepa chair David Sigsworth said: "We want to work with businesses to make it simpler and easier to comply with environmental regulations, but we won't let wanton lawbreakers undermine legitimate operations.

"In the future, Sepa will have more direct powers to complement our existing enforcement tools and provide new ways to protect the environment."

Respondents to the consultation did raise several concerns with the proposed new regime, however, including the route for appeals to enforcement decisions, the need for clarity on enforcement policy, and implementing the new framework. Sepa says it is now working with the Scottish government and businesses to build a consensus on the way forward.

Meanwhile, the government says plans for a single environmental permissions and compliance system will be included in its Better Regulation Bill, which it will shortly introduce to the Scottish parliament. In addition to enabling Sepa to adopt a more risk-based approach to regulation, the Bill will also aim to address regulatory inconsistencies and introduce further changes to the planning system.

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Kayley, RRC Customer Services Manager

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Short cuts

Ecodesign priorities

The European Commission has adopted a revised working plan (lexisurl.com/iema14181) on ecodesign covering the period 2012 to 2014. Under article 16(1) of the Ecodesign Directive (2005/32/EC as amended), the commission has to publish a plan setting out, for the three following years, an indicative list of energy-related product groups that will be considered priorities for new measures designed to improve their energy efficiency. The latest list, the second since the Directive came into force in 2005, covers the following seven product groups: window products; steam boilers (less than 50MW); power cables; enterprises' servers, data storage and ancillary equipment; smart appliances/meters; water-related products; and wine storage appliances – there is a legal obligation under ecodesign regulation 643/20099 to assess the need to adopt such requirements for this product group.

Electric fleet savings

Research by British Gas claims that UK companies running large fleets of between 420 and 33,000 vehicles could save an average of £350,000 a year in running costs and cut carbon emissions by 5% by replacing just 10% of their current vehicles with electric models. It also reveals that some sectors can achieve greater financial benefits than others. Fleets in the financial services sector, for example, stand to make the highest average saving at £484,000 a year. Converting 50% of a large fleet to electric vehicles could result in an average annual cost saving of £1,753,000. British Gas itself plans to convert 10% of its 14,000 light commercial vehicle fleet to electric vehicles over the next three years, and is currently trialling Nissan's eNV200 electric van. Colin Marriott, fleet general manager at British Gas, said: "Electric vehicles offer us so many benefits as a business that we aim to have 1,400 by 2015 as part of our drive to reduce fleet carbon emissions by 25%."

Solar joins 'premier league'

DECC has confirmed it now sees large-scale solar photovoltaic (PV) installations as playing a significant role in ensuring the UK will meet its 2020 renewable energy target.

In an update to its renewable energy roadmap, the energy department amended the list of "key technologies" deemed necessary to meet the 15% generation target to include solar PV alongside bioenergy, wind and marine power.

A dramatic fall in the costs of both PV panels and installation during 2011/2012 and high levels of popular support for the technology has resulted in DECC re-evaluating the technology's potential generating capacity. Following a 466% increase in solar PV capacity in the 12 months to June 2012 – due to take up of the feed-in tariff scheme – the energy department now estimates that solar PV could provide between 7–20GW of the UK's electricity by 2020.

While predicting that the greatest growth in solar PV generation will remain small-scale installations (less than 50kW), the roadmap states that larger arrays are increasingly financially viable.

Publication of the revised roadmap came after DECC outlined higher than expected subsidy levels for medium and large-scale PV under the next phase of the Renewables Obligation (RO). The energy department had proposed cutting RO subsidies for PV by 25% from 1 April 2013 to 1.5 ROCs/MWh, gradually falling to just 0.9 ROCs/MWh in 2016/17. However, it has now announced that in recognition of the need to support commercial installations of PV it will create separate RO bandings for ground-mounted and roof-mounted arrays.

Companies that install PV panels onto their warehouses or manufacturing facilities, for example, will be able to claim 1.7 ROCs/MWh, slightly more than ground-mounted projects which will receive 1.6 ROCs. Both bandings will fall in subsequent years, but at a slower rate than originally proposed to 1.4 ROCs/MWh and 1.2 ROCs/MWh respectively.

The Renewable Energy Association welcomed the changes. "Large-scale solar PV has now joined the UK's premier league of renewables and is poised to make a major contribution to our electricity supplies in the coming years," it said.

£2m to tackle air quality

Defra has awarded grants of up to £150,000 to local authorities investigating the benefits of creating low emissions zones (LEZs) to combat air pollution.

The funds will pay for studies into the feasibility of introducing schemes similar to the one operating in London, which charges polluting heavy diesel vehicles, including lorries, coaches and vans, up to £200 a day to drive into the city.

Authorities awarded funding to investigate LEZs include city councils in Birmingham, Bradford, Exeter, Leicester and Northampton. The grants, which total £531,000, account for more than 25% of the £2 million of funding awarded under Defra's annual air quality grant scheme. In total, 36 councils across England will receive financial support for initiatives aimed at tackling air pollution.

"Air quality has improved significantly in recent years; however, we need to keep striving to improve the air we breathe. Without this money, many innovative projects would never see the light of day," said Defra minister Lord de Mauley.

Alongside the LEZ feasibility studies, the money allocated to councils will support the implementation of measures to reduce emissions from transport, the development of air quality modelling tools and the rollout of awareness campaigns.

York City Council was awarded a total of £148,985 to support the development and measure the impact of several initiatives, including an incentive scheme for low-emission taxis and using a high-profile low-emission vehicle in campaigns to raise awareness of air pollution.

Dave Merrett, cabinet member for transport, planning and sustainability at the council, said: "The opportunity to educate residents about air pollution and the damage it can cause, along with the promotion of low-emission vehicles, will be a big boost to improving air quality."

The latest air pollution statistics from Defra published in December reveal that emissions of nitrogen oxides fell by 6.6% in 2011, taking levels 61% below that recorded in 1970. The rate of reduction has slowed since 2009, however.

Funding gap puts CCS in Europe on the backburner

The omission of carbon capture and storage (CCS) projects from the first tranche of programmes to receive money from the EU's NER300 fund has raised concern that Europe is falling behind in the race to develop a viable CCS industry.

The European Commission says it did not consider CCS projects for NER300 funding because member states had failed to provide sufficient financial guarantees for most of the projects, including three from the UK.

"In some cases there were funding gaps, while in others the projects were not sufficiently advanced," it said.

The commission had made €275 million available for CCS projects in the first allocation of NER300 funds. It said the money will remain available for such projects, and pledged to proceed swiftly with the implementation of a call for new funding proposals.

However, the European CCS industry, which had called on the commission to hold off making a decision on whether to help finance CCS projects in the first round of funding, believes the withdrawal of support will further delay the meaningful demonstration of the technology in Europe.

A pilot CCS project in Spremberg, Germany

The latest status report from the Global CCS Institute on the deployment of CCS technology reveals that Europe is lagging behind its major competitors. Of the eight large-scale integrated projects under construction around the world, all but one are located in North America – four in the US and three in Canada.

Meanwhile, the International Energy Agency has warned that high costs and a lack of incentivising policies are delaying deployment of CCS, and has called on governments to take action in 2013.

Puma leads the way on reporting

Puma's environmental profit and loss (EP&L) statement has been hailed as a logical approach for companies to better understand and incorporate environmental issues in their business strategy by independent experts.

Following the publication of its first EP&L in 2010, which calculated the value of the sportswear company's environment impacts at €145 million, Puma asked a group of sustainability and business experts to evaluate its approach.

The 20-strong panel – which included Pushpam Kumar, chief economist at the UNEP's ecosystems services division; Peter Bakker, president of the world business council for sustainable development; and Tom Beagent, assistant director for sustainability and climate change at PwC – concluded that the EP&L was "an excellent step in the right direction to promote the sustainable use of natural capital".

The experts praised the EP&L for its ability to provide insight into the risks and opportunities posed by natural capital. They singled out for particular praise the way the EP&L identified and quantified environmental footprints, enabling Puma to communicate easily the firm's impact on the environment to all its stakeholders, from investors to consumers.

However, the panel acknowledged that the level of complexity in the EP&L means that it is unlikely to be used by more companies unless a more accessible approach was created.

The EP&L method could be improved with the inclusion of more primary data, state the experts. They say this would help to reduce uncertainty as modelling techniques provide much of the information in the EP&L. They also recommend the inclusion of more data from secondary sources, such as life-cycle assessment databases.

The panel say the EP&L would also benefit from considering the impacts of water pollution alongside emissions to air, land use, waste and water use.

Short cuts

UK's bigger footprint

The UK's carbon footprint increased in 2010 for the first time since its peak in 2004, new data from Defra has revealed. It shows that between 2009 and 2010, the nation's footprint rose by 10%, following a 19% fall in 2009. The environment department also reports that by 2010, UK carbon emissions relating to imports had increased 59% since 1993, with those related to imported goods and services from China rising by a massive 263%. In 1993, emissions associated with imported goods and services accounted for 30% of the UK's carbon footprint. By 2010, that figure had risen to 44%. Over the same 18-year period, emissions from domestically produced goods and services fell 12%, accounting for 35% of the UK's overall footprint, compared with 47% in 1993. In 2010, emissions of all six main greenhouse gases were 5% up on their 1993 levels. Defra reports that the country's carbon emissions in 2004 totalled 852 million tonnes (mt), and has since fallen by 15% to 722mt CO_2.

Baxter chairs CEN group

IEMA's executive director of policy Martin Baxter is to head up the team that advises CEN – the European standards body – on environment management issues. Baxter, who is the UK lead on the current work to revise ISO 14001, has been appointed as chair of the environment management team (EMT) of CEN's strategic advisory body on the environment. The activities of the EMT focus on management systems standards that support European policy on environmental matters such as the commission's roadmap to a resource efficient Europe 2020. "I'm delighted to take on this role," said Baxter. "It provides a great opportunity to optimise the use of voluntary standards, such as 14001, to achieve European policy outcomes in lieu of regulatory approaches, and provides a basis for developing more coordinated European input to the development of international standards."

Proposed EIA Directive needs work

The European Commission's proposals to update the environmental impact assessment (EIA) Directive (2011/92/EU) offer some good opportunities to improve practice but refinements are needed, concluded a roundtable of practitioners brought together by IEMA.

Consultants from the Institute's EIA Quality Mark scheme were joined by representatives from developers, Runnymede Borough Council and the British Property Federation to examine the key changes, including mandatory screening reports for all annex II projects and integrating scoping into the screening process. Discussions covered the potential for a dramatic increase in the number of screening documents each year – likely due to EU policymakers failing to appreciate the scale of the change; the possible benefits and risks of mandatory scoping in the screening process; and the environmental value, but business burden, of ongoing monitoring of significant adverse effects.

While welcoming the commission's suggestion highlighting the importance of competent practitioners, the delegates debated whether rewording the requirement to include "technical experts" rather than "accredited EIA experts" could provide assurance of competence without increasing administration.

"The roundtable was a real breakthrough moment for the UK with EIA Quality Mark consultants, developer representatives and decision makers exchanging views on the Directive's current performance and future direction," said Josh Fothergill, IEMA's EIA practice lead. "While we did not reach a consensus in every area, all parties came away with a wider perspective and we agreed to ongoing dialogue focused on delivering more proportionate and effective practice."

Martin Broderick, senior technical director at WSP Environment & Energy, who hosted the event, said the discussion was a useful exercise in helping UK practitioners to develop a cogent response to the draft amendments. "IEMA has played an important role in ensuring that the amendments will contribute constructively to improving and developing EIA practice across

EIA is crucial to delivering sustainable infrastructure

the bloc," he commented. "With the Treasury and Infrastructure UK recently announcing the 2012 update to the national infrastructure plan, it is vital that in a UK context we get the EIA Directive amendments right, to ensure all the much needed infrastructure the UK needs is delivered in a truly sustainable manner."

The roundtable discussion is helping to inform IEMA's forthcoming series of free half-day workshops for its members asking for feedback on the proposed amendments to the EIA Directive. The workshops will take place in Cambridge on 16 January, and in London, Dublin, Belfast, Edinburgh, Oxford, Manchester, Glasgow, Exeter, Cardiff and Birmingham during February. For dates, details and booking, visit iema.net/events.

EIA Update

iema

Chancellor takes aim at EIA

The autumn statement included reference to environmental impact assessment (EIA) by revealing plans for the department for local government to consult on both revised EIA guidance, before the 20 March 2013, and on revising the EIA Regulations, with the intention of increasing the Schedule 2 thresholds. Secretary of state Eric Pickles followed up the announcement by the chancellor with a statement to parliament that heavily critiqued the European Commission's plans to revise the EIA Directive (2011/92/EU), and indicated a desire to explore scaling back impact assessments. The full story is available at environmentalistonline.com/pickles.

Marine EIA: online conference

In addition to IEMA's regular EIA webinars (below), the Institute is running a week-long series of lunchtime webinars between 28 January and 1 February on the theme of the environment in marine consenting. The webinars will have an overarching aim of enhancing knowledge around marine EIA and is supported by IEMA's EIA Quality Mark partners, although each day will focus on different elements, including regulator views, offshore renewables, onshore interactions and marine ecosystem services. Go to iema.net/events to book.

Future of SEA in Ireland

The five statutory strategic environmental assessment (SEA) authorities in Ireland have launched a new report entitled *Review of SEA effectiveness in Ireland*. It identifies successes and challenges in SEA and is accompanied by a five-year action plan, which is designed to improve practice by strengthening governance, providing new guidance and improving training and data management. Both the report and the action plan can be downloaded at lexisurl.com/iema14234.

Health impact assessments

The Wales health impact assessment (HIA) support unit has published new guidance, entitled *HIA: a practical guide*. The guide is a comprehensive and practical toolkit for practitioners and those interested in HIA, containing information on relevant Welsh national and local policy.

