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IEMA works alongside government, the media and industry to enhance the recognition of the profession and promote the importance of practitioners in combating climate change, working towards a low-carbon economy and building a sustainable future.

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Coal's renaissance?

Coal consumption across the world last year was at its highest level since 1969. Given the association between burning coal and climate change, why is consumption now rising? Scientists at the Tyndall centre for climate change research say rising consumption is due to a fall in the price of coal, which is mainly because the US has switched to burning large amounts of domestically extracted shale gas to generate electricity.

The upside from burning shale gas in power stations rather than coal is a reduction in emissions. But, as the Tyndall report points out, US emissions have simply been displaced elsewhere as other countries take advantage of cheap US exports to burn more coal.

Last year's global coal consumption – generating more than 30% of the world's energy – was not a blip, however.

The World Coal Association reports consumption has been rising by more than 4% a year since 1999.

The US may be reining back on its domestic coal use and exporting more of the fossil fuel, but other major

Global coal consumption in 2011 was the highest since 1969. The sooner CCS is deployed the better. Unfortunately, development continues at a snail's pace

economies are not. Germany opened a new 2,200MW coal-fired power station in August, and coal consumption in the EU's biggest economy was 1.2% higher in 2011 than in 2010. Energy consumption data between April and June 2012 for the UK, meanwhile, reveals that coal's share was at its highest level for 14 years.

Unlike in the US, European gas prices are high. And, with the cost of carbon allowances in the EU emissions trading scheme (ETS) low, there is little incentive not to substitute expensive gas with cheaper coal.

Strengthening the price of ETS allowances may help reduce coal consumption, but with up to 1,004 billion tonnes of coal reserves left in the world – equivalent to 130 years of global coal output at 2011 levels – the sooner carbon capture and storage (CCS) is successfully deployed the better. Unfortunately, the development of CCS technology continues at a snail's pace. Although four projects have made the UK's shortlist for funding (p.6), a decision on which ones will finally receive some money from the £1 billion pot will not be made until next year. That's six years since the first CCS competition was launched!



Paul Suff, editor

Short cuts

Welsh body named

The new body that will replace the Environment Agency Wales, the Countryside Council for Wales and Forestry Commission Wales will be known as Natural Resources Wales, or Cyfoeth Naturiol Cymru, environment minister John Griffiths has announced. "This name communicates well the remit of the new body, covering all of the roles of the three current bodies," said Griffiths. He also said the new body will provide a more streamlined way of working than currently exists with the three separate organisations. Ten non-executive directors of the new body have been selected, including: Dr Mike Brooker, former chief executive at Welsh Water; Dr Madeleine Havard, the current board member for Wales at the Environment Agency; Morgan Parry, the chair of the Countryside Council for Wales; and Nigel Reader, a board member with both Natural England and the Marine Management Organisation. Natural Resources Wales will begin operations in April 2013.

Retailers tackle waste

UK retailers and food manufacturers that signed up to a voluntary agreement to reduce food and packaging waste have already exceeded some of its targets, WRAP has confirmed. The 53 signatories to the second phase of the Courtauld Commitment agreed to cut food and packaging waste generated in their supply chains by 5% between 2009 and 2012. By the end of 2011 they had already cut waste by 8.8%, says WRAP. The firms, which include Boots, Innocent Drinks and Waitrose, had also cut total packaging waste for groceries by 8.2% against their 10% 2012 target. The news came as 19 of the 20 members of the EU's retail forum, pledged to cut food waste by running campaigns to raise consumer awareness of how they can prevent waste. Meanwhile, in the UK, the number of hospitality firms committing to a new WRAP initiative to cut food and packaging waste by 5% by 2015 has risen to more than 100 in just three months.

Pollution incidents at 10-year low

EA confirms move to assurance-based regulation

Pollution Serious industrial pollution incidents from regulated sites have fallen to their lowest level for over a decade, the Environment Agency has announced. At the same time, pollution events in the water and waste sectors, the largest permitted sectors, increased last year.

The latest sustainable business report from the environment regulator for England and Wales (lexisurl.com/iema13833) reveals there were 620 serious pollution episodes in 2011, 4% fewer than in 2010. Since 2000, serious pollution events have fallen by 52%, it says. However, 2011 also saw an 11% year-on-year increase in serious pollution incidents across all sectors, including the water and waste industries and sites not regulated by the agency.

Water company assets caused 120 serious pollution events in 2011 – half of which were from sites regulated by the agency. This is almost double the amount in 2010 (65 episodes) and the same number as recorded in 2000. Meanwhile, companies involved in waste activities caused 101 serious pollution incidents in 2011, up from 75 in 2010. And more than 40% of those linked to waste companies in 2011 were from sites regulated by the EA.

The agency says the relatively poor performance of the water and waste

sectors is due to a rise last year in the number of biowaste facilities, which are new to regulation, and an increase in the number of water companies self-reporting pollution events.

More companies are achieving the highest A excellence rating for environmental performance, while the number receiving the lowest ratings (D, E and F) continues to fall, says the report. Overall, 10,439 permits in 2011 were rated A, and only 471 permits were rated D, E or F. The agency has also confirmed that it is moving to an assurance-based approach for better-performing sites, allowing high-performing operators with environment management systems to certify their own compliance by using independent audits, reducing inspections and charges accordingly. The approach will be trialled at more than 30 sites over the next 12–18 months.

Commenting on the findings, Chris Smith, chair of the agency, said: "Achieving both economic growth and the protection of the natural environment is not always easy but can be achieved. It will not happen without effective regulation of the impact business has on the environment and a commitment from businesses themselves to act as responsible neighbours and good corporate citizens."

Firms need to get ready for reporting

Reporting One-third of the UK's top 350 firms still need to put in place systems to capture and report their emissions data ahead of the introduction of mandatory greenhouse-gas (GHG) emissions reporting next year.

The latest findings from the Carbon Disclosure Project (CDP) on reporting by companies in the FTSE350 index reveals that currently 64% include GHG emissions data in their financial reports, leaving 36% still to act.

The CDP's results come as IEMA responded to the government's consultation on proposed regulations requiring the disclosure of GHG emissions in companies' annual reports. It warns that a lack of clarity over green-tariff electricity in the draft legislation means it is unclear which firms can ultimately claim the "carbon benefit". It wants the final regulations to include a requirement that

emissions from electricity consumption should be reported using a grid average. Firms buying electricity on green tariffs would be able also to report their lower emission calculations, but requiring all firms to report grid-average emissions will ensure consistency in reporting and minimise confusion, according to IEMA.

The Institute also highlights potential gaps in accounting for emissions from stored sources and from land owned by the reporting company. IEMA also notes that the existing Defra guidance on measuring and reporting GHG emissions will not by itself address all issues that companies will need help with in meeting their obligations, and advises the government to provide more support ahead of the regulations coming into force.

Under the government's plans, more than 1,000 FTSE listed companies will have to report their GHG emissions from 2013.

Commission proposes 12-week limit for EIAs

Planning Local planning authorities will have just three months to deliver a final consent decision for environmental impact assessment (EIA) projects, under European Commission plans to update the EIA Directive (2011/92/EU).

Following the consolidation of previous amendments to the original 1985 Directive last year, the commission has outlined comprehensive plans to renew the legislation in a bid to streamline the EIA process; ensure a greater consideration of climate change and biodiversity in EIA; and create a more consistent approach across member states.

Under the proposals, EIA screening and scoping would be combined into a single process, and developers of projects listed under Annex 2, would be required to provide a screening report to local planning authorities describing: the project; a baseline analysis of the affected environment; the likely significant effects; and mitigation measures.

On the basis of this report the authority will then decide if an EIA is required. However, unlike under the current regime, if an EIA is not required the authority will have to outline in its decision any design alterations and mitigation measures that it envisages will be needed to reduce significant effects, as well as its reasons for not requiring an assessment. If an EIA is required, the scoping process, including consultation with statutory bodies, will need to be completed within the same three-month period – although this could be extended to six months in some cases.

In a bid to further streamline the process, EIAs would have to run simultaneously alongside any other assessments required under EU legislation, such as those under the directives covering the EU water framework and habitat protection. The commission gives member states the option to choose whether the assessments are carried out individually but coordinated by the local authority, or all incorporated in the EIA.

Meanwhile, to improve the quality of EIAs, the commission's amendments have added greater detail on what environmental topics should be covered,



including explicit references to climate change, human health and biodiversity, as well as ecosystems services, water availability and the risks posed by natural disasters.

Under the amendments the assessment of potential cumulative effects, will have to consider activities in the area, not just other projects. And the final environment statement will have to cover "reasonable alternatives" to the project, including "technical, locational or other alternatives", and identify the alternative with the least environmental impact, as well as the reasons behind the chosen option.

A further key change is for all EIAs to be either carried out by, or assessed by, "accredited EIA experts". However, the commission has not made it clear whether these experts are at the broad EIA level or at the more specialist level, such as ecologists or hydrologists.

IEMA, which played an important role in informing the commission's plans, welcomed the potential changes. "If adopted, the proposals would create much greater certainty on both the scope and timescales of the EIA process," commented Josh Fothergill, IEMA's policy lead on EIA. "However, whether this would actually streamline the process would be influenced by how the new requirements are built into UK regulation. For example, the EIA quality mark operated by IEMA, could provide a basis for the UK to create an EIA experts accreditation process, but I'm sure it won't prove quite that simple."

The authorities hope to have a new Directive adopted in 2014, with implementation across the EU by 2016.

Short cuts

Scottish landfill tax

The Scottish government has launched a consultation on how the landfill tax regime could be improved when, under newly devolved powers, the administration takes over responsibility for the tax in 2015 (lexisurl.com/iema13779). While the government plans, at least initially, to retain the structure of the existing regime and set taxation levels on a par with the rest of the UK, it asks if the system could be simplified. In particular, the consultation queries whether the list of materials qualifying for the lower rate of tax could be made easier to understand; if any changes should be made to the list of exempt materials; and if there are any materials that should, in the longer run, be charged a different rate. However, Scottish ministers have made it clear that they will not reverse changes previously made to the rules regulating qualifying materials. The consultation closes on 15 January 2013 and the Scottish government plans to introduce a new Landfill Tax Bill to Scotland's parliament next spring.