Health and climate change

The Health Protection Agency has launched a report providing scientific evidence of the wider risks to public health from climate change in the UK (lexisurl.com/iema14245). The report complements the existing health and wellbeing section of the UK's climate change risk assessment evidence report, which was laid before parliament in January last year.

Webinars

- 28 February – Noise and EIAs
- 28 March – EIA's role at public inquiry

Recent Prosecutions

Waste firm hit by record Scottish environment penalty

A waste management and haulage company has been fined £200,000, the largest ever financial penalty for an environmental offence reported by the Scottish Environment Protection Agency (Sepa).

The jury at Livingston Sheriff Court found Doonin Plant and its director Gary Doonin guilty of keeping controlled wastes, including plastics and electrical components, without a licence and in a way likely to cause pollution, in a case described as “one of Scotland’s most significant environmental crimes”. It deferred sentencing Gary Doonin for one year, with the sheriff warning that any further offences during that time could lead to a prison sentence.

Sepa discovered in 2010 that the Glasgow-based company had dumped hundreds of tonnes of construction and demolition waste at the former Woodend Colliery in Armadale, West Lothian, which is owned by the firm. The agency reported that Doonin Plant had not taken basic actions to protect the environment from the decomposing waste, such as lining the site. As a result, the waste was likely to leach metals and chemicals into the soil, posing a threat to groundwater and local waterways, and release methane and carbon dioxide into the atmosphere, said Sepa.

Doonin and the company were both found guilty of two offences under section 33 of the Environmental Protection Act 1990. The company had five previous convictions, including in August 2010 when it pleaded guilty to similar waste offences and was fined £90,000.

Hazardous waste convictions

Eight men and three companies have been ordered to pay more than £220,000 for attempting to export broken electronics from the UK, in a prosecution of what the Environment Agency has described as the biggest criminal network it has ever uncovered.

Basildon Crown Court heard that televisions, fridges – some containing ozone-depleting substances – and old computers, were among the 450 tonnes of electronics illegally exported to Nigeria, Ghana and Pakistan in breach of the Transfrontier Shipment of Waste Regulations 2007 and the European Waste Shipment Regulation 2006. The convictions follow a two-year investigation by officers at the agency’s national environmental crime (NEC) team, that involved stopping a dozen 40-foot containers of hazardous electrical waste while they were en route to Nigeria.

Five of the men and the three companies were convicted after a six-week trial in November 2011, but the court at the time imposed restrictions on the reporting of the convictions. They were ordered to pay a total of £78,000. The three defendants recently convicted at Basildon Crown Court were ordered pay a total of £142,145 in fines, costs and confiscations. Another two defendants are yet to be sentenced and a third remains at large. One of the company’s found guilty by the court was Ady’s Skips and Recycling Services, which had a contract to collect televisions from 18 civic amenity sites across Norfolk.

Ammonia discharge costs haulier

The discharge of ammonia from a refrigeration unit into a watercourse has cost Eddie Stobart Group more than £34,000 in fines and costs.

Following reports of pollution to Cuttail Brook at Annesley in Nottinghamshire, the Environment Agency tracked the source to the haulage company’s premises on the nearby Sherwood Business Park. It was found that there had been a problem with the refrigeration system at the site.

A solicitor representing the firm told Mansfield magistrates’ court that the pollution that occurred was not the result of a deliberate act and that the company had now put a new system in place so that the incident could never happen again.

The well-known haulier pleaded guilty to a breach of the Environmental Permitting Regulations (England and Wales) 2010, and was fined £30,000 and ordered to pay £4,040.29 costs.

Case Law

Residents “win” nuisance case against foundry

Local residents have succeeded in a private nuisance claim against an aluminium foundry near Birmingham for odour emissions. Although successful, the level of compensation settled in *Anslow v Norton Aluminium* [2013] All ER (D) 03 was relatively low, with claimants awarded a maximum of £14,000 each. Overall, damages and legal costs were significant, totalling around £1.4 million. However, as the foundry entered administration 10 days before the judgment, it is unclear whether the compensation will be paid.

The evidence suggested that Norton Aluminium operated its secondary foundry in contravention of regulatory environmental standards over seven years. Applying the principles in *Barr v Biffa Waste Services* [2012] All ER (D) 141, the judge determined that, although the claimants had failed to establish a legal nuisance by way of noise, smoke, fumes and dust, they had established an unreasonable interference with the use and enjoyment of their properties by reason of odour.

The issue then became the correct method for determining compensation for loss of amenity. The judge calculated damages on the basis of the degree of odour (using isopleths) affecting each claimant’s property rather than on diminution in value (market rental figures). According to Gordon Wignall, a barrister at No5 Chambers who acted for the claimants, the case shows that the threshold standard for proving common law nuisance is not particularly high, and that businesses are potentially more at risk from householders’ claims in common law nuisance than from regulators with statutory powers.

Hayley Tam and George Hobson

LexisPSL

New Regulations

In force	Subject	Details
22 Nov 2012	Planning	The Town and Country Planning (Fees for Applications, Deemed Applications, Requests and Site Visits) (England) Regulations 2012 consolidate, with amendments, the Town and Country Planning (Fees for Applications and Deemed Applications) Regulations 1989. Amendments include raising existing fees in line with inflation and introducing two new charges. lexisurl.com/iema14133
27 Nov 2012	Chemicals	European Commission Regulation 1037/2012 approves the active substance isopyrazam, in accordance with Regulation 1107/2009 concerning the placing of plant protection products on the market, and amends the Annex to Regulation 540/2011. The Regulation will apply from 1 April 2013. lexisurl.com/iema14293
28 Nov 2012	Energy	EU Directive 2012/27/EU on energy efficiency (EED) amends directives 2009/125/EC (on establishing a framework for the setting of ecodesign requirements for energy-related products) and 2010/30/EU (on labelling and standard product information on the consumption of energy and other resources by energy-related products). It also repeals directives 2004/8/EC (on the promotion of cogeneration based on a useful heat demand) and 2006/32/EC (on end-use energy efficiency and energy services). Member states have until 5 June 2014 to transpose the EED. lexisurl.com/iema13927
1 Dec 2012	Energy	The Feed-in Tariffs Order 2012 revokes and remakes with amendments the 2010 Order. The latter conferred on the secretary of state and the gas and electricity markets authority responsibilities in connection with the administration of the feed-in tariff scheme for small-scale, low-carbon electricity generation. lexisurl.com/iema13926
3 Dec 2012	Emissions trading	The Greenhouse Gas Emissions Trading Scheme (Amendment) (Charging Schemes) Regulations 2012 amend the charging systems for the EU emissions trading scheme – made under the Environment Act 1995, the Environment (Northern Ireland) Order 2002 and the Greenhouse Gas Emissions Trading Scheme Charging Scheme Regulations (Northern Ireland) 2010 – and operated by the Environment Agency, the Scottish Environment Protection Agency and the chief inspector in Northern Ireland. lexisurl.com/iema13929
5 Dec 2012	Energy	The Electricity and Gas (Energy Companies Obligation) Order 2012 places an obligation on electricity and gas suppliers with more than 250,000 domestic customers, and which supply more than a specified amount of electricity or gas, to achieve specific CO_2-related objectives. lexisurl.com/iema14138
5 Dec 2012	Energy	The Green Deal Framework (Disclosure, Acknowledgment, Redress etc) (Amendment) Regulations 2012 amend regulation 42 of the earlier 2012 Regulations to enable the secretary of state to alter the start date for provisions under section 9 (powers to alter the Energy Performance of Buildings (Certificates and Inspections) (England and Wales) Regulations 2007) and section 10 (powers to alter the Energy Performance of Buildings (Scotland) Regulations 2008). lexisurl.com/iema14137
5 Dec 2012 NI	Pollution	The Smoke Control Areas (Authorised Fuels) Regulations (Northern Ireland) 2012 revoke and replace with amendments the 2011 Regulations. lexisurl.com/iema13916
11 Dec 2012	Waste	The Producer Responsibility Obligations (Packaging Waste) (Amendment) Regulations 2012 amend the 2007 Regulations by requiring the secretary of state to review the operation and impact of the legislation in England and Wales and publish a report by 1 July 2017. Following the review, the secretary must decide whether the 2007 Regulations should be revoked or amended further. The 2012 Regulations also set new waste packaging recovery and recycling targets for the years 2012 to 2017. lexisurl.com/iema14147

Latest Consultations

25 Jan 2013

Mercury waste

Transposing EU Directive (2011/97/EU) on the storage of metallic mercury waste kept for more than 12 months, requires changes to the environmental permitting regime. As a result, Defra and the Welsh assembly government are consulting on proposed amendments to the Environmental Permitting (England and Wales) Regulations 2010, which are due to come into force on 15 March 2013.
lexisurl.com/iema14150

4 Feb 2013

Environment Agency and Natural England

Defra is conducting its triennial review of the Environment Agency and Natural England (NE). The department says it will use this review to take a fresh look at what the agency and NE do and how they do it, to ensure they are able to deliver government ambitions on the environment, and flood and coastal risk management. It also considers whether certain functions might better be delivered by the private or voluntary sectors. Stakeholders are invited to give their views on the agency and NE.
lexisurl.com/iema14151

5 Feb 2013

Guidance on Habitats and Wild Birds Directives

Defra has launched a consultation on simplifying guidance on the Habitats Directive (92/43/EEC) and the Wild Birds Directive (2009/147/EC). The environment department started its review of how Directives are implemented in England during November 2011 to see whether it could be made simpler and more efficient without compromising the objectives of the legislation. The review put forward 28 recommendations for improvement. Two of these – to commence a stocktake of the current guidance on habitats requirements and to draft new overarching guidance to give an overview of habitats requirements as they apply in England and relevant UK waters – are the subject of this consultation.
lexisurl.com/iema14152

6 Feb 2013

Smart meters

The EU Directive on energy efficiency (2012/27/EC) (EED) includes provisions relating to the rollout of smart meters in member states. As part of the implementation of the EED, the energy department is consulting on how to fulfill the requirement to provide domestic consumers with easy access to at least 24 months of daily/weekly/monthly/annual consumption data where they have a smart meter. The EED transposition deadline for member states is 5 June 2014.
lexisurl.com/iema14153

15 Feb 2013

Regulatory charges

The Scottish Environment Protection Agency (Sepa) is asking for feedback on its plans to increase some of its charges by 2% from 1 April 2013 – the first significant uplift in fees since 2008. There will be no increase in some charging schemes, however. For example, Sepa is not planning to up charges for Part B pollution prevention and control activities in 2013/14. Other areas exempt from the increase include the producer responsibility regime (packaging waste), the carbon reduction commitment energy efficiency scheme and waste electrical and electronic equipment. Sepa is reviewing all of its charging schemes with a view to introducing a significantly different framework in 2015.
lexisurl.com/iema14157

New Guidance

Hazardous substances	The business department has issued guidance (lexisurl.com/iema14164) on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 (RoHS). The Regulations came into force on 2 January 2013 and implement the revised EU Directive (2011/65/EU), which restricts the use of hazardous materials in electrical and electronic goods – so-called RoHS II. The new Regulations replace the 2008 Regulations and impose obligations on operators throughout the supply chain in relation to bringing electrical and electronic products to market.
Emissions trading	The European Commission has updated its series of guidance on the EU emissions trading scheme. The monitoring and reporting regulation (MRR) replaced the monitoring and reporting guidelines (MRG 2007) from 1 January 2013 and general guidance for installations on the MRR is available at lexisurl.com/iema14158. Its revised guidance on the accreditation and verification regulation (AVR) includes: the key AVR guidance (lexisurl.com/iema14159); the AVR site visits guide (lexisurl.com/iema14160); and a document on process analysis (lexisurl.com/iema14161).
WEEE	The UK's environment regulators (the Environment Agency, the Scottish Environment Protection Agency and the Northern Ireland Environment Agency) have jointly published revised guidance (GN04) on rules for issuing evidence on the recycling and reuse of waste electrical and electronic equipment (WEEE) and how to use national WEEE protocols. The guide (lexisurl.com/iema14166) is split into four main sections: WEEE evidence notes; batteries in WEEE; WEEE protocols; and meeting recovery and reuse targets. GN04 replaces the previous guidance document GN06, and supplements the information provided in the WMP5 and 6 application forms, as well as the WMP7 guidance notes for treatment facilities and exporters (lexisurl.com/iema14165).

Laying down the law

Managing compliance risk

Ross Fairley reminds businesses to always be prepared for environment incidents and regulatory investigations

The debate on the use of new enforcement techniques for environmental offences rumbles on, with the business department (BIS) recently announcing that civil sanctions will, in future, only be used against larger companies. Meanwhile, 2012 saw more than 100 enforcement sanctions brought against businesses, alongside some high-profile environmental enforcement raids.

These new techniques to tackle breaches of environmental rules pose an increased operational risk for many businesses and not just those in the manufacturing sector. Enforcement action for environmental issues, and with it financial penalties and damage to reputation, is no longer confined to the traditional area of polluting land and water, but can arise from a number of events and circumstances.

Many recent prosecutions have focused on non-compliance with packaging and recycling obligations or for failing to ensure that waste produced by the business is properly disposed of. The strict liability of many environmental offences often means that even the best run companies can face the risk of environmental enforcement by the regulator. Therefore, it is always sensible to be prepared to deal with incidents and regulatory investigations.

If a major incident occurs

The relevant authorities will start to investigate as soon as the incident is discovered. The Environment Agency, for example, has extensive investigatory powers including: the power to require the production of records; powers of entry; and the power to take samples. They can also request a formal interview with employees and other relevant personnel.

While the precise response to any environmental incident will depend on the specific event and the nature of the company involved, it is prudent to have an outline strategy in place to guide each stage of the response to the emergency.