Funding biodiversity

Governments from across the world have agreed to significantly increase spending on protecting biodiversity to ensure the internationally agreed Aichi targets are met. At the 11th conference of the UN Convention on Biological Diversity in Hyderabad, India, representatives from developed countries committed to doubling financial support to developing economies to prevent biodiversity loss by 2015, as well as investing more to protect ecosystems within their own borders. There was also agreement on protecting a series of biologically important marine areas that fall between national authorities, and on new targets to increase the number of countries including biodiversity in their national development plans. The agreements followed a warning at the start of the conference that international progress towards the 2020 targets was poor and that half of the world's richest biodiversity zones remain unprotected.

IN PARLIAMENT



The energy omnishambles

Alan Whitehead is MP for Southampton Test

It can be little surprise that David Cameron's pledge to "force" energy companies to offer all customers the cheapest tariff unravelled within a few days. It doesn't take a genius to work out that if energy companies were forced to offer their cheapest tariff, they would choose to offer only one tariff, and one they could make a profit from. In quick succession, ministers told us in so many words that this promise couldn't be met. But the prime minister insists "we are going to use the Energy Bill so we make sure ... customers get the lowest tariff."

And so now officials are scurrying around DECC, trying to work out how this plan can be incorporated into legislation that had not a word about tariffs in any of its previous iterations.

So, what sense can we make of all this? It is an energy omnishambles, of that there is no doubt. I first thought that the announcement was simply a slip of the tongue – but the fact the PM stuck closely to his formulation a few days later suggests other factors are at play.

It certainly was the case that Number 10 wanted to signal that there really were three players in the debate, not just the territory staked out between relatively sensible, renewable and low-carbon policy advocacy from DECC, and full-blooded, gung-ho "go-for-gas-and-never-mind-the-climate-consequences" line of the Treasury. Who better than Number 10 to position itself as the intermediary on the side of prices, consumers and "energy realism"?

But what is alarming, is that the lack of understanding and expertise on energy policy at the prime minister's office meant that no one spotted this particular intervention as self-evidently lame before allowing Cameron to launch it. The consequence is that the Number 10 position has more or less blown up on the launch pad, and the scrap between the underpowered energy department and the overweening Treasury for the soul of energy policy will continue unabated.

DECC shortlists CCS projects

Emissions DECC has named the four carbon capture and storage (CCS) projects that will continue to compete for the £1 billion of funding available through the government's CCS commercialisation competition.

The four projects – Captain Clean Energy, Peterhead, Teesside Low Carbon, and White Rose (see panel) – were selected from eight bids. "The projects we have chosen to take forward have all shown that they have the potential to kick-start the creation of a new CCS industry in the UK," commented energy secretary Ed Davey.

Although pleased the programme was moving forward, the Carbon Capture and Storage Association urged the government to fund all four shortlisted schemes, reminding it that, when coming to power, the coalition pledged to support four commercial-scale CCS projects. "If the UK is to make maximum benefit from this cost-effective low-carbon technology we need to see four projects and more

taken forward. To achieve a largely decarbonised power sector by 2030 will require at least 20–30GW of fossil-fuel power stations fitted with CCS to be in operation – there is no time to lose," said chief executive Jeff Chapman.

DECC has also confirmed it is supporting the Teesside and White Rose projects in their bid to receive financial aid from the European Commission, via its NER300 competition.

Chris Davies MEP warned that the commission will be taking a long, hard look at DECC's submission, as the UK's first CCS competition started back in 2007 and there is still no definite conclusion to the process. He said the commission will want to be convinced that the UK is making a genuine financial commitment to support CCS.

"Decisions deferred are better than decisions denied, but the UK is the best-placed country in Europe for cost-effective CCS development and it surely time we bit the bullet and got on with the job," he said.

The four shortlisted projects

Captain Clean Energy – A proposal for a new 570MW, fully abated coal integrated gasification combined cycle (pre-combustion) project in Grangemouth, on the Firth of Forth, with storage in depleted offshore gas fields.

Peterhead – A 340MW post-combustion capture retrofitted to part of an existing 1,180MW combined cycle gas turbine power station at Peterhead, Scotland.

Teesside Low Carbon – A pre-combustion coal gasification project on Teesside that would convert coal into both a hydrogen-rich synthesis gas (syngas) and CO₂, with the latter stored in a depleted oil field in the North Sea and a saline aquifer.

White Rose – An oxyfuel capture project at a proposed new 304MW fully abated coal-fired power station on the Drax site in North Yorkshire.

ECHA failing to enforce REACH

Hazardous substances The chemicals industry has largely failed to provide the necessary data to make the EU REACH Regulation (1907/2006) work, claims a new report from the European Environmental Bureau (EEB) and ClientEarth. They also say the European Chemicals Agency (ECHA), which was established to oversee the Regulation, has allowed the sector to do this.

The REACH – registration, evaluation, authorisation and restriction of chemicals – Regulation entered into force on 1 June 2007 and requires manufacturers and importers of chemicals to register them with the ECHA, and provide the agency with data on the substance. Co-author of the report Christian Schaible said: "REACH

is based on two key legal principles: 'no data, no market' and 'one substance, one registration'. However, our research found that both of these are routinely ignored in the registration of substances."

The report accuses the ECHA of accepting incomplete dossiers and of failing to use its powers to ask registrants to properly complete and correct them.

The ECHA refutes the claims, saying that a registration number is only given when a full dossier has been provided. It also points out that the registration phase is not a check of the quality of the information provided or its adequacy. The agency also says it is following up each of the more than 2,000 cases where substances appear to be incorrectly registered.



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Commission investigates Pembroke power station

Compliance Planning permission for the 2GW gas-fired power station, which was recently opened in Pembroke by RWE npower, is to be investigated by the European Commission.

The commission has sent the government an infringement notice outlining its concerns over the decision-making process granting permission for the combined cycle gas turbine power station and its water cooling system.

The plant, one of the largest of its kind in Europe, is described by the company as highly efficient, producing less than half the CO₂ emissions of a similarly sized coal-fired power station and generating enough electricity to power 3.5 million households. However, environmental campaign group Friends of the Earth (FoE) complained that the plant's cooling system wastes energy by dumping heat into the protected Milford Haven estuary.

The commission wants DECC to clarify the impact of the plant on the area and to demonstrate compliance with the directives on environmental impact assessment (2011/92/EU), integrated pollution prevention and control (2008/1/EC) and the conservation of natural



habitats and of wild fauna and flora (92/43/EEC).

"Our particular concern relates to the process applied to the choice of cooling system and the assessment of its likely impacts on the Pembrokeshire marine special area of conservation," states the commission's letter. "In particular, we have concerns about the impacts of impingement and entrainment, of increased temperatures of water discharges and the addition of large quantities of biocides to these waters."

RWE npower has a permit to extract water from the estuary to cool the gas turbines. But the water returning to estuary from the plant is around 8°C warmer and FoE claims the higher temperature could kill millions of fish and other marine species every year.

"We warned from the outset that the power station would cause unacceptable harm to this important marine environment at the same time as wasting colossal amounts of energy," said Gareth Clubb, director of FoE

Cymru. "Time and time again we have pointed out that the UK government acted unlawfully in allowing this technology to be used in Wales, which is considered substandard in the US and England. Now our complaint to the commission means legal action."

DECC notes that the commission has only issued a "notice of infringement" and not "full-blown infringement proceedings", and said it is considering its response. The government has been given two months to reply to the letter.

EIA UPDATE

iema

EIA Directive

The European Commission has launched its proposals to substantively amend the Environmental Impact Assessment (EIA) Directive 2011/92/EU (p.5). Of note is that IEMA member input into the review is acknowledged in the commission's document and that the proposals call for the development of "accredited and technically competent [EIA] experts".

Quality Mark forum

This year's forum was held in Birmingham on 17 October and was attended by more than 70 delegates from scheme registrants and invited guests. Discussions included the new EIA Directive, iterative design, climate change, biodiversity data management and EIA follow-up (p.36).

EIA advice

Northern Ireland has revised its EIA planning advice to align with the

consolidated EIA Regulations that came into force on 13 March 2012. The updated advice was launched in September and is titled *Development control advice note 10* (lexisurl.com/iema13788). Meanwhile, the Scottish government plans to launch a new EIA planning advisory note (PAN) by the end of 2012 to replace the existing PAN48. Lastly, the consultation from the Welsh assembly government on updating its Town and Country Planning EIA Regulations – to make amendments that have already been implemented in the rest of the UK – is expected shortly.

Growth Bill and EIA

The Growth and Infrastructure Bill (lexisurl.com/iema13789), which was laid in parliament at the start of October, could influence the future practice of EIA, particularly around scoping and further information requests. The proposals include limiting the type of information a planning authority can request alongside

an application, and allowing major project applications, which are more likely to require EIA, to go directly to the planning inspectorate for determination within a 12-month time period.

Offshore EIA

RenewableUK will shortly launch guidance on assessing cumulative environmental effects for offshore projects following a presentation of the guide at its October 2012 conference. Meanwhile, DECC's offshore strategic environmental assessment programme has published the two new research studies related to offshore impact assessments:

- *Foraging ranges of northern gannets in relation to proposed offshore wind farms* (lexisurl.com/iema13790).
- *Tracking marine mammals around marine renewable energy devices using active sonar* (lexisurl.com/iema13791).

Prosecutions

Roundup of the latest environmental cases

UK faces massive fines over sewage failures

The Court of Justice of the European Union has ruled that inadequate sewage treatment facilities in London and Sunderland mean the UK is in breach of the Urban Waste Water Treatment Directive (91/271/EEC), and could be subject to heavy fines from the European Commission.

Under the Directive, EU member states had to ensure specified water-quality standards were met in urban areas by 31 December 2000. More than a decade later, however, there remain four plants in the UK that release raw sewage into waterways when overwhelmed by storm waters.

The court rejected the UK's argument that it was complying with the Directive because it was working to improve the sites, stating that member states could not justify non-compliance with the requirements and time limits of a directive by pleading practical, administrative or financial difficulties.

The European judges did not specify a financial penalty to be imposed on the UK government, but in 2010 the commission requested that Belgium be fined €15 million and ordered to pay another €62,000 for each day it remained in breach of the same water-quality legislation.

Responding to the ruling, a Defra spokesperson said: "We are disappointed by the court's findings as we are already working on major improvements to sewage and treatment systems in London."

Alongside updating five sewage treatment works in London, Thames Water is planning to create the Thames Tideway Tunnel – a £4.2 billion "super sewer" – to solve the city's capacity and water-quality issues. Plans for the tunnel have been the subject of public consultation, and a final submission to the planning inspectorate is expected early next year. Following the European court's ruling, however, Labour peer Lord Berkeley called on the government to review the project and investigate whether there are any cheaper alternatives.

Water firms pay out over pollution from blocked sewers

Anglian Water and Thames Water have been forced to pay out more than £40,000 each, after blockages in poorly maintained foul sewers caused sewage to overflow into nearby watercourses.

Magistrates in Chelmsford fined Anglian Water £36,000 and ordered the company to pay £6,000 in costs, after hearing that pollution caused by a blocked sewer near Thaxted in Essex spread for 3km of the River Chelmer and killed more than 400 fish. The Environment Agency said the pollution could have been prevented if Anglian Water had included the sewer in its regular maintenance schedule. The incident in June 2011 occurred just a week after the sewer had been cleared of a similar blockage.

In a separate prosecution, Thames Water was ordered to pay £13,000 in penalties, on top of the £30,000 it had already spent on remediation efforts, after Basingstoke Magistrates' Court heard that the firm's failure to properly investigate the cause of a sewage leak in September 2010, resulted in a more serious discharge six months later.

According to the agency, a blocked foul sewer was to blame on both occasions for sewage overflowing into a Hampshire pond. In March 2011, however, the

water level of the pond was higher than previously, enabling the pollution to flow into the Bishopswood Stream, causing a "dramatic deterioration" in water quality and harming local invertebrate species.

£30k fine for foul smells

Waste processing company Think Environmental was labelled "negligent, if not grossly negligent" and fined £30,000 for failing to prevent smells of rotting waste escaping from a site at Burton Latimer in Northamptonshire.

The Environment Agency issued 10 formal warnings to the company that it had to deal with odours from its site, after receiving 345 complains in a two-year period from September 2009. Despite being repeatedly told the site was in breach of its environmental permit, the firm's director did not accept there was an issue and the odour-control plans submitted by the firm were deemed inadequate by the agency.

An agency investigation revealed that the site had taken on more waste than it should have, as well as the wrong type, and that there were holes in the membranes covering the waste.

Think Environmental was fined an additional £3,000 for failing to meet a separate enforcement notice to clear a nearby field of waste that had been illegally buried there in 2009.

CASE LAW

When SEA is required

It has been an important year for cases on strategic environmental assessment (SEA). In March 2012, the Court of Justice of the European Union delivered a significant judgment on the scope of the SEA Directive (2001/42/EC) in *Inter-Environnement Bruxelles ASBL v Region de Bruxelles-Capitale* (C-567/10).

The Directive requires SEAs for plans and programmes or any modifications to them that are likely to have significant environmental impacts. Plans and programmes are defined in article 2(a). The *Inter-Environnement* case concerned the repeal of a land development plan in Brussels that was provided by national legislation but was not required to be adopted by the competent authority. It was argued that the repeal of the plan was a "modification", and therefore required an SEA.

The court decided that the word "required" in article 2(a) does not exclude from the definition of plans and programmes those that are provided for by legislative provisions, but whose adoption is not compulsory; and, in principle, the total or partial repeal of a plan or programme falls within the scope of the SEA Directive.













This ruling has significant implications for authorities that must consider undertaking a SEA whenever they propose to adopt, amend or revoke any compulsory or non-compulsory plans or programmes.

More recently, in *Walton v Scottish Ministers* [2012] UKSC 44, the Supreme Court dismissed an appeal alleging that a road project in Scotland required a SEA – in addition to an environmental impact assessment (EIA) – because it modified a regional transport strategy. The court noted that the SEA Directive is concerned with the environmental effects of plans and programmes that set the framework for future development consent, whereas the EIA Directive (2011/92/EU) is concerned with the environmental impact of specific projects.

Hayley Tam and Jen Hawkins

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NEW REGULATIONS

| In force | Subject | Details |
|---|--|---|
| 16 August 2012  | Environmental protection | The Offshore Marine Conservation (Natural Habitats, &c) (Amendment) Regulations 2012 amend the 2007 Regulations, introduce new provisions into reg.6, which require competent authorities to preserve, maintain and re-establish areas of habitat for wild birds. lexisurl.com/iema13254 |
| 16 August 2012   | Environmental protection | The Conservation of Habitats and Species (Amendment) Regulations 2012 amend the 2010 Regulations. Although the 2012 Regulations apply mainly to England and Wales, they extend to Scotland and Northern Ireland to some degree. lexisurl.com/iema13255 |
| 16 August 2012  | Environmental protection | The Conservation (Natural Habitats, &c) Amendment (Scotland) Regulations 2012 amend the 1994 Regulations, including imposing new duties on public bodies in relation to wild bird habitats. lexisurl.com/iema13257 |
| 12 September 2012  | Energy | The Home Energy Efficiency Scheme (England) (Amendment) Regulations 2012 amend the 2005 Regulations. Changes include new income-related eligibility criteria and new powers to enable ministers to revise the amount of money available. lexisurl.com/iema13502 |
| 19 September 2012  | Energy | The Electricity and Gas (Smart Meters Licensable Activity) Order 2012 amends the Electricity Act 1989 and the Gas Act 1986 to provide for new licensable activities relating to the provision of communication services with respect to smart meters. lexisurl.com/iema13683 |
| 19 September 2012  | Environmental protection | The Public Bodies (Abolition of Environment Protection Advisory Committees) Order 2012 abolishes the environment protection advisory committees and removes the requirement for the Environment Agency to establish and maintain them. Likewise, the Public Bodies (Abolition of Regional and Local Fisheries Advisory Committees) Order 2012 abolishes the fisheries advisory committees. lexisurl.com/iema13679 ; lexisurl.com/iema13680 |
| 1 October 2012  | Climate change | The Climate Change Agreements (Administration) Regulations 2012 appoint the Environment Agency to administer climate change agreements (CCAs) entered into under Part IV of Schedule 6 to the Finance Act 2000, and set out procedures for the administration of CCAs. lexisurl.com/iema13261 |
| 1 October 2012  | Energy | The Energy Performance of Buildings (Scotland) Amendment Regulations 2012 amend the 2008 Regulations on the production of energy performance certificates when buildings are to be sold or rented out. The 2012 Regulations partly transpose the EU Directive on the energy performance of buildings (2010/31/EU). lexisurl.com/iema12893 |
| 1 October 2012  | Flooding | The Flood and Water Management Act 2010 (Commencement No.8 and Transitional Provisions) Order 2012 brings into force outstanding provisions of the Flood and Water Management Act 2010 and relate to sewerage undertakers whose areas are wholly or mainly in Wales. lexisurl.com/iema13501 |
| 2 October 2012  | Marine environment | The Bathing Waters (Scotland) Amendment Regulations 2012 amend the 2008 Regulations by further transposing elements of the EU Directive (2006/7/EC) on the management of bathing water quality. The Regulations also implement the European Commission decision (2011/321/EU) establishing a symbol for information to the public on the quality of bathing water. lexisurl.com/iema13505 |
| 12 October 2012  | Energy | The Electricity and Gas (Competitive Tenders for Smart Meter Communication Licences) Regulations 2012 set out the process for competitive tenders that will apply to the granting of smart meter communication licences. lexisurl.com/iema13685 |

LATEST CONSULTATIONS


30 November 2012

Waste hierarchy

 The waste hierarchy forms part of the Scottish government's blueprint to achieving its zero-waste agenda, and moving Scotland's economy from a traditional linear model of production, consumption and disposal towards a circular economy, without the need to rely on new raw materials that are becoming increasingly costly both financially and environmentally. The administration is consulting on applying the hierarchy in Scotland.
lexisurl.com/iema13694


6 December 2012

SEA in the South East

 The department for local government has issued a second consultation on the likely significant environmental effects of the revocation of the South East Plan and the regional economic strategy – which together form the regional strategy. A previous report into the effects was consulted on between October 2011 and January 2012.
lexisurl.com/iema13695

22 December 2012


Energy-intensive industries

 DECC and the business department are jointly consulting on the design of schemes to compensate key

electricity-intensive business to help offset the indirect cost of the planned carbon price floor and the EU emissions trading scheme. The consultation follows the government's pledge last autumn that measures would be implemented to reduce the impact of policy on the costs of electricity for the most energy-intensive industries whose international competitiveness is affected by domestic energy and climate change policies. The proposals outlined by DECC are subject to state aid guidelines.
lexisurl.com/iema13693


22 December 2012

River-basin management

  The Environment Agency published river-basin management plans covering all of England and Wales in December 2009. These outlined what would be done to protect and improve the environment. The agency is now seeking the views of stakeholders as part of its work to review and update the plans. The revised plans are due to be published in December 2015.
lexisurl.com/iema13088

28 December 2012


Recycled waste

 The Scottish government has issued a consultation setting out proposed actions to improve the quality of

recyclable materials collected and managed in Scotland. It includes measures to: address contamination at the point of collection; introduce mandatory and transparent material quality sampling; carry out a benchmarking exercise on the quality of source-segregated materials; and introduce a recycle quality grading system in the country.
lexisurl.com/iema13696

31 December 2012

EMAS and ISO 14001

 The European Commission is giving organisations registered under the EU eco-management and audit scheme (EMAS), and the scheme's verifiers, the opportunity to take part in an online survey on how the current revision of ISO 14001 could impact EMAS. The survey is designed to collect information on how revising 14001 could: make sure that certification is a suitable stepping stone towards EMAS registration, particularly for companies with international sites; and affect EMAS's role as the premium environmental management instrument and its ability to sustain this position in the future. The survey results will be fed into the official 14001 revision process and provide valuable input for upcoming EMAS revisions.
lexisurl.com/iema13793

NEW GUIDANCE

Planning permission and permitting

New guidance (lexisurl.com/iema13700) for developments requiring planning permission and an environmental permit has been published by the Environment Agency. The guidance aims to help developers understand the role of the agency in the planning and permitting processes and how it will advise on developments.