There are many practical aspects to consider and, while cooperation with the regulator and other enforcement authorities is generally to be encouraged, businesses should be aware that the statements they or their employees make will weigh heavily in any decision as to whether to prosecute.

Immediately after occurrence or discovery of a major environmental incident, a company needs to:

- ensure clear communication lines with managers and directors are in place, and that all information is passed to them straight away;
- brief all relevant staff;
- cooperate with the regulator and other official bodies, subject to checks and balances and legal advice. Establish a clear dialogue, and emphasise any remediation steps that have been taken by the company; and
- check the insurance position – it is not possible to insure against criminal penalties, but a policy may cover civil liabilities, such as clean-up costs.

Once the organisation is subject to formal investigation, it needs to review the history of the event, taking note of any remediation action. It should also seek legal advice on criminal liability – this may include individual directors as well as the company.

If a request is made for formal interviews, take legal advice on their conduct. This should include matters such as cooperation with the investigating authorities, the briefing of interviewees, and any follow-up steps – for instance, obtaining copies of the interview tape. If a company receives notice of an intended prosecution, the first step is to seek specialist legal advice.

Also, maintain a detailed record of evidence and a chronology of events. This will assist with instructing specialists and can also help manage costs. Keeping a record of all remediation work undertaken and any related costs is wise as this may form part of a schedule of mitigation, which could alleviate the harshness of any subsequent penalties.

Civil sanctions

As an alternative to criminal prosecution, regulators such as the Environment Agency can, if the organisation has more than 250 employees, enforce certain breaches of environmental law through civil sanctions. These include offences related to packaging waste, oil storage, nitrate pollution, hazardous waste and dangerous substances.

The revised organisational size threshold recently confirmed by BIS (lexisurl.com/iema14250) means that civil sanctions will cease to be available for smaller businesses, leaving them to face criminal proceedings and possible court hearings. Where civil sanctions are an alternative to criminal prosecution, the penalties available include compliance notices (requiring compliance with the law), restoration notices (requiring harm caused by non-compliance to be restored) and stop notices (requiring the immediate cessation of a harmful activity) as well as monetary penalties.

Notification of a regulator's intention to use a civil sanction comes via a notice of intent (NOI). If there is failure to comply, formal prosecution remains an option. For this reason, receipt of a NOI should be treated seriously. Furthermore, accepting a civil sanction has implications that need to be thought through by the business.

A company can also make an offer to the agency, for example, in the form of an enforcement undertaking. This is a pledge to take voluntary action to put an environmental problem right.

Ensuring the business has proper procedures in place to deal with environmental enforcement and gaining good legal advice at the outset can save a lot of heartache.

Ross Fairley is a partner at Burges Salmon. Contact him on +44 (0)117 902 6351 or at ross.fairley@burges-salmon.com.

The year in focus

the environmentalist's annual roundup of what policymakers, regulators and business leaders will be prioritising over the next 12 months

Owen Paterson – secretary of state for environment at Defra

My goal for the year ahead will be to help grow our rural economy and improve the natural environment. The two go hand in hand because a healthy environment is essential to future prosperity. Defra will help the rural economy unlock its potential. I want to enable the 500,000 businesses in rural England to grow. My department will continue to work closely with the food and farming industries to ensure they are supported. Of the food we currently import, 22% could be grown, reared and produced in the UK and I want to enable the industry to reduce this figure.

2013 will present a number of challenges and, as a department, we will continue to work with our partners to safeguard against disease, ensuring that plant, tree and animal health remains a priority. Defra is seen as the fourth emergency service and I want to ensure people can feel safe in their homes by having the right flood defence schemes in place. As a nation, we are fortunate to have some fantastic wildlife and I am keen that the department showcases the best of what this country has to offer to enhance biodiversity and rural tourism.

Paul Wheelhouse – minister for environment and climate change in the Scottish government

The Scottish government is working towards a cleaner, greener Scotland by improving the natural and built environment and protecting it for present and future generations. 2013 is the year of natural Scotland, and over the next 12 months we will showcase the best of the country's breathtaking scenery and unique natural heritage, and continue to ensure that environmental measures are at the heart of the government's decision-making and budget.

With the full fiscal and economic powers of independence, we could do more to create the best possible conditions for our environment, stimulating our green economy and realising its full potential. As we work towards that time, we will also continue to press the UK government for more investment in the environment and in jobs, sustainable growth and the green economy. We also want to see more action and higher levels of ambition across the world in support of a more sustainable future and low-carbon economy. In 2013, we will continue to press world leaders to raise their level of ambition in line with Scotland's.

Mary Creagh – Labour MP and shadow secretary of state for environment

2013 is shaping up to be a big year for the environment. After another year of government incompetence, we need a renewed focus on the environmental, climatic and economic challenges facing us. With unprecedented flooding and drought in the past 12 months, meeting the challenges of climate change will remain a priority. The draft Water Bill has already been plagued by delays and we need to get it back on track with tough targets to reform abstraction licences and promote water efficiency.

The UK economy remains in the doldrums, which is why in 2013 we must win the argument for green growth. After bold pledges in Rio, the government's greenhouse-gas (GHG) reporting scheme has fallen short. The coalition has chosen to limit mandatory reporting to quoted companies, despite business and green groups calling for a much wider approach. Is this another sign of the malign influence of a chancellor who sees environmental protection as a barrier to growth? The environment and economy complement one another. As growth flat lines, low-carbon industries have been growing at 5% a year, creating green jobs. Environment policy must provide the framework to give a green boost to growth.

The arrival of ash dieback has put the focus on biodiversity and the health of cherished woodlands. Forests will be in the spotlight in the next 12 months, with the government due to respond to the independent panel report on forestry in January. We will be looking for strong commitments to protect woodlands and the role of the Forestry Commission.

Martin Baxter – executive director of policy at IEMA

Halfway through the coalition's five-year term, and the environment is shaping up as one of the areas where the two parties in government are becoming ever more polarised. We're seeing the policy consequences of this already – exemplified by the decision to delay setting a 2030 electricity decarbonisation target until at least 2016.

Energy efficiency and efforts to reduce total energy consumption are belatedly receiving more serious attention from policymakers. DECC's new energy efficiency deployment office will spearhead the UK's implementation of the EU Energy Efficiency Directive, and practitioners are well advised to familiarise themselves with its impact on businesses.

The final stage of the introduction of mandatory GHG reporting for UK companies will be implemented this year with the adoption of enabling regulations and formal guidance, and companies covered by the rules will need to ensure effective GHG data management from the start of the 2013/14 financial year. Also, regulations implementing a requirement for a directors' strategic report to disclose long-term environmental risks are due to be implemented by the business department from October 2013.

Work will continue on the revision to ISO 14001, the global environment management systems standard, and IEMA plans a major programme of engagement with members when the draft is published in the spring.

The European Commission's proposal to amend the Directive on Environmental Impact Assessment (EIA) will see member states begin to develop their respective positions. Again, IEMA will engage members to help build its vision for EIA (see p.10).

Gareth Stace – head of climate and environment policy at the EEF

Despite forecasting moderate growth next year, we are under no doubt that environment debates will continue to be shaded by concerns over cost-effectiveness, affordability and growth. This is positive as it gives us fresh impetus to consider how to take resource efficiency to the next level to enhance competitiveness, create new jobs and potentially shield companies from future resource price shocks. My hope is that this will be complemented and incentivised by discussions and debate on the development of a waste prevention plan for England.

Debate will inevitably focus on the future of the EU emissions trading scheme post 2020. Businesses will need to be convinced that it will provide them with a stable and predictable regulatory framework in which to invest and transform. I expect there will be a continued emphasis on how to streamline regulation and provide a far more effective regulatory interface for companies.

That said, we are under no illusions that there are some massive challenges for this year and new regulations to respond to, such as managing the next tranche of registration under REACH and dealing with potential withdrawals of substances from the market; preparing the ground for a reworking of the UK WEEE (waste electronic and electrical equipment) system; and responding to variations in permit conditions as a result of the transposition of the Industrial Emissions Directive (see p.24). Alongside this, we are expecting big changes to be made on air quality as a result of the revision of the National Emissions Ceilings Directive and from the fall out of the European Commission's resource efficiency roadmap, which looks to have the potential for far-reaching implications for manufacturing.

Paul Leinster – chief executive at the Environment Agency

At the start of 2012 we were confronted by the consequences of two dry winters. In March, there was a drought across large parts of England. Then, from April onwards, record levels of rainfall led to 11 periods of flooding. We wait with interest to see what the weather in 2013 has in store for us. But we know that saturated ground, full reservoirs and high water tables mean that flood risks are higher than usual for the start of the year.

Despite the current economic situation, the Environment Agency's latest stock-take of the environmental performance of regulated businesses (lexisurl.com/iema13833) shows that the overwhelming majority manage their impacts well and that serious pollution incidents are at a record low. The agency continues to reduce the administrative costs to well-run businesses while ensuring that people and the environment continue to be protected. We are on track to deliver savings to business of £45 million per year from 2015 (against a 2010 baseline). However, there's no room for complacency because a minority of businesses are still bad neighbours. We are actively working with these operators so that they improve their performance.

In 2013, the Environment Agency will continue to work with companies, local and national government and communities to tackle serious pollution, promote good environmental practice and support economic growth. At the same time, we will be working to protect people and property, and improve the environment.

James Curran – director of science and strategy at the Scottish Environment Protection Agency (SEPA)

At the 1992 earth summit in Rio, governments committed to addressing the biggest environmental challenges of the day. By comparison, Rio+20 (held in June last year) failed, largely due to an obsession with the precarious global economy. Frustratingly, most effort seems to be going into returning our economy to the position that initially created the crash. And there is a distinct lack of the new thinking that characterised the original Rio meeting.

Unexploited fossil fuel reserves are estimated to be worth up to $27 trillion, and this has already been factored into global economic forecasts. But there is a problem. Those fossil reserves are equivalent to a staggering 2,800 billion tonnes of carbon dioxide – five times the limit for avoiding dangerous climate change!

Scotland, by contrast, has the most ambitious climate change legislation in the world, aspirations to be a zero-waste nation and the opportunity to build a new green economy. SEPA is keen to be part of that new reality – and will be working with businesses and communities to realise the multiple benefits that accrue from a high-quality environment.

Peter Young – chair of the Aldersgate Group

From an environmental perspective, 2013 will see us add to the planetary deficit in return for very little reward from short-term growth or global recovery. We are heading for another squandered year, with yet more misplaced faith in old economic models designed for limitless resources, and no concept of the havoc the climate debt will wreak on the next generation. In the UK, it will be harder to hear words on the core issues of sustainable growth and climate change; even "the green economy" will become an unsavoury phrase for our leaders to utter. This will spur an angrier debate than has been seen in recent years, centred on energy policy, which exemplifies the schizophrenia of an increasingly frayed coalition government.

On the periphery, good work will be done. 2013 could see breakthroughs in valuing natural capital, recognition that halting biodiversity loss is actually a net gain and the start of serious benefits from the green deal. Leading firms will use mandatory reporting to show why caring about CO_2 is good for long-term shareholder value.

Outrageously, I predict that we will invest as much in fossil fuels as in renewables. Our international competitiveness, green investment and job creation will suffer. I will ensure the Aldersgate Group's demand to create a new economy is louder in the ears of the government. We must make our leaders realise that entering the next election with a clear manifesto that articulates sustainable growth is the only credible option for their, as well as our, future.

Matthew Farrow – director of policy at the Environmental Services Association (ESA)

For a start, it would be good to get to the end of 2013 with the same set of waste/resource ministers as we had at the beginning. The endless ministerial merry-go-round does not help either sensible policymaking or the ability of the waste and resources sector to make its case. In addition, I hope that 2013 will see more recognition of the potential for the sector to drive the green growth the UK needs. One thing that will help is clarifying some key areas of policy uncertainty. I look forward to the judicial review over separate collection finally being resolved and for Defra to publish its long-awaited proposals to implement the ESA's code of practice for materials recovery facilities.

This year may also give us a sense of just how divergent the waste policy agendas across the UK could end up. Scotland, for example, will be deliberating over

Knowledge Center at the Masdar Institute Campus, Masdar City what use to make of its new powers over landfill tax. At the EU level, I think the most significant issue will be the commission making a start on its review of EU waste targets. Given how much of the UK story on waste management in the last 20 years has been driven by EU targets, this is something to pay close attention to.

Jonathan Garrett – director of corporate social responsibility at Jaguar Land Rover

For Jaguar Land Rover, 2013 will be both an exciting and challenging year. Exciting because of its growth plans, the development of new lower CO_2 vehicles and the construction, in Wolverhampton, of its "greenest" factory – which will provide the next generation of fuel-efficient engines. The company will also launch its new 2020 sustainability strategy, which will help it deal with these challenges.

Going forward, Jaguar Land Rover will continue to invest in research and development, and further enhance the integration of the sustainability agenda into its strategic decision making. There is much talk about the green economy. This conjures up images of wind turbines and solar power. However, mainstream manufacturing has a crucial role to play in the transition to a greener and more balanced economy with a highly skilled workforce. The UK automotive industry is one of the success stories. We need to build on this. Greener product development is at the heart of our business – a hybrid Range Rover will be launched later in the year, while an experimental Jaguar XJ_e recently achieved an incredible 112 mpg in tests. For the environment profession as a whole, I see industry grappling with the new concepts of valuing nature, environmental profit and loss, and developing new business models.

Matthew Brown – head of energy and climate change at the CBI

With the right political leadership, 2013 will continue to see green business go from strength to strength – a real powerhouse of the economy. To achieve that, however, EU policymakers must join businesses in lifting their eyes to the horizon, and start to sketch out a carbon policy for 2030. In the UK, it is imperative that the Energy Bill gets onto the statute books by the end of the year to start the flow of investment, jobs and growth in power generation.