Capital allowances for water equipment

Defra has published two new lists of enhanced capital allowances (ECAs) for measures to improve water efficiency in non-domestic buildings following its annual review. The ECA scheme for water offers a 100% first-year allowance for investments in certain water-efficient plant and machinery, and includes a variety of technologies, such as water-efficient taps, toilets, monitoring equipment and industrial cleaning equipment. The new lists are: the ECA scheme for water-efficient technologies product list (lexisurl.com/iema13701); and the ECA scheme for water's technology criteria list (lexisurl.com/iema13702).

Green deal

A series of guides to the green deal have been published by DECC. They are: the introduction to the green deal (lexisurl.com/iema13703); green deal for residential landlords (lexisurl.com/iema13704); green deal for social housing tenants (lexisurl.com/iema13705); green deal for social housing providers (lexisurl.com/iema13706); the green deal assessment – what to expect (lexisurl.com/iema13707); what to do after the assessment (lexisurl.com/iema13708); moving into a home with a green deal (lexisurl.com/iema13709); energy company obligation (lexisurl.com/iema13710); consumer protection (lexisurl.com/iema13711); and the green deal for businesses (lexisurl.com/iema13712).

EVENTS CALENDAR

| Date | Event | Location and details |
|--------------------|--|--|
| 22 November 2012 | Carbon and environmental footprinting conference | One Drummond Gate, Victoria, London lexisurl.com/iema13792 |
| 5 December 2012 | Sustainability leaders forum 2012 | CBI conference centre, London lexisurl.com/iema13510 |
| 13 December 2012 | Water and innovation: learning from innovators | School of Oriental and African Studies, London lexisurl.com/iema13713 |
| 23–24 January 2013 | Coastal futures 2013 | School of Oriental and African Studies, London lexisurl.com/iema13714 |
| 5 February 2013 | Smarter sustainability reporting | 76 Portland Place, London lexisurl.com/iema13717 |
| 12 February 2013 | Water industry asset management 2013 | Holiday Inn, Birmingham City Centre lexisurl.com/iema13718 |
| 13 February 2013 | Cleantech innovate | Institution of Mechanical Engineers, London lexisurl.com/iema13715 |
| 5–7 March 2013 | Ecobuild 2013 | ExCel, London lexisurl.com/iema13719 |
| 6–7 March 2013 | World water-tech | Grange City Hotel, London lexisurl.com/iema13716 |

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Nissan's decision to manufacture its all-electric car, the Leaf, at its existing Sunderland site and to open a £200 million car battery plant in the North East demonstrates how the region is helping to drive the UK's transition to a low-carbon economy.

But the North East, which stretches from the Tees Valley in the south to the border town of Berwick-upon-Tweed in the north, is more than just the UK's first economic area for ultra low-carbon vehicles. It is also the location of the country's largest trial of smart grid solutions, home to almost 174MW of installed onshore wind capacity and the site of one the country's first projects to harness geothermal heat.

The region is also a hub for the development of green skills and knowledge. The national renewable energy centre and the skills academy for sustainable manufacturing and innovation are among some of the low-carbon centres of excellence in the North East.

Green-collar jobs

The North East is home to 2.5 million people and its economy is worth about £40 billion a year, more than 3% of the UK's total economic output. According to data from the business department (BIS), 2,033 companies in the region were classified as being in the low-carbon and environmental goods and services (LCEGS) sector in 2010/11. Overall, these firms employed nearly 40,000 workers.

Three main LCEGS industries have emerged in the North East: alternatively-fuelled vehicles (430 companies), alternative fuels (380) and building technologies (295). BIS figures also reveal that the value of LCEGS sales by companies in the region was £4.8 billion in 2010/11, a 4.5% increase on 2009/10. This compares with average annual growth across the region of 3.6% in the "boom" years between 1993 and 2008.

The North East is, however, ranked only 11 out of the 12 regions covered by the LCEGS data by sales, and by company and employment numbers.

Nonetheless, the region is positioning itself to take advantage of the projected sales growth in the LCEGS sector, which BIS forecasts will be 5.5% in 2014/15.

"The transition to a low-carbon economy is creating a real buzz of opportunity in the North East, which has been badly hit by this and previous recessions," says Marek Bidwell, at Newcastle-based environmental training firm and consultancy Bidwell Management Systems. Mark Stephenson, a member of the policy team at the North East Chamber of Commerce (NECC), agrees: "The green economy offers the North East enormous potential."

In 2010, the NECC forecast that the development of low-carbon industries would add around £3 billion to the North East economy over the next few years. Stephenson says that much of the expansion will build on the region's traditional skills base, such as engineering and fabrication. The NECC also expects

North East flies higher

Paul Suff reports on the organisations in the North East of England that are helping to shape the UK's future low-carbon economy

40,000 jobs in the area to be created by 2014 through sustainable energy projects.

In 2009 a report from Arup and Cambridge Econometrics identified some of the potential economic opportunities, notably in offshore wind and biofuels production. "The region's expertise in offshore and subsea engineering means that North East companies should be in a strong position to work on the next generation of UK offshore wind farms," it concluded.

The report also highlighted the area's key assets in manufacturing, science, research and development, technology and attitudes to innovation, and said these would put the region in a good position help deliver the UK's low-carbon economy.

Fuelling the economy

The North East has a rich history of coal mining, with the region supplying one-quarter of the UK's coal in 1913 and fuelling local industries such as steel and heavy engineering. The demise of "King Coal" has not eradicated the area's contribution to the UK's energy supply, however. The region is now a hub for a myriad of non-fossil-based fuels and energy supply.

Aside from the 24 onshore wind farms across the North East that RenewableUK reports were operational in September 2012, the region is also home to the first near-shore wind project in UK waters, at Blyth harbour, 50km north of Newcastle, which has been generating electricity since 2001.

Furthermore, several offshore wind projects are now in the pipeline. EDF Energy Renewables is constructing an offshore wind farm between the mouth of the River Tees and Redcar. It is located 1.5km from the shore at its closest point and will feature 27 2.3MW turbines, producing more than 60MW of electricity. Also, Dogger Bank, the largest of the nine offshore wind farm zones in the third round of the Crown Estates' leasing programme, lies approximately 96km offshore and has a capacity target of 9GW, with the potential for 13GW. A 9GW development would reduce UK CO₂ emissions by 13.7 million tonnes a year.

Other forms of renewable energy can also be found in the North East. Industrial gases and equipment supplier Air Products is building the world's largest renewable energy plant using advanced gasification energy-from-waste (EfW) technology on Teesside. With a capacity of 50MW, the plant, which is due

to enter commercial operation in 2014, will divert 350,000 tonnes of waste from landfill. It also has the potential to generate a renewable source of hydrogen for commercial use, such as to fuel buses, and is working with partners to demonstrate fuel cell technology at the Tees Valley plant.

Also on Teesside, the Sembcorp biomass power station, commonly known as Wilton 10, came online in 2007 and was the UK's first large-scale wood-to-energy power facility. The £64 million plant produces 35MW of electricity a year from around 300,000 tonnes of wood from sustainable UK sources – typically, low-value wood from local authority waste disposal sites, sawmill residues and a fast-growing form of willow. The plant saves more than 200,000 tonnes of CO₂ each year.

More unusual examples of sustainable energy can also be found in the region. Newcastle University has been instrumental in investigating how best to exploit the area's geothermal energy sources.

The university was part of a public-private partnership that, between 2004 and 2006, provided evidence of the first deep geothermal resource found in the UK for more than 25 years on the site of a former Lafarge Cement works at Weardale in County Durham.

David Manning, professor of soil science at the university, explains: "A 1km borehole was drilled and at 411m we encountered the highest permeability ever found in granite in the UK. The project demonstrated that there was sufficient hot brine resource to provide

a considerable amount of thermal energy." In 2010, DECC funded a second borehole to act as a potential reinjection well.

The university team has since investigated a second potential geothermal energy site, in Newcastle. The 1.8km borehole was completed in July 2011 at the site of the proposed Science Central development, on the grounds of a former brewery.

Manning says a temperature of 76°C was recorded at the bottom of the borehole, which is significantly higher than 60°C normally found at such depths. "The findings were a complete surprise, but supported the hypothesis that came out of Weardale: that the geological fault that runs through most of Newcastle and an area south of the city [the so-called Ninety Fathom-Stublick Fault Zone] hosts hot groundwater."

Before a decision can be made on whether to incorporate geothermal energy from the site into the



Nissan's Sunderland plant will start manufacturing the Leaf EV in 2013

overall energy plan for Science Central, the site is being stabilised. "The signs are very encouraging though," says Manning.

There are also plans to build on Teesside Europe's first large-scale tyre pyrolysis plant, which will reclaim valuable materials from waste tyres. Although not primarily an EfW facility, PYReco, the company behind the plant, says the oil and gas recovered will power the operation.

To exploit the area's remaining coal reserves, several North East companies, including Five Quarter and Clean Coal, are working on commercial-scale underground coal gasification (UCG) schemes.

UCG was first trialled in the North East in 1912 and Newcastle-based Five Quarter has been granted a licence by UK Coal to exploit a 400km² area of the North Sea with an estimated 2 billion tonnes of coal deposits. It hopes to recover syngas – a combination of hydrogen, carbon monoxide, carbon dioxide and methane – for use in power generation or conversion into liquid fuels.

The region is also rapidly establishing itself as a major hub for the production of transport biofuels. Ensus' £300 million plant at Wilton, for example, is Europe's largest cereal grain biorefinery. Bioethanol is produced from locally grown wheat with high starch content and the Teesside plant is expected to meet up to one-third of the UK's demand under the Renewable Transport Fuels Obligation.

Future transport

The committee on climate change suggests that 1.7 million electric cars and plug-in hybrids need to be on UK roads by 2020 – that is 16% of all new cars and vans sold by the end of the decade. Many of the vehicles will be manufactured in the North East or contain parts produced in the region.

Around 250 companies and 20,000 employees are directly involved in automotive manufacturing in the area, and some of these are pioneering the shift to electric vehicles (EVs). Nissan – which will begin manufacturing the Leaf EV at its Sunderland plant in

2013 and has already started production of lithium-ion batteries at a new 25,000m² facility at the site – is one such example.

Cramlington-based Avid Vehicles and Smiths Electric Vehicles, in Washington, are two more. Avid manufactures specialist EVs, while Smiths produces two models of commercial electric vehicles as alternatives to traditional diesel trucks. Its UK customers include: Balfour Beatty, Essex County Council, the John Lewis Partnership, BT Openreach and Sainsbury's.

The North East is also helping to provide the infrastructure to power EVs, and the region will be the first in the UK with comprehensive battery-charging facilities. Earlier this year, EV charging station company DBT, together with Nissan and Gateshead College, agreed to develop a zero-emission centre of excellence in the North East. The centre will act as a business incubator for the EV industry, creating jobs in the region and developing knowledge and technology.

Research and development will focus initially on charging infrastructure and battery second life. This will involve DBT setting up a production facility at the centre to produce up to 1,000 charging units a year for the European market.

The US company's development manager, Alexandre Borgoltz, comments: "This is a great opportunity for DBT to increase its production capacity and will mean the North East will provide the complete value chain for the EV industry: battery, vehicle and charging stations."

The support network

Renewable energy generation and EV manufacture are underpinned by the region's supply chain and its knowledge-sharing support services.

The North East is home to several organisations providing goods and services to the onshore and offshore wind industries, and more suppliers are expected to locate there over the next few years as the offshore wind sector expands.

Tyneside and Teesside, for example, are two of the five CORE areas – centres for offshore renewable engineering – identified by the government for the location of manufacturing for the industry, and both will receive a portion of the £60 million set aside to develop port sites.

Energi Coast is the representative group for the region's offshore renewables sector. Several of its members were the first to join norstec, a joint industry and government initiative launched in October by energy secretary Ed Davey to maximise the renewable energy potential of the North Sea. Such firms include TAG Energy Solutions, which operates a factory in Billingham producing foundations for offshore wind turbines, and JDR Cable Systems, which is in Hartlepool and supplies the subsea cables for the first phase of the London Array wind farm, the world's largest offshore array with planning consent.

The national renewable energy centre in Blyth also, of course, supports the region's renewables sector. Its turbine blade-testing facility, which opened in August, is the largest in the world and has been designed to analyse longer blades (up to 100m long) for offshore

£4.8 billion

value of
LCEGS sales
by North
East firms in
2010/11

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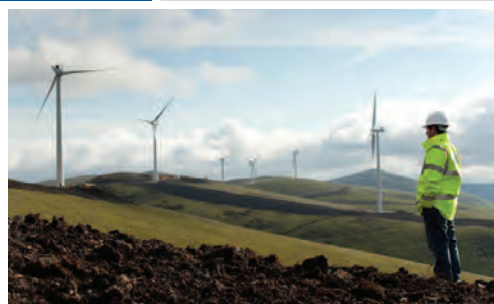
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THE NORTH EAST'S SMART GRID

A £54 million project to test the impact of new low-carbon technologies, such as electric vehicles (EVs) and photovoltaic (PV) solar panels, on the electricity grid is centred in the North East. The three-year initiative, which is the UK's biggest smart-grid project, involves distribution business Northern Powergrid, energy company British Gas, Durham University and power engineering firm EA Technology, as well as 14,000 households and businesses in cities including Durham and Newcastle.

As well as exploring the impact on electricity demand from customers installing renewable technologies and charging electric vehicles, the project will explore the use of new technology throughout the electricity network and look at commercial solutions, such as different pricing structures.

"It aims to see how well the existing distribution network is capable of meeting the demand challenges from low-carbon technologies and what will need to change when more people are charging EVs or connecting PVs," says Jon Bird, head of sustainability at Northern Powergrid. "The system can deal with the odd house connecting a heat pump, but we need to test how the cables cope when each house on a housing estate installs a 3kW pump or when solar energy is fed back to the grid on a large scale.

"Cables tend to get narrower at the connection point to a building and the answer to more demand for electricity has traditionally been to put bigger copper cables in the ground. But that is expensive. We need to find smarter ways of managing demand and the project aims to identify how best to do that," explains Bird.

A range of technology is being installed as part of the project. These include the roll-out of smart meters by British Gas, the installation of PV panels, ground-source and air-source heat pumps, as well as trials of EVs. "It's a great opportunity to better understand customer behaviour and electricity consumption patterns," says Bird.

turbines. It also provides expertise in photovoltaics and marine energy.

The region's academic community is lending its expertise too. Durham University (along with Strathclyde University) leads the SUPERGEN wind energy technology research programme in the UK, which examines wind turbine technology, aerodynamics, hydrodynamics, materials, electrical machinery and control, and reliability and condition monitoring.

The North East is similarly leading the way on training people in the skills needed by the renewables sector. Siemens, for example, has established a wind-energy training school in Newcastle, and all its wind-power technicians will pass through the centre before being deployed on UK wind farms.

Meanwhile, the region's EV supply chain includes Gateshead-based Sevcon, which manufactures battery chargers, converters and display accessories for electric vehicles. Japanese-owned Nifco UK, which is based in Stockton-on-Tees, is another supplier of EV components. It will supply fully recyclable-plastic injection-moulded components for battery packs on the Nissan Leaf.

In September 2010, the region launched one of the largest trials of EVs in the UK. Switch EV is a Technology Strategy Board project that will trial 44 EVs across the North East over three years to discover whether they are fit for purpose, assess battery performance and examine the public's perceptions of electric vehicles.

Knowledge-generating organisations supporting



The UK's first near-shore wind project at Blyth harbour

the region's ambition to become the world leader in EV research and development (R&D) include the skills academy for sustainable manufacturing and innovation (SASMI). Based at Gateshead College, SASMI is the UK's first education centre dedicated to clean vehicles.

And Newcastle University's institute for research on sustainability is home to Europe's leading transport technology research centre, which is leading the study of sustainable rail, road and marine transport.

Other R&D facilities in the region include the national anaerobic digestion (AD) development centre in Redcar. The facility is part of the centre for process innovation and is an open-access site designed to help organisations of all sizes to develop AD processes quickly, sustainably and cost effectively.

A greener economy

For a region hit badly by the current and previous economic downturns, the transition to a low-carbon economy provides a chance to reinvent itself and build on its traditional engineering base.

Establishing the industries needed to support the revolution in offshore wind energy and the rollout of EVs is particularly key for the North East.

It is already home to a major automotive manufacturing plant as well as its supply chain, and boasts a growing number of companies and facilities to support the renewable energy sector, including wind, EfW and biofuels.

The decision last year by US company Clipper Windpower to scrap its plans to build a turbine manufacturing plant in the region is a reminder that reinvention will not always be a smooth process. Nonetheless, there is much going on across County Durham, Northumberland, the Tees Valley, and Tyne and Wear to suggest that the region that pioneered rail travel is also on the right track to help develop a new, greener economy.

40
thousand
workers are
employed in
the region's
LCEGS
sector

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Are biofuels causing

Mark Lynas and Gloria Gaupmann debate

Energy policy is a complicated issue, and there is no room for simplistic generalisations. All forms of generation have costs and benefits whose inherent trade-offs need to be properly considered. The advantage of liquid biofuel is that it can substitute for the oil-derived fossil fuels currently used in almost all forms of transport.

However, biofuels have a fundamental constraint in that they compete for scarce land and water with food crops. In some cases this competition leads to serious problems. With something like 40% of the corn grown in the US going into ethanol production for cars, there can be little doubt that this ill-conceived government-mandated policy is driving up world food prices, especially in a relatively poor harvest year such as this one. The impact will be directly felt by the world's poor. In its last report in October, the UN's Food and Agriculture Organisation (FAO) estimated that 870 million people around the world are suffering from chronic undernourishment.

There is undoubtedly a link between biofuels and food supply, although admittedly a complex one, not least because most of the non-ethanol US corn crop goes to animal feeds, not directly into human foodstuffs.

The limits that land availability places on biofuels are severely constraining, and probably mean that biofuels can only ever be a niche source of decarbonised fuels. To give just one example, the energy expert Chris Goodall has calculated that funnelling the UK's entire cereal and oilseed crop into liquid biofuels production would replace just 60% of the country's aviation kerosene demand – to say nothing of cars, trucks and shipping (lexisurl.com/iema13665).

In essence, biofuels represent solar energy captured in plants, an inherently inefficient process – in land-use terms, if not in terms of carbon emissions. Fossil fuels are superior because they come from underground and represent solar energy stored millions of years ago, not subtracted from current biological production. Even in straightforward greenhouse-gas terms, there are serious questions about the climate benefits of biofuels. There can be little doubt that liquid biofuels produced from palm oil grown on deforested Malaysian soils are worse for the climate than the fossil fuels they replace.