The stakes are high on whether UK policy really starts to support energy efficiency in 2013. The government needs to do all it can to make the green deal work for consumers and to enable business energy efficiency – but we need a considered, coherent framework, not a raft of hasty new measures.

David Fatscher – head of market development at BSI

With 50% of the world's population now living in cities, the increasing challenges of urbanisation will be ever present in 2013. More specifically, given that half the world's GDP is generated by the largest 600 cities, authorities need to share best practice in sustainable development to optimise performance and quality of life. Responding to that need, BSI is providing the UK voice in the development of a new international standard, due to be published in 2013, based on work undertaken by the global city indicators facility, a World Bank initiative.

This new standard will offer a framework for comparability between cities by harmonising the metrics that evaluate the "smartness" of urban infrastructures. One indicator of the health of a city is the level of GHG emissions and, closer to home, BSI is partnering with the Greater London Authority to develop PAS 2070, an effective measurement tool which will allow consistent consumption-based GHG footprinting at the city level.

City planners are increasingly aware of the need to recognise the impact on biodiversity of specific activities or developments. Assessment is a complex undertaking and a more credible approach is required on how to measure and report on biodiversity. Accordingly, a new British standard on biodiversity management is due shortly. Cities also need to know that economic performance is measurably interlinked with issues such as the health and aspirations of the community. At present, there is no consensus-based definition of what it means to be a truly "smart city", but with robust standards under way in 2013, there soon will be.

Anne-Marie Warris – chair of the ISO subcommittee on environment management and advisor at Lloyd's Register

I have three key beliefs for what is critical in terms of the environment or sustainability in 2013. The first is ecosystems and biodiversity management – critical for our survival, but the concept is too abstract for day-to-day living. We may need to change the language. It is not about the planet surviving, it is about our own survival. And we cannot guarantee either without action.

The second is accountability – a much used word – and is about personal accountability for our use of ecosystems. Balance is my third. It is about agreeing the balance between the three "Ps" (planet, people, profit), which is used as a description of sustainability. What is the right balance? What framework do we need to meet all the needs of employees, community, stakeholders and ecosystems in a world with insufficient resources? This is a debate that appears not to be occurring, perhaps because it is too hard – but we need to have it!

CAN CHINA BUILD A GREEN ECONOMY?

Catherine Wilson examines China's progress in becoming a more sustainable economy

China is the world's largest emitter of carbon. It is home to five of the 10 most polluted cities on the planet, and more than three-quarters of the world's rivers that suffer from severe water pollution. These are just three of the many eye-watering statistics that illustrate the significant environmental challenges facing the country after three decades of double-digit growth, which have turned it into an economic powerhouse.

But change is coming. In August 2012, the Chinese government said it would spend 815 billion yuan (£80 billion) on cleaning up its rivers and tackling air pollution from industries like steel-making, cement manufacture and electricity generation. And, in December 2012, the ministry of environmental protection pledged to invest 350 billion yuan (£34 billion) in measures to reduce harmful particles in the air over 117 cities by at least 5% by 2015.

So, what is driving this change of strategy and what progress is the Chinese government making on setting the world's second largest economy on a sustainable development path?

Unsustainable growth

Despite an economic slowdown since the global crash, China continues to be one of the world's fastest-growing economies. The pro-growth economic policy reforms of the late 1970s, coupled with having one of the cheapest and largest labour forces in the world, have transformed China's ability to rapidly manufacture products relatively cheaply for western export markets. High resource dependency and lax environmental oversight have, however, brought increasingly unwelcome social, environmental and political difficulties.

Take carbon emissions. CO_2 output has increased from around 10% of global emissions in 1990 (3.8 billion tonnes) to 20% in 2011 (9 billion tonnes). China's growing carbon footprint is not only the result of its manufacturing and energy industries; it is also fuelled by rising prosperity among its population, which is boosting consumption within its borders. Car ownership, for instance, is expanding considerably. A report from IHS Automotive forecasts that annual car sales in China will grow by 74% by 2020, equivalent to more than 30 million new vehicles every year.

According to the International Energy Agency (IEA), on current trends, China could account for 50% of global CO_2 emissions by 2030. The potential impact of climate change on China's coastal cities, agriculture, forestry and water systems could have severe consequences for its people and the rest of the planet. It, therefore, pays for China to take its climate risks seriously.

Cause for concern

China's growing carbon emissions are not the only issue to have caused concern beyond its borders. Acid rainclouds, saturated with particulate pollution, drift regularly across Asia and towards the US. China's environmental challenges, consequently, are global. However, it is within its borders that the visible damage is occurring.

Chinese citizens are also finding the country's environmental destruction hard to ignore. Some are reacting with protests, which, according to one estimate, have grown by 29% each year since 2002. Examples of violent protests in 2012 include those at Shifang, Qidong and, more recently, Ningbo.

Residents of Shifang, driven by a fear of toxic air pollution and arsenic leaching from slag heaps into local drinking water supplies, defied police orders and marched in protest against the construction of a $1.6 billion copper-molybdenum processing plant. The protests led to city authorities abandoning plans to build the plant.

Yet, as early as the 1980s, when environmental goals were included in the country's sixth five-year plan, China has increasingly bowed to such pressures.

China's five-year plans are blueprint documents that set out the national strategy and vision on economic development for the five subsequent years. Despite these containing environmental aspirations, many early initiatives were outbalanced by industry's ever-increasing consumption of land and resources. Economic growth remained the country's priority.

China's 12th five-year plan (now called a "guidance strategy"), which started in 2011 and includes investments totalling around 3 trillion yuan, points to a possible watershed for the environment. From a previous national strategy that focused primarily on maximising growth, the 12th plan presents a programme of growth balanced with social harmony and environmental sustainability.

As Dr Li Lin, deputy country representative at WWF China, points out: "The 12th plan is regarded as the 'greenest ever'. The strategy shows a clear national willingness for green development." Li further explains the step change: "Of the mandatory targets set up in the 12th plan, about half are environmental targets."

These include a reduction in both the energy and carbon intensity of the economy, and an increase in non-fossil fuel energy sources (see panel, p.23).

"Once set within the plan, these targets are then allocated to local governments for implementation," says Li. Herein lies the challenge: the documents are only guidance. "Whether such national willingness can be translated into action at local level will largely determine the success of the plan," she concludes.

One step forward, two back?

The challenge for China, which is large and geographically diverse, is in finding solutions to interpret, implement, enforce and monitor, not just its latest five-year plan, but also policies and legislation at local level. Progress is moving in the right direction, but it is slow and bumpy.

Take environmental law. The Chinese government has made positive steps over the past decade by developing hundreds of EU-standard environmental laws. However, barriers to their compliance remain, explains Dr Yang Fuqiang, senior advisor on energy, environment and climate change at the Beijing-based natural resources defence council (NRDC).

"Unfortunately, local-level implementation remains a key barrier," he says. "The key law for protecting the environment, the environmental protection law [EPL], needs changing. It lacks compliance detail. This makes implementation and enforcement at local level difficult. It needs to be made more durable and forward-thinking."

Although the government proposed amending the EPL in August 2012, the plans fall short of what non-government organisations, like the NRDC, say is required. The changes put forward aim to reinforce the responsibility of local authorities and enterprises and close implementation gaps, but in light of the positive steps forward that the 12th plan represents, the proposed amendments are seen by many as step backwards. "It certainly feels that way," says Yang. "It's very disappointing. We have, however, fed back our comments during the 'first review' consultation stage, which ended on 30 September 2012. It is now a waiting game to see whether the government has taken our views on board."

The *Global Times*, a Chinese newspaper, went as far to say that the amendment had again prioritised development over environment. It also came as new data revealed that the environmental situation in China was worsening, with nitrogen oxide emissions in 2011, for example, 5.7% above their 2010 levels.

Yang says that, to address the environmental challenges that China faces, the legal system must support public interest environmental litigation, establish stronger enforcement and more robust pollution-permitting processes, and punish polluters with stiffer penalties.

Clean-tech ambitions

Where China is making great strides is in capitalising on turning its environmental risks into opportunities for further growth through competitive advantage. This is illustrated by the growing commitment to

Spot the difference

China's 12th five-year plan compared with its previous plans

Target	11th plan targets [against 10th plan]	11th plan achievements	12th plan targets [against 11th plan]
Energy			
Reduction in energy intensity (energy consumed per unit of GDP)	20%	19.1%	16%
Reduction in carbon intensity (carbon emitted per unit of GDP)	Not set	20.8%	17%
Increase non-fossil fuel energy sources (% of primary energy consumption)	Not set	8.3%	11.4%
Pollution			
Reduction in sulphur dioxide	10%	14.3%	-8%
Reduction in chemical oxygen demand	10%	12.5%	-8%
Reduction in ammonia nitrogen	Not set	n/a	-10%
Reduction in nitrous oxide	Not set	n/a	-10%
Water			
Reduction of water intensity (per unit of value-added industrial output)	30%	36.7%	30%
Forestry			
Forest coverage	20%	20.4%	21.7%

Source: Adapted from Goldman Sachs' global market institute, August 2012

developing its clean-tech sector. With dedicated investment and favourable policies, China is racing ahead as a leader in solar photovoltaics, for example. In five years, this sector has developed from scratch into a dynamic, globally-competitive industry. China is also making great advances in other clean-tech industries and is now the world's largest producer of energy-efficient lightbulbs and solar water heaters.

The growth of such industries in China also provides opportunities for UK businesses. A report in 2012 from the UK's parliamentary committee on energy and climate change, highlighted the £430 billion-worth of opportunities in China's growing markets for low-carbon technologies. It concluded that UK businesses have an opportunity to provide innovative technologies, skills, training and know-how in areas such as carbon capture and storage. Stephen Phillips, chief executive of the China-Britain business council, agrees. "UK businesses should take full advantage. If they don't, others will," he says.

Jaguar Land Rover (JLR) is one UK-based firm seeking to take advantage of China's growing focus on low-carbon technologies. It announced in November 2012 a joint partnership with Chery Automobile Company, under which a new factory will open in China producing JLR vehicles. The UK carmaker says the joint venture will focus on developing advanced technology and low-carbon automotive solutions.

China's 12th five-year plan can be used by UK businesses as a starting point in understanding the country's strategic emerging industries. Sectors, such as energy-efficiency, environmental protection, clean energy and alternatively-fuelled vehicles, are being nurtured with favourable tax breaks, policies and investment between 2011 and 2015.

The future's bright

Although China's progress in becoming a more sustainable economy has been slow, uneven and sometimes contradictory, the size and diversity of the country are what make the challenges, such as regulatory implementation at the local level, significant and complex.

At the end of 2012 China's went through its once-in-a-decade leadership transition. Out went president Hu Jintao and premier Wen Jiabao, and in came president Xi Jinping and premier Li Keqiang. The new leadership is not expected to make significant changes to the environmental commitments set out in the 12th five-year plan. "We believe the new leaders will continue and indeed strengthen environmental protection efforts and, hopefully, begin to turn around the environmental degradation that accompanied China's rapid development," says Yang.

The government's increasing commitment to reducing environmental impacts is expected to continue in the country's 13th five-year plan, particularly as China pledged at the 2009 Copenhagen accord to reduce its carbon intensity by 40–50% by 2020 against 2005 levels. "The next 10 years should be a real turning point for China," says Yang.

Catherine Wilson is an environment consultant.

Up in

Jackie Taylor outlines what firms need to known about the new EU legislation on industrial emissions

The Industrial Emissions Directive (2010/75/EU) (IED) came into force on 6 January 2011. It aims to provide a single coherent legislative regime for discharges by removing previous ambiguities and inconsistencies across member states, promoting cost effectiveness and encouraging technological innovation.

The IED replaces seven existing directives – on integrated pollution prevention and control (IPPC), large combustion plants (LCP), solvent emissions, waste incineration and the production of titanium dioxide – that the Environment Agency currently implements in England and Wales through the Environmental Permitting Regulations (EPR). The IED imposes new requirements on some of the installations that the agency already permits and extends the scope of activities, meaning more installations are covered by the EPR. It will also see the deregulation of some installations that are subject to IPPC rules in the UK, but not in the rest of Europe.

The Directive is being implemented as an amendment to the EPR (and through the Pollution, Prevention and Control Regulations 2012 in Scotland). A consultation on transposing the IED by Defra and the Welsh government closed on 6 June 2012 and the revised EPR came into force on 6 January 2013. The IED will be implemented over several years as follows:

- All new installations from 7 January 2013.
- Existing installations from 7 January 2014.
- Existing installations operating newly prescribed activities from 7 July 2015.
- LCPs must meet specific requirements from 1 January 2016.

The agency will regulate all Part A(1) activities, while local authorities are responsible for A(2) and Part B activities.

What's changing?

The IED brings together existing directives so there is no fundamental overhaul of the current permitting system, permits or controls. Permits will still be issued under EPR and be called permits, and the associated charges are very unlikely to increase as a result of IED.