Furthermore, indirect land-use change may result from the increased pressure on food crops, meaning that land is ploughed up in one place to replace lost production elsewhere. This is very difficult to quantify, but it undoubtedly happens.

We live in an interconnected world, where actions in one place will have unintended consequences in another. Biofuels production inherently conflicts with food production and nature conservation – this trade-off can be minimised and managed, but it can't be eliminated.



Mark Lynas

Author of two major books on climate change



more harm than good?

the environmental impacts of using biofuels

Creating fuels from crops can understandably cause some concern with regards competition for food stocks. However, EU producers must adhere to stringent environmental regulation and there are certification schemes ensuring that fuels produced are sustainable.

Far from taking swathes of land away from agricultural food production, Europe's growing ethanol industry is, in the main, using land that is no longer used for food production.

In recent decades, the European agricultural sector has experienced a steady and significant reduction in the amount of arable land it uses. That process is continuing and, according to both the FAO and the European Commission, by 2020 the EU will be using 5.5 million hectares less of arable land than in 2010. The main effect EU biofuel consumption has had on this process has been the reuse of recently abandoned agricultural land. It has also reduced the rate of land abandonment across the continent.

The recent Common Agricultural Policy proposal to exclude 7% of agricultural land from production will result in 3.7 million hectares of land no longer used for growing food crops. This represents 20 million tonnes of cereals, equal to the total amount exported by the EU this year.

The proposal underlines that food producers and biofuel makers are not competing for the same land. There is enough for both.

In 2012, the EU will use 3 million tonnes of corn and 4.6 million tonnes of wheat in ethanol production – just 2.5% of total European grain production. Moreover, the production of ethanol also generates a valuable co-product that is used in animal feed, enabling EU farmers to source it locally, rather than importing it from countries where there are little or no sustainability criteria in place.

Bioethanol production uses only the starch elements of the grain, whereas the proteins are passed on to the feed and food sectors. Every 1,000kg grain used to create ethanol produces 294kg of ethanol, 330kg of high-protein animal feed, 276kg of carbon dioxide – an important feedstock for the food sector (for example, in the production of fizzy drinks) and 100 litres of water.

This means that about one-third of the grain set aside for ethanol production enters the food production supply chain.

Currently, Europe imports a total of 40 million tonnes of soymeal from South America for its animal feed sector. European biofuels production can replace 13 million tonnes of these imports with locally and sustainably-produced animal feed, preventing potential land-grabbing or deforestation in South America where environmental protection rules are less strict.



Gloria Gaupmann

Director for environmental affairs at ePURE, the European Renewable Ethanol Association



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The symbiotic network

Despite the removal of government funding, the future of the National Industrial Symbiosis Programme remains bright. **Peter Brown** reports

The National Industrial Symbiosis Programme (NISP) has been proving that one company's waste is another's valuable resource since 2005, as the concept of industrial symbiosis (IS) has increasingly come to the attention of policymakers and business leaders.

The principles are straightforward. Instead of being destroyed or sent to landfill, the waste streams from one industry are diverted as resources to another. It's a simple, environmentally sustainable way for businesses to cut waste disposal costs and generate revenue.

Pole position

The European Commission's 2011 roadmap to a resource efficient Europe calls for a more widespread implementation of IS as a necessary step on the path to sustainable economic growth. The UK has a headstart here as NISP is the world's first national IS network.

Since it started, NISP has put into action thousands of waste synergies between its 15,000 member businesses, resulting in the reuse of over 38 million tonnes of materials previously thought of as waste. More than 71 million tonnes of industrial water have also been saved, and the impact on businesses has been significant as well. Deals done as a result of NISP's work have saved UK firms at least £1 billion and generated £993 million in sales. Additionally, thousands of jobs have been created as companies find new ways to work with each other in IS partnerships.

Given these positive results, it may seem surprising that the UK government has withdrawn funding for NISP, forcing the programme to move to a subscription-based model from September 2012. It remains to be seen what impact this will have on the programme's capabilities, but chief executive Peter Laybourn is keen to emphasise the potential upside of the change. "Although we were grateful for government investment,

it came with various caveats," he explains. "They started saying which industries we could work with, and which materials, which is almost the opposite of what IS is trying to do. We try to have an open-house policy, giving support to companies of all sizes and all materials."

According to Laybourn, central to NISP's effectiveness is its network effect, the way it enables businesses to share success stories and best practice. "I think that's a real attraction," he says, "because one of the basic principles of IS is bringing diverse organisations together. What is new technology to one company might be old hat to another. Getting that cross-sector fertilisation is one of the key points of the programme, always has been and always will be."

Building partnerships

That fertilisation took on a literal form in an example of IS from northeast England, whereby NISP brought together international nitrogen producer Terra Nitrogen and a small-scale vegetable grower. Terra Nitrogen generates more than 12,500 tonnes of carbon dioxide every year as a result of its ammonia manufacturing process. NISP practitioners spotted a synergy with local farming business John Baarda, which wanted to experiment with growing tomatoes during the winter.

The NISP solution involves the redeployment of waste streams from Terra Nitrogen as power sources for John Baarda's greenhouse complex, where 300,000 tomato plants are cultivated for Sainsbury's.

The carbon dioxide, a useful ingredient for plant growth, is pumped in and boosts tomato production by up to 50%, while other waste is converted to hot water and used to heat the 38-acre complex. Not only does this mean the reuse of two waste streams, which would otherwise be discharged as emissions, but the scheme has also created 80 jobs.

The marriage of sustainability with profitability is again evident in a NISP-initiated synergy for printing solutions and manufacturing company Ricoh.

Ricoh generates about eight tonnes of toner waste every month and, until NISP found an alternative solution, spent £800 disposing of each tonne. The waste stream needed to be dealt with under Ricoh's zero-waste-to-landfill policy, which, as environment officer Andy Whyte explains, was proving difficult. "We couldn't find a sustainable option," he says. "We did

the company £30,000 a year to dispose of. NISP practitioners identified Mil-Ver Metals, an aluminium producer in Coventry, as a potential solution provider. As a result of the deal, Mil-Ver Metals now uses its rotary furnace melting technology to reprocess DENSO's waste stream into aluminium ingots, which are used in the manufacture of alloy wheels.

The solution diverts hazardous waste from landfill and saves DENSO a large amount of money as well as generating significant new business for Mil-Ver Metals.

NISP is there to handle the not-so-easy waste streams. The difficult solvents and hazardous materials, that's where the programme comes in

our own investigations, we looked at working with start-ups to help them develop a process, and nothing was really sustainable until we got in touch with NISP, and they basically halved the cost for us."

The solution proposed by NISP practitioners involved transporting Ricoh's toner waste to a plant in Rotterdam where it is used in a pyrolysis chemical process, the waste products of which are used in concrete production. The solution provider that NISP found to manage the process is a logistics company based just a few miles from Ricoh's UK factory. Even though the two businesses were almost neighbours, it took a NISP practitioner to bring them together.

For Whyte, it's that broad perspective, combined with a solid grounding in industrial practicalities, that is the key to the value of NISP's work. "It's the NISP practitioners' knowledge base, the way they can understand how the relevant processes work and then align that with a solution provider – not necessarily in the UK," he says.

Whyte at Ricoh believes that IS has the potential to transform the ways firms think about waste. "You can use the approach and once you've learned it, there are a lot of solutions you can find for yourself," he argues. "For me, NISP is there to handle the not-so-easy waste streams. The ones you generate the most – your packaging, your cardboard – they're quite easy, but when you come to difficult solvents and hazardous waste materials, that's where NISP comes in."

Likewise DENSO, a Telford-based manufacturer of air conditioning units and engine cooling systems. It generates 15 tonnes annually of potassium aluminium fluoride, a hazardous waste product that was costing

Extending networks

Not all IS projects require such creative thinking. In some cases the synergy is obvious, but needs NISP's network effect to reach its full potential.

The Land Network recycles biodegradable waste for agricultural purposes such as improving soils, reducing crop disease and as animal bedding. NISP has been instrumental in extending the Land Network's reach to a whole swathe of new customers, says director Emma Cheetham. "For us, I always say they're another sales arm. They're out on the road going into sites and as a reasonably small company we couldn't possibly do as much as they are doing."

As a result, hundreds of thousands of tonnes of green waste have been diverted to the Land Network's composting and recycling plants. Industrial waste streams added to the Land Network's repertoire thanks to NISP include sawdust, coconut husks and salt.

Cheetham particularly values the networking possibility represented by NISP, which sees information, contacts and best practice being shared between the member organisations. "What I've found really useful about NISP is that, if I've gone to a site to look at the organic waste, often I get asked: 'Can you do anything about this plastic?' And although we can't, I know I've got contacts that I can give them, or I'll get on the phone to NISP and they'll find the solution," she explains.

Laybourn also emphasises this advantage of NISP's network effect. "If your local NISP practitioner is not expert in your industry, they will put you in touch with someone who is," he says. "Usually, within a few phone calls or emails, you're talking to the right person."

Waste hierarchy

As well as presenting opportunities for businesses, NISP's approach aligns neatly with the goals of the UK government's waste hierarchy policy, which encourages businesses to reuse rather than recycle waste streams wherever possible. One way NISP practitioners

£1 billion

has been saved by UK firms through synergies found by NISP

encourage this behaviour is by recommending that programme participants send redundant IT equipment for reuse.

Blackmore Computers, an IT recycler specialising in data wiping, receives about 100 tonnes of waste a year from businesses working with NISP. Once the stored data have been destroyed, Blackmore recovers residual value from parts, which are stripped out, reused and put back on the market. The revenue generated by these sales means that Blackmore is generally able to offer its service free to companies that would otherwise be paying to have their IT waste recycled.

Again, the environmental benefits of the project complement business ones, acknowledges Blackmore's owner Simon Barfoot. "Reuse is much better than recycling, because we are using humans to do the process. It's therefore very low-carbon: we don't have huge machinery smashing things up," he explains. Moreover, every tonne of IT waste that Blackmore reuses via NISP is a tonne diverted from further down the waste hierarchy, either from landfill or from recycling.

Barfoot points to the example of a tier one university that was spending thousands of pounds recycling its IT equipment before NISP introduced them to Blackmore. "It gets no bills from us and it gets back about £20,000 a year which it uses for community engagement projects around the university," he says. "Also, the distance the goods are travelling is now less than 60 miles where it used to be more than 250, and the equipment is reused instead of being smashed up. So the university wins on all fronts: carbon reduction, budget, data safety and doing the right thing environmentally."

Laybourn says such examples show that IS is a rare "win, win, win" situation for businesses, the government and the environment, and hopes that the business community will continue to embrace it.

Going forward

And what of the future for IS and NISP? "There's a definite sense that [IS's] time is now," says Laybourn, "because it can be done right now. It doesn't involve international agreements, so

no one has to hang around waiting for someone to sign a protocol. It's supported by non-governmental organisations, businesses and governments, so there's no reason why we shouldn't do lots more of it really, and quicker."

Industrial symbiosis is sustainability and that in turn is business continuity, so if your firm is not doing it, you're not going to be in business

One innovative potential application for IS is in regional economic development. Birmingham City Council recently worked with NISP to apply the principles of industrial symbiosis to the regeneration of the Tyseley area of the city.

The project took a long-term view of economic regeneration, with an emphasis on encouraging inward investment from businesses that were a good match with existing local industry. "The difference between this and other development strategies is that this is holistic, looking for what is sustainable rather than what is convenient," says Laybourn.

Based on the success of the Tyseley experiment, NISP intends to promote the value of IS to urban planners and economic strategists.

Laybourn is also optimistic about the potential for greater adoption of the approach overseas, pointing out that NISP is already working with regional IS networks in 14 other countries. He expects to see a pan-European IS network in the next few decades, as the EU deals with the challenges of sustainable resource management.

For Ricoh's Whyte, IS has to be a key element in industry's response to the issue of resource security. "There's a growing awareness among manufacturers concerning the future availability of raw materials," he says, "and this is where NISP comes in, because we're more and more aware that we need to recognise our waste as potential raw materials, either for us or for someone else."

Whyte goes further, and says that companies that fail to capitalise on the opportunities offered by IS will fall behind. "It's basically sustainability," he argues. "Industrial symbiosis is sustainability and that in turn is business continuity, so if you're not doing it, you're not going to be in business."

Peter Brown is a freelance journalist.

Standard practice

the environmentalist follows two organisations as they overcome the challenges of ISO 14001 certification

Glenmorangie – 14001 distilled

Glenmorangie has been making whisky at its Scottish distilleries for more than 160 years. To create its range of single Highland malts the company ferments a mash of local barley and mineral-rich water, before distilling and maturing it in oak casks. In some cases the whisky matures for more than 10 years before it is bottled.

The whisky creation process is energy-intensive, requiring the operation of large machinery and the repeated application of heat to separate the alcohol from the water. Whisky production also requires large amounts of water.

The company's commitment to sustainability flows from its tradition of using local resources and employing people from the immediate vicinity, but has now taken on a more focused and formalised approach with certification to the environment management system (EMS) standard ISO 14001.

Although Glenmorangie is not a big organisation, with just 200 employees, implementing and certifying an EMS in just nine months is quite an achievement.

The impetus for 14001

Several factors influenced the distillery's decision to gain 14001 certification. The first was recognition that the introduction of an EMS would embed the company's environment goals and processes more firmly in the business. As compliance manager John McMullen comments: "The company has always 'done the right thing' and avoided pollution and complied with legislation, but meeting minimum legal standards is not enough – we want to make sure that we are continually looking for ways to reduce our environmental impact further and the structure imposed by the management standard helps us to do that."

Wider changes in the company and the Scottish whisky industry also played their part in prompting the company's decision to opt for certification. In 2005 Glenmorangie was



acquired by France-based LVMH group and, from the beginning, the luxury brand parent took a keen interest in the whisky firm's sustainability activities. "It has been a requirement in France for some time that businesses include data on their environment performance as part of their annual accounts, so it follows that the environment is high up any French company's list of priorities," explains McMullen.

There were also industry-led developments. From late 2008, the Scottish Whisky Association (SWA) spearheaded a focus on the environment across the industry, encouraging whisky companies to develop a set of key environmental performance indicators. By 2010, the SWA, comprising the major Scottish producers, had introduced an environment strategy, agreeing targets to improve of the whole industry.

Combined with Glenmorangie's own commitment to enhancing its performance, these developments were a strong influence on the company's future sustainability agenda. The final driver for seeking certification was a far-reaching internal change to Glenmorangie's business model. In 2008, the company downsized and sold one of its sites, releasing capital to construct a new, purpose-built plant in Livingston. "Having the investment to design and build a more sustainable site from scratch was a huge opportunity to reduce the company's impact on the environment," says McMullen.

Towards certification

Implementing 14001 across the firm's three sites in such a short timescale was an intensive process. McMullen emphasises that it is essential to have a clear project plan in place and devote enough time to the planning stage. "Plan, plan, plan," he advises. "Develop the project plan with clear milestones and goals and be rigid in sticking to your short- and medium-term targets."

It was also important to have the right people in place to deliver the project. "We had the full backing of the senior management team, which was critical, but we also created an environmental engineering role to lead the project," says McMullen.

The employee who took on the lead role came from the operational side of the business and was in an excellent position to help integrate new environment procedures with day-to-day working practices. "The individual also had the drive and enthusiasm to manage the project through to fruition and, having worked in an operational role previously, was always making the links between efficiency and good environment practice," adds McMullen.

Glenmorangie used Q-Pulse, a web-based information management system, to help it manage the data, reports, documents and spreadsheets necessary to demonstrate compliance with 14001. McMullen says that having an online system that acted as the central hub for all compliance data and other material helped to

avoid duplication of time and effort.

To implement changes to working practices on the shopfloor and to promote involvement on the part of employees, the project leader set up a number of working groups at each of the main sites. The aim was to involve people at every level of the business, encouraging them to map out their day-to-day activities so that any gaps in environmental practice could be identified and improvements or additional controls put in place.

"We wanted to encourage ownership across the board, as it would be the whole workforce that would ultimately be responsible for implementing any changes we made," says McMullen. In this respect, Glenmorangie's size was considered an advantage, enabling it to manage communication more effectively and respond to change more quickly than a larger firm.

The environment team found that the most convincing arguments were those that made the link between improved environmental performance and efficiency. For example, when employees understood that activities, such as better waste management, not only reduced the company's environmental impact but also generated financial savings, they bought in to the EMS more readily.

"It's important to think out the training sessions carefully beforehand," advises McMullen. "They should be targeted and aimed at improving people's knowledge base, but the content should be pitched according to the audience. The reasons for any changes should be explained up-front, or else it is easy to come unstuck and spend a lot of time going backwards and forwards further down the line when people did not understand or were unconvinced the first time round."

The training sessions at Glenmorangie involved all staff and took place on a regular basis throughout the certification process. McMullen says the sessions have raised awareness about environment issues across the workforce, with employees now realising the value of their own contribution to good practice. "We have a very good level of engagement now," says McMullen. "We have also incorporated sustainability issues into all site inductions, and contractors as well as employees are made aware of our environmental priorities."

Working in partnership

Glenmorangie chose to work with certification body NQA to certify its system. It had just achieved certification to ISO 9001, the quality management standard, with NQA, so a relationship had already been established. Nonetheless, NQA underwent a competitive tendering process.

Glenmorangie commissioned NQA to undertake a gap analysis around three months before the final certification audit. Although not compulsory, McMullen feels that it was worth the investment, offering the opportunity to put right any outstanding issues before the final audit. Although the analysis did not identify

useful in highlighting a few areas where the company could have been a bit more effective. “We already had a number of systems in place,” says McMullen, “but the gap analysis allowed us to take a step back, re-evaluate every part of the business and plan a strategy for improvement.”

Making changes

Although Glenmorangie already had in place a raft of sustainability procedures and fully complied with the regulatory framework before certification, achieving 14001 has resulted in several significant environmental enhancements.

“We already followed good practice and had a robust approach to managing waste, energy and water,” says McMullen. “Areas where we perhaps had less evidence of good environmental practice included environmental risk assessment – but the experience of implementing an EMS has resulted in more process-type changes as opposed to big operational ones.”

The certification process has encouraged the company to examine in detail its daily working practices to search for every possible improvement, big and small. For example, historically Glenmorangie’s Broxburn bottling plant had used a water-intensive process to wash the machinery used for one type of whisky before the same machinery was used for handling a different blend. The company has now introduced an innovative “whirlwind” compressed air system at its Livingston bottling plant which creates a vortex of pressure in the pipes to expel excess water. This has not only drastically reduced the amount of water used but also recovers more whisky, improving overall efficiency at this point of production.

Another example of how Glenmorangie now strives to go beyond compliance is its treatment of effluent. Although there is no legal requirement to treat the wastewater produced during the manufacturing process, and common practice has been to discharge it straight into the sea, the company is now researching different ways of dealing with this effluent.

Other enhancements include the adoption of an environmental performance index tool to score and compare the impact of the packaging used for the Glenmorangie single malts, and a pre-qualification environment questionnaire that all prospective suppliers must complete before the firm will consider working with them. The company is actively encouraging its supply chain to adopt more environmentally sound business practices, and is working with several suppliers to implement improvements. For example, one major supplier of glass previously used large quantities of cardboard to pad the pallets of glass bottles supplied to Glenmorangie. Although the cardboard was recycled, the supplier has since been encouraged to switch to reusable plastic padding to protect the glassware.