Proposed amendments to the activity schedule references in the EPR to meet the requirements of the IED include:

- Some activities that were not described in the IPPC Directive, but were nevertheless regulated in the UK under the IPPC regime, will move to be regulated as Part A(2) or Part B processes and be regulated by local authorities. Some will require a different type of environmental permit (for example, for a discharge to controlled waters) and a few will cease to be regulated. Defra and the Welsh assembly government have, however, chosen to continue to include some such activities in the EPR, even though they are not described in either the IPPC Directive or in the IED, due to their environmental risk.

the air

- Removal of section 1.1A(1)(b), previously used for regulating the burning of many types of waste. In future, landfill gas engines will generally be regulated as activities directly associated with a landfill. Plants combusting biogas are likely to become waste activities, while plants combusting solid or liquid wastes are likely to be regulated under section 5.1, dependant on throughput. Smaller facilities will be regulated by local authorities, including those covered by the Waste Incineration Directive below the agency's 3 terawatt hour (TWh) threshold, but above the 1 TWh threshold currently applied by local authorities.
- Section 5.3 has been rewritten to refer to the disposal or recovery of hazardous waste. It is now more specific about the types of activities treated as installations where the capacity exceeds 10 tonnes per day, and now includes the blending, mixing or repackaging of waste prior to other 5.3 activities.
- Section 5.4 has also been rewritten and now refers to the disposal or recovery of non-hazardous waste (or a combination of the two) as well as the pre-treatment of waste for incineration or co-incineration; the treatment of slags and ashes; and the treatment in shredders of metal waste (including waste electrical and electronic equipment and end-of-life vehicles and their components which were not previously included). This section also captures larger biological treatment operations, including mechanical biological treatment plants, anaerobic digestion facilities and composting sites.

Revised guidance

To aid the introduction of the IED, the agency is revising its guidance and permitting processes. It will be publishing new notes and best available techniques (BAT) conclusions documents, although existing BAT guidance for installation activities remains relevant until these are ready. Revisions to the application pack, including forms and guidance notes, were released in December 2012.

These revised forms cover all applications submitted from 7 January 2013. BAT guidance for some newly prescribed activities can be interpreted from the agency's existing IPPC waste treatment and storage technical guidance (lexisurl.com/iema14111).

Planned revisions to guidance documents RGN 2 (on understanding the meaning of regulated facility) and RGN 4 (on setting standards for environmental protection) will incorporate changes demanded by the IED to the definition of facilities and to baseline assessment requirements. H5 – the site condition report guidance – is also being updated. The IED requires all applications to contain, as a minimum, a description of the condition of the installation site. Where applicable, a baseline report will also be needed containing information on the state of soil and groundwater contamination. New standard rules are being developed to simplify the permitting process (and reduce costs) for a number of activities, including: composting, anaerobic digestion and the treatment of waste ashes and slags.

The Directive will also necessitate some changes to the agency's OPRA – operational risk appraisal – scheme. Changes to permitting costs were included in a recent consultation on agency charges (lexisurl.com/iema13507), which closed on 9 December 2012.

Implementation process

The agency will be taking action to amend or alter a number of existing permits as a result of the IED. For example, variations to some permits will be needed to reflect changes to regulations that affect the activity schedule references. Also, permits for facilities that cease to be regulated will be dissolved through revisions to the EPR. Changes to the charging structure for these sites – including refunds for reduced subsistence fees for the January-to-March period – are currently being assessed. Permits that in future will come under the control of a local authority are likely to be migrated in March for implementation in the new financial year.

All applications for new activities submitted from 7 January 2013 will need to demonstrate compliance with IED requirements. This includes the use of revised forms, assessment of activities new to installations against BAT standards and baseline assessments of site conditions in accordance with the revised H5 guidance. Decisions on these new sites will be posted on the agency website via, in due course, an electronic public register.

It is likely that additional data gathering by the agency will be required at the point of determination to satisfy the European Commission requirements. Some existing facilities may continue to be controlled as exemptions or waste activities until July 2015. They will then need to go through a re-permitting process to validate BAT.

Dr Jackie Taylor is training lead on the Industrial Emissions Directive at the Environment Agency. Businesses with specific questions about the IED should contact their usual agency area or sector lead, or they can contact the customer contact centre at enquiries@environment-agency.gov.uk.

Shopping for savings

Energy efficient lighting and a new waste management contract are bringing broader business benefits for the Lowry Outlet mall. ***the environmentalist*** reports

Almost five million people visit the Lowry Outlet in Salford each year, enjoying shopping trips at its stores, dining at its restaurants and cafes, or watching the latest films at its cinema. With more than 80 retail and catering units, the mall is, unsurprisingly, a significant user of energy and producer of waste. And yet in November 2012, the outlet won a prestigious Green Apple award for its achievements in addressing precisely these challenges.

The award is the culmination of several years' work by the outlet's operations manager, John O'Boyle, to prevent as much as waste as possible from being landfilled and to radically reduce the site's carbon footprint. Over the past 12 months, O'Boyle has worked closely with the outlet's staff and its recycling company, JWS Waste Management, to divert 97% of waste from landfill. This work has resulted in more than 700 tonnes of waste being recycled or used to generate electricity.

The outlet has also significantly cut its electricity use and costs. Changing to lower-wattage bulbs in the centre's ceiling lights and in the ground-floor car park has prevented 356,957kg of CO_2 from being emitted and generated a financial saving of almost £75,000 a year.

"The changes we've made had an immediate impact on operational running costs and laid the foundations for longer-term commercial gains," says O'Boyle. "These positive results show that retail operations can make significant commercial gains, while also adopting a more environmentally-friendly approach."

Raising recycling

When O'Boyle joined the Lowry Outlet in 2006, all of the waste generated by the site went into compactors and on to landfill. Having previously worked as an estates manager at a large college, O'Boyle had a track record of more sustainable waste management that he sought to take forward in his new role.

Four years ago, the outlet installed its first cardboard balers and it now has processes in place for preventing all the main waste streams from reaching landfill.

The 714 tonnes of waste have been diverted over the past 12 months, comprised of approximately:

- 12 tonnes of plastic;
- 103 tonnes of cardboard;
- 10 tonnes of metal;
- 1.5 tonnes of wood; and
- 588 tonnes of general waste.

The only type of waste still being sent to landfill is food, and O'Boyle is now investigating potential methods of disposing of this stream in a more sustainable fashion.

The cost of the outlet's recycling programme is met via the service charge paid by the mall's tenants, such as retailers and cafes. The total outlay for the programme for the 12 months to June 2012 was £65,669.

Changes to its waste management activities include agreeing a contract for the entire mall with a single waste management supplier, JWS Waste and Recycling Services, in August 2010. Along with other suppliers, JWS had already been providing onsite waste management services, such as compactors, for several years. The outlet took the decision to centralise all waste management services with one supplier to implement a more effective strategy. Following a tendering process and the award of the contract, a portable compactor and a cardboard baler were installed at both of the outlet's loading bays. Also, the collection of metal, plastics and glass was incorporated into the contract.

According to O'Boyle, the contract with JWS, which is now into its second year, is progressing well. "Our relationship with JWS has gone from strength to strength due to their reliability, excellent standards and the remarkable results they have achieved year-on-year," he comments.

JWS's materials recovery facility is permitted to process up to 375,000 tonnes of waste each year, using mechanical separation combined with handpicking to ensure that more than 90% of the materials processed is diverted to resource recovery or energy production.

Following segregation, JWS prepares the waste to be recycled into new materials, including:

- aggregate for road and construction use;
- wood for chipboard production;
- soil for landscaping; and
- cardboard and paper for papermills.

Under the service contract, JWS provides the outlet with a weekly report itemising the types and amount of waste collected, and a monthly report detailing how much of the different streams have been recycled. The June 2012 certificate, for example, reveals that JWS collected 46 tonnes of waste and recycled 100% of the plastic, cardboard, metal and timber.

The outlet pays JWS £74 for every collection of waste, plus £73 for every tonne of waste that comes out of the compactors. It does not pay anything for the collection of plastic, cardboard and metal, and receives a rebate for some waste streams, including £40 per tonne of cardboard and £120 for plastic.

O'Boyle keeps a record of the costs and savings associated with the contract and maintains it is very cost effective. "The more waste we produce for recycling, the more we save," he adds. O'Boyle and his team have now installed recycling bins in its food court for general waste, cardboard, cans and plastic bottles. The plan is to extend this practice to the shopping centre itself.

Lighting up

Waste has not been the only focus of attention. Between May 2011 and April 2012, the outlet made a number of changes to its lighting to reduce electricity consumption and CO_2 emissions. During this period, 408 light fittings in the outlet's shopping area have been changed, reducing the wattage from 180W to 42W. This has cut electricity use from more than 1760kW hours (kWh) per day to just 411kWh, while annual running costs have fallen from £57,900 to £13,100.

The team also targeted one of the outlet's three car parks for reduced electricity consumption in this first phase of its carbon-reduction programme. In the lower car park, 154 light fittings have been converted to compact fluorescent fittings. This change reduced the wattage of each bulb from 180W to 60W and the daily electrical energy consumption from 665kWh to 221kWh. The annual running costs have similarly fallen by two-thirds – from £21,854 to £7,285. A further 83 lights in the lower car park have been changed to twin fluorescent fittings. For these bulbs, the wattage has dropped to 120W, with electricity consumption falling from 358kWh a day to 239kWh, and annual energy bills cut by £3,920.

In the shopping area itself, around one-third of the lighting is being switched off on a daily basis, which is forecast to reduce the outlet's carbon footprint by a further 64,547kg over the next year. This equates to an additional financial saving of £13,510.

Cashback

The outlet's strategy demonstrates that a shopping centre can be environmentally friendly and save costs without compromising on the quality of lighting. O'Boyle points out that these sustainability improvements have been made possible because lighting technology has developed significantly over the past few years. "The Lowry Outlet presents itself as a role model, to inspire other shopping centres and retail operations," he asserts. "We have demonstrated that by making simple changes, particularly in lighting, you can make substantial sustainability gains. At the same, you can reduce commercial running costs and recoup more than the initial outlay in the first year."

Following the changes to its lighting, the mall cut its carbon footprint by more than 356,950kg in the 12 months to June 2012. With the new light fixtures installed by in-house maintenance staff, the total cost of the changes was £34,176. However, the subsequent fall in lighting costs far outweighed the expenses and, overall, resulted in a healthy financial saving of £40,536.

O'Boyle says that the lighting changes are both innovative and commercial. For example, where the outlet changed from 180W to 42W light fittings, the lower-wattage lamps not only have the equivalent brightness, but also last twice as long as the old lamps, some 20,000 hours.

The changes to lighting save money in the short term and improve sustainability in the long run. "What we did not only impacts on savings from a lighting perspective, it also has a knock-on effect in reducing workload for the maintenance team who have responsibility for changing the bulbs," says O'Boyle. "Furthermore, the old fittings cost £13 each, whereas the new fittings only cost £4, which brings in further savings."

Next steps

According to O'Boyle, despite the tangible sustainability improvements already achieved, the outlet has only "scratched the surface" in terms of reducing its carbon footprint. He estimates that the shopping centre could save one million kilograms of CO_2 if all the lighting and other energy-efficient changes he has planned are implemented.

Following the success of the changes to the lighting in the lower car park, a business case to roll out similar alterations in the other car parks has already been submitted. The next phase will focus on the shopping mall's multi-storey car park.

The outlet is also reviewing "movement sensory lighting" in certain areas, which will only switch on when cars pass by. Also, all the site's hand-dryers are soon to be replaced, which will deliver lower running costs, as well as reduced energy use.

On the waste management front, O'Boyle is aiming for 100% diversion from landfill.

At the moment, the remit of O'Boyle's operations team covers the communal areas and car parks, but not the individual retail units. However, the team is working closely with the centre's shops, cafes, restaurants and the cinema to ensure the waste they produce is disposed in line with the recycling procedures that have been set up.

O'Boyle says there have been two main challenges associated with making the outlet a more sustainable operation. The first was gaining buy-in from the individual retailers for the new waste management programme. The other hurdle was getting the go-ahead from senior management for the initial investment in the new lighting systems. The fact that the financial outlay has already more than paid for itself represents a major part of the business case to secure future funding for similar projects.

"The changes we have made serve as a working example of how other large-scale retail operations can become more sustainable and reduce running costs at the same time," says O'Boyle. "Given the tough economic climate in the retail industry, that can only be a positive message."

As a result of its Green Apple award, the Lowry Outlet mall will have its winning paper published in *The green book*, an international reference book on environmental best practice – see lexisurl.com/iema14108 for further information.

Out of the frying pan, into the engine

David Fairchild finds that effective assurance is the only way to ensure waste feedstock for biofuels is from sustainable sources

With biofuels forming an increasingly significant component of the global energy mix, there is pressure to ensure they are sourced sustainably and are not causing indirect land-use change, which affects food supply and price. Concern that growing demand for biofuels is producing such outcomes prompted the recent announcement by the European Commission that it plans to alter the Renewable Energy Directive (2009/28/EC) (RED) by placing a cap on the amount of crop-based feedstocks that can be used to meet the 10% biofuels target set for 2020.

So-called "second generation" biofuels are made of materials (feedstocks) that are not suitable for the human food chain and may, therefore, pose less of a threat to food supply. Biofuels can also be made from feedstocks derived from waste, which has further benefits including preventing the need for disposal of a waste product, and having no direct land requirements for their production.

These are the fuels the commission wants to encourage. "Our clear preference is for biofuels produced from non-food feedstocks, like waste or agricultural residues," said climate action commissioner Connie Hedegaard and energy commissioner Günther Oettinger in a joint statement proposing the change to the RED.

Driving change

The RED and the Fuel Quality Directive (2009/30/EC) (FQD) are the main drivers behind rising demand for biofuel in Europe. While the RED sets out requirements for 20% of all energy to come from renewable sources by 2020, the FQD sets a target of 10% of transport energy to come from renewable fuels by the end of the decade. The RED and associated commission communications contain guidance on what meets the definition of a "sustainable" biofuel, and how this definition can be met by providing evidence on land use, greenhouse-gas (GHG) emissions and traceability.

The directives became EU law in June 2009, though the sustainability components only came into force in UK legislation in December 2011. Biofuels in each EU member state are governed by national schemes and requirements. In the UK, the transport department (DfT) currently requires road fuel suppliers to blend 4.7% biofuel with road fuel under the Renewable Transport Fuel Obligation.

The need to meet EU targets has, in certain member states, led to national incentives being put in place for biofuels with the greatest carbon saving – against the fossil fuel comparator given in the RED. The UK, Germany, Holland and Italy, for example, all have double-counting schemes in place, under which certain fuels derived from waste count double towards road fuel suppliers' obligations.

These incentives bring with them an increased risk of fraud as they increase the value of waste feedstocks; this heightens the need for effective assurance across the whole supply chain, to ensure that the biofuel feedstock is of genuine waste origin.

There is an ongoing debate around the definition of waste in relation to biofuels. The commission defines waste in this context as "any substance or object … the holder discards or intends or is required to discard". However, deciding what is and isn't waste is far from a simple task. The very fact of creating a use for a waste effectively turns it into a product. As such, the wastes currently being used as a feedstock for biofuels are generally limited to those specifically defined as such in the RED, namely used cooking oil (UCO) and tallow (rendered animal fat).

Well-oiled supply chains

All biofuel supply chains, including those for waste feedstocks, can be highly complex. There may be a large number of individual sources of wastes, for example canteens and restaurants providing used cooking oil. These small volumes tend to be aggregated by collectors, traders and finally processors into much larger parcels to sell on to road fuel producers and distributers. This diversity is critical to understanding the complexity of biofuel supply chains over those of fossil fuels, where crude oil for refining will generally originate in bulk from fewer sources.

Given these supply chain complexities and the multiple parties involved, getting a clear picture of where a batch of biofuel originated can be extremely challenging. Commercial sensitivities, language barriers and different modes of operation can further compound such complexity across international borders. This combination results in limited transparency along supply chains, giving rise to restricted information flows.

For biofuels to be counted under national obligations for renewable fuels as set out in the RED and FQD (and by road fuel suppliers), land use and GHG information has to be passed along the supply chain in a traceable manner.

There are essentially two options in the RED to determine the origin of supply: physical segregation; and operating a mass balance system. In the latter, the sustainability information attached to incoming material must match the outgoing sustainability information over a given period. As materials can be mixed, a mass balance system may reduce costs and complexity for operators compared to physical segregation, while still providing a traceable system.

Tracing the origin of used cooking oil is relatively straightforward. Once the UCO reaches the processor, it is esterified to form a used cooking oil methyl ester (UCOME), which can be blended with conventional diesel. As UCOME is derived from waste products there is no need to review land information, and there is a default GHG value given in the RED for UCO. Therefore, the only reporting requirements for UCOME are to demonstrate it originated from waste and to trace this along the full supply chain.

Evidence of original waste collection and its transfer along the supply chain can take many forms. Possibly the most robust form of evidence is a waste transfer note, which is required in some EU states, including the UK, when collecting waste products. Other types of documentation include supplier declarations and third-party statements.

Assuring traceability

For road fuel suppliers to have biofuels count against their obligation to supply a certain level of renewable fuel, independent auditing of biofuel batches is required by the relevant competent authority, which in the UK is the DfT.

Auditing is conducted on a "limited" assurance basis, where the auditor simply states that he or she has not found anything to suggest that the biofuel is not what it claims to be. This is a less stringent form of assurance than the "reasonable" level used for financial accounting, and some other environmental compliance schemes, such as the EU emissions trading scheme.

To achieve even a limited level of assurance, sustainability information must be passed along the supply chain in a transparent manner. This information is often summarised by each supplier in a carbon and sustainability statement, which is a declaration regarding the land use and GHG information linked to the supplied biofuel. Items such as contracts, bills of lading (documents used in the transport of goods by sea), transport documentation, waste transfer notes and supply chain audit reports will support this disclosure.

To aid the assurance process, the commission has approved a number of voluntary schemes to demonstrate compliance with the RED. Of these, only the ISCC, RSB, 2BSvs, RBSA, Red Cert and NTA 8080 have specific provision for waste feedstocks.

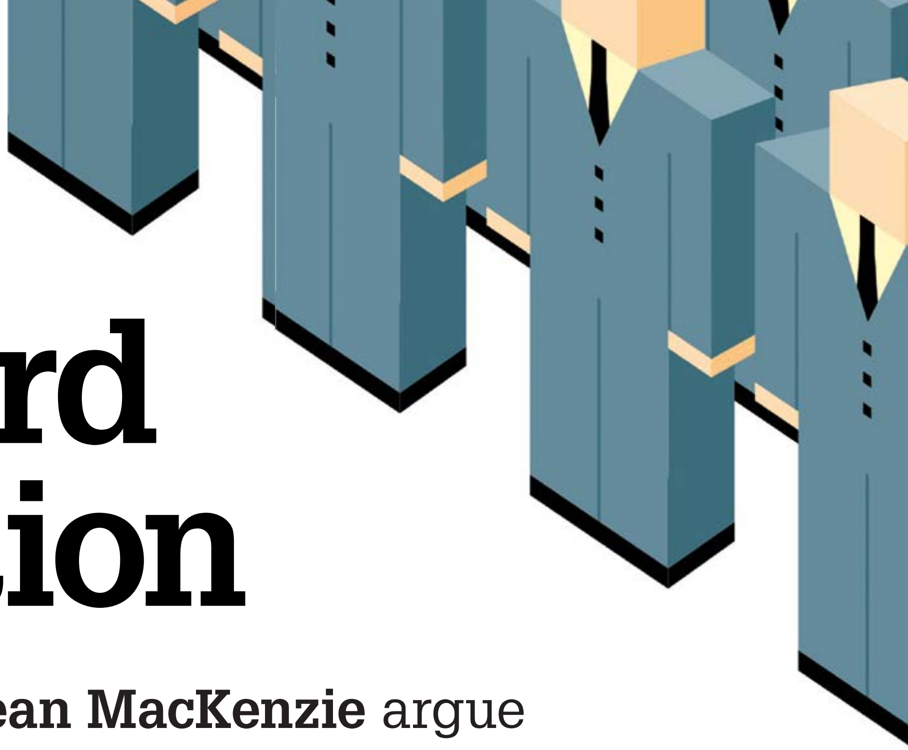
The systems for these schemes generally involve annual certification audits at each step of the supply chain, from the refinery downstream. Upstream from the refinery, supplier declarations are used to establish feedstock provenance.

While voluntary schemes ensure effective systems are in place, errors in data may only be picked up at a subsequent annual surveillance audit, by which time the fuel will have been long since passed on. Reviewing data on an individual cargo basis can add substance to information provided through voluntary schemes.

Catching up

The biofuels market has seen rapid expansion over the past few years and is set to grow further. UK capacity, for example, is predicted to reach 918 million litres this year, possibly rising to 1,268 million litres in 2016. The pace of expansion means that suppliers and regulators are still working to fully understand supply chains, traceability and assurance requirements. Biofuels derived from waste feedstocks are an effective way to alleviate this issue, but a robust assurance approach is essential to ensure that supply is sustainable.

David Fairchild is a senior consultant at Future Perfect, a division of GP Strategies.



Standard regulation

Colleen Theron and **Sean MacKenzie** argue that voluntary standards are helping to drive the introduction of legislation on sustainability

The nature, scope and speed of economic change present new strategic challenges for organisations and their stakeholders. There is greater demand for companies to disclose information on issues that are material to their operations, and there are more national and international voluntary standards that aim to encourage companies to make more sustainable production and purchasing choices.

With a growing legislative framework underpinning the principles of sustainable development, there is often uncertainty about the nexus between the two and whether standards have a greater or lesser impact on the way businesses behave.

Ahead of legislation?

The majority of international standards focus on management systems, specifying internal processes and practices that firms implement to obtain certification. They are highly comparable in the manner they operate and are voluntary.

The publication of ISO 20121, which addresses how organisations can deliver events in a more sustainable way, is the first ISO standard to delve more comprehensively into sustainability.

Although standards such as ISO 14001 – the international benchmark for environment management systems – and 20121 require a company to demonstrate compliance, meeting the letter of the law isn't enough to ensure certification. Instead, the driver for many companies to certify against an ISO standard is in showing a "beyond compliance approach" to differentiate themselves from their competitors.

Since the 1990s, the number of companies disclosing information on their environmental, social and governance performance has grown significantly. Sustainability reporting has for many large multinational companies become mainstream.

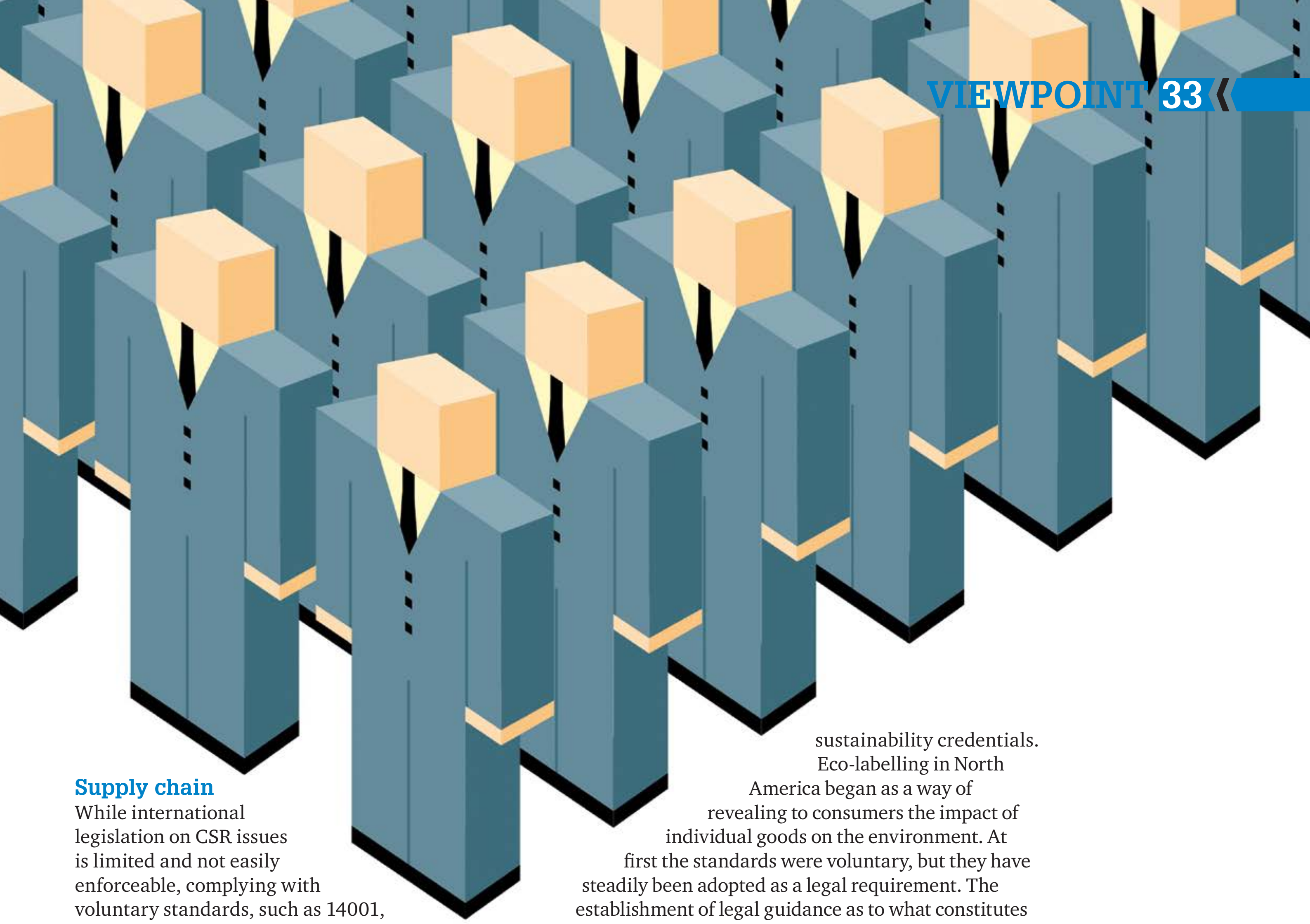
The Global Reporting Initiative (GRI) provides a reporting framework for companies and more than 4,000 organisations from 60 countries use GRI guidelines to produce sustainability or corporate social responsibility (CSR) reports on a voluntary basis. And, while there is a growing trend towards mandating non-financial reporting, it is important to note that in many instances CSR policies adopted by companies exceed the requirements imposed by legislation.

Isolating the source of these developments is challenging; the growth in CSR as a mainstream business concern is attributed to a combination of increasing self-regulation by companies (by applying ISO standards, for example), legislation (mandatory reporting on environmental impacts) and consumer pressure.

One of the concerns of a global economy is the ability of national governments to regulate corporations' environmental impacts and working conditions. In the absence of law, organisations can take advantage of differences in national regulations by shifting polluting or labour-intensive activities to countries with less stringent legislation. Standards, however, provide potential governance mechanisms beyond legal compliance.

Consumer pressure and companies' "licence to operate" has encouraged businesses to comply with standards covering issues yet to be comprehensively addressed by legislation in some jurisdictions. Clearly, national laws have limitations; Westminster has no power to dictate legal standards for factory workers outside the UK, but standards can transcend borders as signifiers of good practice. The UK Bribery Act, which covers corrupt practices abroad, may be the exception.

The definition of CSR and the extent of legislative requirements are key issues. Until 2011, the European Commission's definition of CSR did not include activities to ensure compliance with legislation. CSR was restricted to voluntary activities. Yet, under the influence of ISO 26000 (which provides guidance on how organisations can operate in a socially responsible way), the EU 2011 strategy for corporate social responsibility includes the following definition: CSR is "the responsibility of enterprises for their impacts on society". It states that respect for applicable legislation and for collective agreements between social partners is a prerequisite for meeting that responsibility. There is no definition of CSR in law, however.



Supply chain

While international legislation on CSR issues is limited and not easily enforceable, complying with voluntary standards, such as 14001, is comparatively straightforward for multinational companies.

For example, standards such as 20121 may help address the supply chain issues of a transnational firm, in that they require a centralised system to be set up that can then be adopted in its various global divisions. A central sustainability policy may be developed and changes made at each locality.

Meanwhile, compliance with sustainability legislation may impose radically different requirements in each jurisdiction a company is active. Many organisations source products or materials overseas where different regimes apply. However, even if legislation falls in step with standards, legal requirements may have a limited effect on just how sustainable the activities of multinational entities are across their international supply chains.

To ensure practices are truly sustainable, company policies must move beyond the requirements of national legislation. This is perhaps why voluntary management standards tend to move ahead of legislation; they are endowed with the kind of breadth and reach that is impossible on an international legal basis.

Legislation mimicking standards

Perhaps, because they tend to move quicker than legislation requirements first established by management standards have sometimes been incorporated into legislation. A good example is eco-labelling. It is a legal requirement in the US and Canada for cars and white goods to have a label detailing their energy performance; and in the EU there is an eco-label award scheme whereby goods complying with the criteria in Regulation 1980/2000 can be certified with an eco-label testifying to sustainability credentials.

Eco-labelling in North America began as a way of revealing to consumers the impact of individual goods on the environment. At first the standards were voluntary, but they have steadily been adopted as a legal requirement. The establishment of legal guidance as to what constitutes an eco-friendly product in the EU seems a first step to similar compulsory systems. In both instances, legislation is, in effect, incorporating long-standing voluntary standards.

In sectors, such as food, which are exempt from regulation in both North America and outside the scope of Regulation 1980/2000, voluntary standards are common. Rainforest Alliance labels, commonly displayed by coffee producers, and Marine Stewardship Council labels, evidencing sustainable fishing practices, are two. There is no requirement to display such labels, but growing concern for sustainable food production suggests a bottom-up influence on the development of standards that may eventually drive legislation.

Does the law still matter?

An existing regulatory framework does not preclude the development of voluntary initiatives. On the contrary, the existence of common indicators, definitions and methodologies can help to better define what "beyond compliance" means. The law and respect for the rule of law ultimately ensures a framework within which companies can operate with certainty.

Sustainability standards and sustainability legislation seem to be converging. Voluntary initiatives can influence regulations, which in turn find new ways to support and use such creativity. In a climate where businesses are increasingly judged on how they implement fair practices, laws and standards are playing a significant role in shaping sustainable markets.

Colleen Theron is a director at CLT Envirolaw, and **Sean MacKenzie** is contributor to CLT Envirolaw.

Top tips for future environmentalists

Looking for your first job in the environment profession or advice on how to further your fledgling career? IEMA asks the finalists of the 2012 graduate award to share the secrets of their success after completing their university studies

Last month, IEMA presented its 2012 graduate award – sponsored by commercial property company Land Securities – to Lorna Pilbin from British Gypsum. Recognised for her professionalism, dedication and ability to lead, Pilbin received her £1,000 prize, trophy and one year's graduate membership to IEMA at the Edie sustainability leaders awards in London. Lucy Barrett and Hayley Jewitt were also presented with their runners-up awards and prizes of £500 each by IEMA's chief executive Jan Chmiel and Neil Pennell, head of sustainability and engineering at Land Securities.

The IEMA graduate award is presented annually to emerging environmental talent, in recognition of their important role in developing the green economy. Specifically, the judges look for individuals who are doing more than just their day-to-day job. They look for graduates that have achieved something out of the ordinary, with measurable results, and can produce evidence of providing leadership in their organisation. Pilbin, Barrett and Jewitt have achieved all these objectives and are making a real success of their first roles in the environment profession.

The judges said that Pilbin, for example, had effectively engaged colleagues and stakeholders to make change happen. They described Jewitt's leadership, in chairing focus groups and mentoring undergraduates, as "inspiring", and said the methods adopted by Barrett at Stockport Homes to engage residents in a waste segregation and reduction scheme were "remarkable".

So, what advice have Pilbin, Barrett and Jewitt got for people moving into the profession? Here, they offer career tips to readers of *the environmentalist* who are aiming to land their first environmental role, either as a recent graduate or following a career change.

Winner – Lorna Pilbin

Job title:
Environmental assistant

Organisation:
British Gypsum

University course:
BSc in environmental science, University of Plymouth

Background:
Pilbin joined British Gypsum as a full-time member of staff after gaining work experience at the company during her gap year. She was awarded the 2012 IEMA graduate award following her successful work in developing and rolling out a company-wide water use policy.

Lorna's advice:

Lay your stepping stones early
The summer between your first and second years at university is a good time to start making contact with companies regarding employment and work experience. I researched lots of firms and their graduate schemes, and used my gap year to build experience. Working for British Gypsum during my gap year meant I was able to return there each summer and gain more experience for my CV. I found jobs.environmentalistonline.com essential for finding out about potential roles.

> The summer between your first and second years at university is a good time to start contacting companies

Learning doesn't stop when you graduate
The environment is ever changing and you have to stay abreast of new developments. Since graduating, I have passed the IEMA Associate entry exam, which has enabled me to demonstrate that I have broad knowledge and understanding of environment management. I have also started volunteering and have embarked on a master's degree in environmental decision making with the Open University – all of which will equip me with skills that I can apply in future roles. IEMA's environmental skills map has proved very useful and is a fantastic tool for environment professionals. My line manager used it in working through to become a chartered environmentalist.

Runner up – Lucy Barrett

Job title:
Environment management system assistant

Organisation:
Stockport Homes

University course:
MSc in environmental management and sustainable development, Manchester Metropolitan University

Background:
Barrett proved so successful in her first environmental role at Stockport Homes that her manager applied to have her six-month contract extended to a year.

Lucy's advice:

Embrace change and push yourself
Since I have been working at Stockport Homes, I have focused on developing key business skills. I have pushed myself to carry out a number of presentations to colleagues and other stakeholders – taking me out of my comfort zone. As a result, I've become more confident at public speaking, which is essential when you are trying to build engagement. While studying, I also volunteered at Manchester Metropolitan University's environmental and geographical society. I was subsequently elected its chair, which helped me to develop my leadership, communication and event organisation skills.

> There is literally no limit to the effort you can and should put in when applying for a new job role

Tailor your job applications
There is literally no limit to the effort you can and should put in when applying for a new job role. When searching for jobs, take notice of the company that is recruiting, research what they do and what they need, then tailor your application accordingly. Earthworks (lexisurl.com/iema14174) is a useful website if you are interested in working abroad. Visiting websites like the environmental legislation update service (lexisurl.com/iema14175) and Wrap (wrap.org.uk), and reading *the environmentalist* are great ways to stay up to date and to find out about case studies of environmental projects.

Runner up – Hayley Jewitt

Job title:
Graduate environmental advisor

Organisation:
Laing O'Rourke

University course:
BA in environmental management, University of Manchester

Background:
Jewitt received her nomination for the graduate award after a three-month work experience placement with the Manchester Metrolink during her degree.

Hayley's advice:

Work experience really makes a difference
Laing O'Rourke sponsored my degree and I was able to secure that sponsorship after completing an internship with the company. Working as an intern helped me to get a feel for the organisation and make contacts, and gave me a better understanding of the construction industry. The experience really enhanced my academic work, as well as my readiness for a full-time role. It provided a solid insight into the everyday practice of environment management on a large infrastructure project.

> Working as an intern helped me make contacts and gave me a better understanding of the sector

Don't underestimate the value of networking
While studying for my degree and completing my work experience at Manchester Metrolink, I gained a lot from talking to environment professionals from Laing O'Rourke and other organisations about their roles. This proved vital to the progression of my career as it gave me unrivalled insight into what to expect from the profession. It also allowed me to learn from their experiences and I could ask them for career guidance. Joining professional associations and networks like IEMA and 2degrees has also proved a worthwhile investment, as you not only gain access to all of the resources, events and publications they offer, but also a group of like-minded professionals.

Jan Chmiel to leave IEMA

Chief executive Jan Chmiel will be leaving IEMA in 2013 to take up a similar role with the Institution of Occupational Safety and Health.

In a joint statement, the chair of the IEMA board Adrian Belton and chair of the IEMA council Martin Bigg thanked Chmiel for his work over the past three years.

"Jan has guided IEMA since 2009 and provided a clear vision and leadership. He leaves at an exciting time for the profession, with skilled and competent environment professionals increasingly playing a central role as change agents in organisations, addressing the challenges and opportunities created in moving to a more sustainable economy.

"Jan worked with the support of a strong senior management team, who will continue to work with the board in delivering IEMA's vision and providing support to IEMA's members. On behalf of the Institute's board and council we would like to thank Jan for the immense contribution he has made over the last three years. We will be sorry to see him leave but he does so with our very best wishes."

Belton and Bigg also confirmed that Chmiel will continue to work directly with the IEMA board over the coming months to ensure a smooth transition while his successor is recruited. Details of the Institute's new chief executive will be published in *the environmentalist* when an appointment has been made.

Look out for the new *Downloaded*

IEMA is set to relaunch *Downloaded* – the Institute's enewsletter – as a fortnightly update later this month.

Publication of the newsletter – which was previously available as a download from iema.net – was halted in 2012 as the Institute looked at ways of making it a more useful format for members.

The revamped *Downloaded* will now provide members with links to the latest IEMA news, events, policy updates and the most popular downloads of recently published materials.

IEMA will email a link to the new *Downloaded* during the final week of January to all members with an active email address. Publication will then occur fortnightly, alternating with *the environmentalist* enewsletter and giving members a weekly update direct to their inbox. If you are concerned that we do not have your current email address, please contact us on +44 (0)1522 540069 or info@iema.net.

A focal point for developing policy

A new online environmental policy "horizon scanning" hub will be available to IEMA members from the end of January. It will also generate a monthly policy update in the IEMA news pages of *the environmentalist*.

During 2012, the Institute and its members contributed to the development of environment policy in a number of areas including green jobs and skills; the ongoing review of ISO 14001; the introduction of mandatory greenhouse-gas reporting; changes to the EU Directive on environmental impact assessment; and the simplification of the carbon reduction commitment energy efficiency scheme (p.5).

The new policy hub will feature regular updates on need-to-know developments across the Institute's eight main areas of policy focus:

- Skills and the sustainable economy.
- Environmental governance.
- Environmental management.
- Impact assessment.
- Climate change and energy.
- Resources.
- Biodiversity and ecosystems.
- Pollution.

The content will be driven by the ongoing and high-level horizon scanning work carried out by IEMA's three policy and practice experts – Martin Baxter, Nick Blyth and Josh Fothergill.

Each of the eight sections in the hub will be developed to include glossaries, relevant factsheets and practitioner notes, as well as links to further reading, new legislation and other recent developments in the area.

The pages will also feature IEMA's presence in the media commenting on policy and practice issues. The hub aims to provide members with a convenient platform to access materials and updates important for their role.

Areas of the hub will be available to members only, requiring all visitors to sign into iema.net to access the content.

A link to the hub will be available on the iema.net homepage.

Activity from the hub will be featured in a monthly article in the IEMA section of *the environmentalist* and a short update will be sent direct to members' via email in the refreshed *Downloaded* (see above, right), providing you with multiple opportunities to stay up to date on IEMA's environmental policy activity.

State of the profession poll

IEMA's annual survey of members' pay, benefits and experience closed on 11 January. The poll has been carried out every year since 2005 and provides a comprehensive insight into the state of the environment profession. Respondents from all IEMA membership grades were asked to provide details about their qualifications, length of professional experience, earnings and bonuses, changes to circumstances, responsibilities and job satisfaction levels. The high level of responses means that the data IEMA has collected can be considered a good representation of the entire profession.

IEMA would like to thank everyone who took the time to participate. It will use the information provided by members to inform businesses, recruiters and the media about the value of the profession throughout this year and beyond.

Analysis of the results is ongoing and a special pay and benefits report based on the findings will be published with the March issue of *the environmentalist*. The findings will also be available at environmentalistonline.com.

More successful IEMA members

IEMA congratulates the following individuals on upgrading their IEMA membership or achieving principal environmental auditor (PEA) status.

Associate

Claire Candelier
Michael Clarke, NHS
Douglas Cross, Elekta
Rachael Everard
Adam Gent, Sustainable Commercial
Kimberley Greed, Workplace Law Environmental
Stephanie Griggs-Trevarthen, Hyder Consulting
Colin Houston, Institution of Environmental Sciences
Lucy Palmer, Environment Agency
Oliver Pye, Arup
Sarah Robertson
Joshua Stroud

Dual

Greig Blayney, Dumfries and Galloway Council
Caroline Cochrane, Aggregate Industries UK
Graham Hutchinson, Fluor
Joanne Powis, TfL
Roddy Yarr, University of St Andrews

Full

Nicholas Gill, MWH
Keith Goss, Olympus KeyMed
Kevin Herman, WSP Environmental
Katie McFloyd, Balfour Beatty
Andrew Oswald, St Edmundsbury Council
Martin Page, Clear Channel

PEA

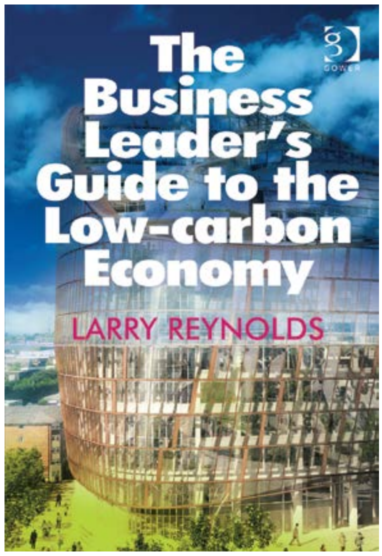
Rachel Rae, Eli Lilly & Co

IEMA events

Date	Region/Time	Topic
28 Jan	North West	Tap into a reservoir of resources (Lancaster University)
31 Jan	North West	Managing water (Salford University)
5 Feb	South East	Practitioner views on the EU proposals for the future EIA Directive (London)
6 Feb	Republic of Ireland	Practitioner views on the EU proposals for the future EIA Directive (Dublin)
7 Feb	Northern Ireland	Practitioner views on the EU proposals for the future EIA Directive (Belfast)
8 Feb	Central Scotland	Practitioner views on the EU proposals for the future EIA Directive (Edinburgh)
18 Feb	South East	Practitioner views on the EU proposals for the future EIA Directive (London)
19 Feb	South East	Practitioner views on the EU proposals for the future EIA Directive (Oxford)
20 Feb	North West	Practitioner views on the EU proposals for the future EIA Directive (Manchester)
21 Feb	West of Scotland	Practitioner views on the EU proposals for the future EIA Directive (Glasgow)
25 Feb	South West	Practitioner views on the EU proposals for the future EIA Directive (Exeter)
27 Feb	Wales	Practitioner views on the EU proposals for the future EIA Directive (Cardiff)
Membership workshops		
5 Feb	North West	Full and CEnv workshop (Manchester)
12 Feb	Yorkshire and Humber	Full and CEnv workshop (Nottingham)
26 Feb	Central Scotland	Full and CEnv workshop (Edinburgh)

The business leader's guide to the low-carbon economy

Larry Reynolds / Gower / Hardback £60 / ISBN 978-1-4094-2351-5

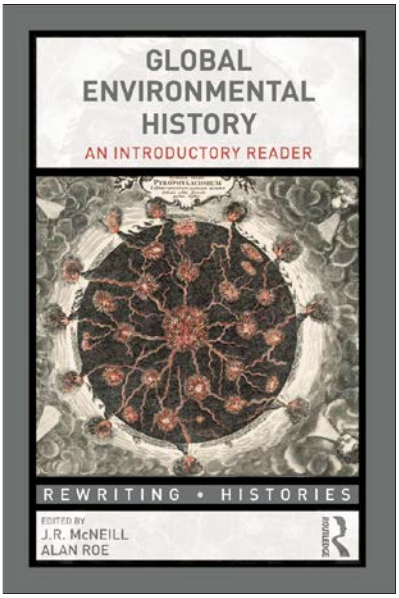


This is a readable and engaging book, peppered with examples from companies, big and small. Larry Reynolds' argument is that climate change is a fundamental issue of business risk. The likelihood of dangerous climate change is high and the impact is high; the only uncertainty is timescale. While businesses can't predict the future, they can strengthen their understanding of what might happen and arm themselves for change. Reynolds paints four pictures: of a world where present trends continue (gloomy); of conflict (even gloomier); of technology to the rescue (an optimistic view of top-down change); and of "less is more" (where society's consumption patterns change). He highlights and explores the implications for businesses in each scenario. Although apparently targeted at business leaders, the book's primary audience seems to be those who are seeking to influence senior management teams, and there's also a strong UK bias to the examples. This means that some key aspects of business leadership are largely invisible. A lot of ground is covered and inevitably some depth is lost – the emergence of new corporate partnerships with not-for-profits is mentioned only fleetingly, for example. Reynolds is also too quick to conclude that rapid moves to a sustainable business model are necessarily destructive. Business leaders will need new skills to adapt their organisations to face the risks Reynolds describes. If this book can help to inspire action, then it will have proven worthwhile. And, in the mean time, the author has done a good job in providing a readable survey of the terrain.

Review by Mike Peirce, director of strategy and communications at the University of Cambridge programme for sustainability leadership

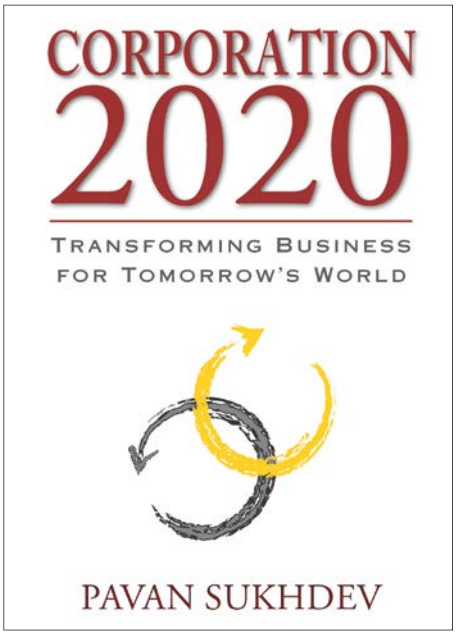
Global environmental history: an introductory reader

Edited by John R McNeill and Alan Roe / Routledge / Paperback £28.99 / ISBN 978-0-4155-52053-9



Humans have always transformed the environment in which they live, but often fail to recognise, until it is too late, the true nature of the environmental degradation they inflict. Environmental history is a relatively new field of academic study that can help us better understand that legacy by exploring past relations between people and their environment. *Global environmental history* is a series of essays put together by two academics at Georgetown University, John R McNeill and Alan Roe, as an introduction to the field. Organised in three parts – global perspectives, regional perspectives and environmentalism – topics covered include the impact on countries' natural environment by European colonisation; how mining has transformed Latin America; and what 3,000 years of unsustainable growth has done to China's ecosystems. If you're interested in how human activity has created the environment we have today, then this book is worth a read. Did you know, for example, that in 1669 Louis XIV created the French Forest Ordinance, which penalised forest destruction and regulated tree cutting, and was intended to repair the damage wrought by the destructive use of natural resources? Now, if only our current leaders took a similar stance on environmental protection …

Review by Paul Suff, editor of the environmentalist



Corporation 2020: Transforming business for tomorrow's world

Pavan Sukhdev / Island Press / Hardback £18.99 / ISBN 978-1-61091-238-9

In this book, Pavan Sukhdev tries to convince us that the bell has tolled for "business as usual", as he paints a picture of two entities, Corporation 2020 and Corporation 1920. Corporation 1920 is characterised by the excesses of consumption, extravagant senior management salaries, misleading advertising, corporate lobbying and financial leveraging, supported by a legal framework that protects it and even provides a financial bailout if one is needed. Corporation 2020, meanwhile, requires commitment to higher purposes such as transparency with regards its impacts, employee ownership and resource taxation. Uniquely for a book on corporate responsibility, an economic lens is applied to the sustainability debate, with the heart of the argument being a redefinition of capital that extends beyond monetary confines to include natural capital. The author concedes that capitalism has dispelled other economic models, but highlights its failures, including significant disparities in incomes and environmental degradation. Sadly, there is also a subtle awareness that there is inertia when it comes to changing Corporation 1920 – a reluctance to "kill the goose that laid the golden egg". Which is why this book begins with an appeal to the students of today – the leaders of tomorrow – to make Corporation 2020 a reality.

Review by Lowellyne James, lecturer at Robert Gordon University

Sand, spills and body armour

Environmental engineer **Lloyd Clark** describes his work in the Iraqi oilfields

In autumn 2010 my then employer, WorleyParsons Engineering, accepted a contract to work on an oilfield in Iraq developing an environment management system (EMS) and monitoring impacts at the site. It was the most dangerous, intriguing and memorable project I have ever worked on.

I had worked in the Middle East as an environmental engineer for three years and was based in Dubai when the opportunity to work in Iraq arose. As somewhat of an adrenaline junkie this type of "extreme engineering" seemed just the ticket. When I first stepped on to the tarmac at Basra airport and an ancient, rusty, bullet-ridden bus took me to a shack called immigration I knew then that I was in for an adventure.

Despite common perceptions, Iraq is not one big desert, but has a number of large water bodies, including the Euphrates and Tigris rivers, as well as a multitude of environmental havens, including some of the world's largest marshlands. These are home to protected species, such as the Basra reed warbler, which have been threatened by upstream channelling and damming as well as by local projects. Only now is the environment being given a chance to fight back.

The oilfield we worked on covers $500km^2$ and contains marshlands, rivers, farmland and several villages. One of my main tasks was to document the condition of the site and establish an EMS, with the intention of controlling and reducing the environmental impacts of the oilfield. It was a challenge from the start, in particular having to work in a war-torn environment. Trying to raise environmental awareness in a region where preserving the environment was very much on the backburner, was a major concern, as was security.

Detailed security plans were made for those of us working in the field. Generally, there was a single field engineer, either myself or another environmental specialist, who would oversee activities. The field engineer was guarded by no fewer than six armed security personnel, including a medic. Armour-plated Toyota Land Cruisers with three-inch thick bulletproof windows provided transport and we wore 16kg body armour and a kevlar helmet at all times – unless an area was deemed to be safe, which wasn't often.

While on the move there is a continuous threat from attack – $50,000 was the going rate for a kidnapped westerner – as well as from improvised explosive devices and unexploded artillery. To say we were constantly on our guard is a massive understatement; if you valued your life or limbs, you took every precaution. In such conditions it is safest to live on a military base. Our accommodation consisted of cosy, refurbished freight containers with a concrete wall protecting us from rockets. To begin with, the rocket attacks frayed our nerves – I became ready to hit the ground whenever I heard a car alarm go off – but you get used to them and, towards the end of my stay, I barely noticed them.

Security and weather issues aside, there was a job to be done in identifying existing environmental impacts and working to reduce them. Iraq is still suffering from decades of neglect and the oil production processes are not what you would expect on a modern oilfield. There are wells to extract the oil and pipes to distribute it, but little else. Building a control centre was a completely new concept, for example. The bare essentials ensure the flow of oil continues but, while this is changing with the influx of international petroleum companies, the change is slow.

One of our biggest concerns was the dangerous gases released during oil extraction. Monitors were worn by our team and breathing apparatus was available to minimise inhalation, but teaching the locals to respect these gases was not easy. I was often told that they did not need monitors because they were "immune" to the effects of the gases. Past fatalities had almost always been logged as employee stupidity.

For a long time the environment has taken a backseat in Iraq. Previously, no measures were taken to protect the environment, and Iraqi staff still struggle to contemplate incorporating environmental measures into their antiquated production system. The lack of equipment and processes results in problems not seen in western oilfields occurring daily, including releases of crude oil and extracted fluid, liquids and gases. On top of this, the country has hardly any waste-management facilities or infrastructure, and is particularly ill-equipped to deal with hazardous waste.

After a year our contract came to an end and a team of local graduates was employed to continue our work protecting the environment. The project was an intense experience and taught me to deal with the most extreme working scenarios, while ensuring the job continued. I also gained an appreciation for a society suppressed for a generation, but now wanting to change. When I look back at my time in Iraq, I am proud of what I did, but my thoughts dwell on the security team that put their lives on the line to protect me 12 hours a day, every day.

Lloyd Clark,
IEMA Affiliate, environment and sustainability manager, Addax Bioenergy

Charnwood

SUSTAINABLE DEVELOPMENT OFFICER

PO1 (SCP 35-38) £29,236 up to £31,754 – 22.2 hours per week **Ref: A015**

The Planning and Regeneration Service is responsible for bringing forward and implementing the Council's Local Plan and other non-statutory strategies and policies. It has a leading role corporately in ensuring the Council fulfils its commitments to reducing carbon emissions. The Service now requires an enthusiastic, motivated and organised professional with significant recent experience of working across local authorities in the development of environmental policy, strategies and projects.

You will make a significant and immediate contribution in the development of a new Climate Change Strategy and in setting out the Council's response under the Climate Local agreement. Working across the Council you will also be involved in identifying opportunities for funding and joint working with our partners to develop environmental projects. A sound understanding of the major aspects of current legislation and government advice in relation to climate change and a broad experience of dealing with complex policy issues is therefore essential.

You must be proactive and able to communicate clearly and effectively with a wide variety of people and work to tight deadlines with the minimum of supervision, exercising tact and diplomacy at all times.

Job details and application forms are available online at www.leics.gov.uk/jobs If you are unable to access the internet please telephone 0300 303 0222 quoting the job reference number. Closing date: Thursday, 31st January 2013.

No agencies please.

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Contact Elle Umeh
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Senior/Principal Air Quality Consultant – Hemel Hempstead

The RSK Group plc is one the UK largest independently owned Environmental Consultancies, providing its clients with a one-stop-shop by offering a broad range of environmental, health and safety support services.

The Air and Permitting team provides businesses with consultancy and permitting advice in relation to planning and development opportunities, and occupational and environmental health. With an impressive client list that covers power and energy, construction, manufacturing and transportation there has never been a more exciting time to join!

Senior/Principal Air Quality Consultant – Hemel Hempstead
Key responsibilities will include:

- Visiting sites (national and international) to monitor ambient air quality and dust using a variety of passive and active sampling equipment
- Predictive assessments using detailed air dispersion models
- Data analysis and interpretation
- Preparing factual and interpretative reports
- Production of quotes and tenders

Desired experience
The suitable candidate will ideally have extensive consultancy experience, with evidence of leading on projects and preparation of tenders.

In addition you will need:

- Knowledge of science related to air quality, emission estimation methodologies and meteorological processes is essential
- Experience using dispersion models/tools like AERMOD, ADMS and DMRB
- Experience in monitoring air pollutants, using both active and passive samplers
- Detailed knowledge of key air pollution policy issues at UK and EU level.

Person specification

- Should be able to work as part of a team or individually
- A willingness and ability to train other team members
- Ability to travel within the UK and overseas
- Aptitude towards marketing and business development

Salary – £negotiable
All candidates applying for positions with RSK Group must be eligible to work in the UK/European Economic Area. Candidates should confirm this when applying with their CV and covering letter to Sarah Murphy, recruitment manager, at smurphy@rsk.co.uk.

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