A learning curve

Some of the key challenges in working towards 14001 relate to employee engagement, according



to McMullen. “It is critical there is buy-in from the shopfloor. To achieve that you have to present convincing arguments about why the company is taking a certain course of action,” he comments.

“For us a powerful argument was the link between reducing Glenmorangie’s environmental footprint and making efficiency improvements.”

McMullen’s other advice for companies considering a similar certification path is to allow a generous amount of time at the outset for planning: “Reviewing the legislation and the organisation’s compliance is time consuming, so have a clear timeline for each stage of the certification process. The importance of an executive team that is fully engaged and behind the project also cannot be underestimated.”

Finally, McMullen recommends developing a partnership with your certification body. “Going through the process, and particularly the involvement of an external auditor, makes it clear to our staff that this is a priority for the company,” he says.

“The renewed emphasis on training is particularly important and this alone is resulting in significant improvements in our firm; we recently had a minor chemical spillage and everyone reacted immediately in a textbook operation to contain the problem.”

Oldham Council – the tool of choice

Oldham Council took its decision to seek 14001 certification across all its services and buildings several years ago. But with budget cuts and slow progress the local authority faced a dilemma: keep on going or give up?

Strong leadership from the top and an enthusiastic policy team made the choice easier. After a concerted effort, which started in October 2011, Oldham Council achieved was certified in summer 2012, making it the first of the 10 local authorities that make up Greater Manchester to do so.



Glenmorangie distillery in Tain, Scotland, and Oldham library and lifelong learning centre

Twin goals

The council and its officers know they have a responsibility to protect the environment, and a duty to identify savings for the public purse. However, with numerous services to deliver, operations covering more than 150 buildings, shifting priorities and conflicting demands from those being served, this dual goal presents a challenge.

That has not stopped the council leading the way on the environment, however. For example, corporate multi-waste stream recycling has been in place for several years, with recycling rates across the borough doubling over the past five years. The council also operates rainwater recovery in its parks, which is saves £10,000 a year.

Although much has been done to improve the council's environmental impacts in recent years, the activity was often ad hoc, benefits were not recorded or promoted, and momentum was difficult to maintain. A framework was needed to prioritise action, keep focus at the top and celebrate what was already happening. 14001 was the tool of choice.

Nonetheless, the initial momentum towards achieving the standard proved hard to maintain. The shifting sands of services and roles made it difficult to keep pace with what was required. The small environment policy team was facing growing demands on its time and found it difficult to spread responsibility for implementing 14001.

The Sustainable Change Cooperative – a Manchester-based environmental and sustainability consultancy – provided additional external support. Its role was to not only help with the technical aspects of implementing 14001, but also helped give the council officers involved the skills and confidence to really make the system effective.

Getting 14001 in place

The council agreed that 14001 would include all services (excluding schools) and buildings over which it had direct control. A steering group, led by the executive director for commercial services, completed

an environmental review and impact map. The focus was on generating savings and new business as the council evolves with changes to services and public needs. There was also a strong moral duty to work more effectively on sustainability issues and share the outcomes with people across the borough.

It was recognised that as the number of assets owned by the council declined and services merged, environmental risks could be missed or could increase. The structure of the council's impact register, the training regime and environmental audit cycle helps ensure new and changing services are managed effectively during an unprecedented period of change for local authorities in England.

The council found the process of developing an EMS a challenge, having started it some years ago. Looking back at its experiences, the Oldham team agrees that there are a few things it might now do differently if the EMS project was to be tackled from the start again:

- the paperwork should be simple, relevant and limited to what is absolutely necessary;
- key services and people would be brought on board earlier in the process and involved to a much greater degree; and
- having experienced specialists willing to share experience, train officers and offer support throughout the process helps to save time and resources, as well as to maintain momentum.

What's next?

With OHSAS 18001 certification already in place for its health and safety management system, Oldham is now starting to align the two systems more closely, with the ultimate goal of fully integrating them over time.

Performance indicators to measure progress are important to all public services and Oldham Council is no different. A lot of effort has gone into developing approaches to track how the authority is doing against these indicators, and these systems are now being used to intertwine elements of the EMS, particularly objectives, targets, actions and indicators, with Oldham's other management systems.

With a growing confidence and knowledge has come greater understanding of how to use an EMS to best effect. The focus has moved from paperwork to action, promoting positive actions and dealing with issues that might cause harmful outputs before they arise. A new environment policy has been brought to life through a film, which involves people from across the council and has now been integrated into training programmes.

Putting the system in place is just the start, however, there is a never-ending "to do" list to tackle, more savings to find and track, and better links to make between the council's services and practices.

The difference is that the policy team at Oldham now has the skills and confidence to do more, and has many more people willing to help. The focus moving forward is on maintaining momentum.

Key activities for the next year include: working more closely with contractors; aligning the EMS with other council processes; and further developing the team's links with everyone in the council.

Slurry, screening and salami slicing

Stephen Tromans highlights two cases that demonstrate EIA remains an ever fertile source of legal development



Stephen Tromans
QC, 39 Essex
Street

Development requiring an environmental impact assessment (EIA) is generally one that falls into either Schedule 1 or Schedule 2 of the EIA Regulations. The secretary of state for communities and local government has power, however, to subject an application for planning permission to EIA screening even where it falls outside the criteria set by the schedules.

Increasingly, objectors to developments, including rival developers, are seeking to challenge a refusal by the secretary to exercise that power. *R (Threadneedle) v Southwark LBC* [2012] EWHC 855 (Admin) was one such case. The result was a judgment emphasising the discretionary nature of the secretary's power.

The case focused on student accommodation in Southwark, which was well below the threshold for an urban development project under Schedule 2. The local planning authority (Southwark Council) maintained that the development was not EIA development. The claimants had an interest in a nearby site and argued that the development would, cumulatively with other consented or proposed development in the area, have impacts on daylight, historic London monuments and key views across the capital.

Although the claimants wrote to the secretary urging him to call the planning application in for consideration, he declined to do so, and the council proceeded to grant planning permission.

The key question for the High Court was whether the secretary erred in law by not even considering whether to exercise his discretion. Justice Lindblom noted that the power to deem a project an EIA development even though it is not, is one reserved solely for the secretary of state, and in that sense is plainly a power to make an exception to the normal operation of the statutory regime under the EIA Regulations. Lindblom identified four features of the power worth noting:

- it is unlike other powers in the EIA Regulations in that there is no prescribed procedure for it;
- it may be used only by the secretary of state;
- a decision not to exercise the power will not amount to a breach either of the EIA Directive (85/337/EEC (as amended)) or the EIA Regulations; and
- there is no general obligation on the secretary to consider making a direction.

The *Threadneedle* case should be read alongside *R (Burridge) v Breckland DC* [2012] EWHC 1102 (Admin), where the High Court heard further interesting argument concerning cumulative development.

The development in question combined an anaerobic digester, which would produce biogas from a mixture of slurry, chicken litter and maize, and a combined heat and power plant (CHP) that would generate energy from the biogas. Both facilities were on a single site. The application was clearly Schedule 2 development and Breckland District Council in Norfolk subjected it to screening opinion under the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999, which were in force at the time – the result was a negative opinion.

In response to objections regarding the CHP plant, the developer moved it to an existing industrial site more than 1km away, proposing to connect it to the main anaerobic digestion (AD) site by a pipeline. It made a separate planning application for the CHP plant. The council decided no further screening opinion was required for the main site, despite the removal of the CHP plant. A judicial review was sought on the basis that what had happened amounted to “salami-slicing” of a project in an effort to frustrate the aims of the EIA Directive.

Judge Waksman dismissed the challenge, noting that the CHP plant alone was not EIA development and that the EIA Regulations did not oblige the council to consider that application together with the application for the main AD site for screening purposes. The judge acknowledged that had the original application been for an AD site with a CHP plant elsewhere, as was eventually the position, the council would have been open to take the CHP plant into consideration when screening the AD site's application. However, as there had been no material change in the original application by removal of the CHP plant there was no obligation on the council to screen again.

The underlying merits of the claimant's case were relatively weak, in that when the AD and CHP plant were one development at a single site they had been the subject of a negative screening opinion, and the CHP plant had been moved to a location where it was less likely to give rise to environmental effects.



Adding weight

Anya Ledwith on the best ways to rate the significance of environmental aspects

The foundation of a good quality environment management system (EMS) is an understanding of the organisation's aspects and impacts. This information should be used to recognise the need for, and determine the type of, operational controls required. Developing a process to rank these aspects for significance ensures that the EMS is not overwhelmed from the start.

Avoiding confusion

There is sometimes confusion in differentiating between environmental aspects and impacts. ISO 14001 defines aspects as activities, products or services that can interact with the environment, while impacts are any change to the environment (adverse or beneficial) resulting from an aspect.

So, for example, consider business journeys by car:

- **activity** – driving a car
- **aspect** – use of diesel as fuel
- **impact** – resulting air pollution

In its initial environmental review, the organisation will look for aspects and impacts relating to all activities, products and services. This is a detailed process covering normal, abnormal and emergency conditions, to identify aspects arising from its past, existing or planned activities. It should consider the aspects that it can control (such as its own energy consumption) or those it can influence (the activities of its contractors). Organisations are not expected to manage issues outside their sphere of influence or control.

The scope of the environmental review extends across the organisation, from the back office to manufacturing lines, service delivery and business travel. It should examine the materials used and wastes produced, as well as the activities of contractors, suppliers and even customers. Producing an "aspects register" that also details arising environmental impacts is an extensive process and one that often results in copious amounts of information which will need to be managed.



Taking precedence

Normal conditions, by their definition, are more common than abnormal or emergency situations, but which take precedence? Similar sites may have different operating times, or levels of output, but can they be addressed in the same way? Is it possible to compare a few kilos of hazardous waste to large quantities of paper? Meanwhile, some aspects will have greater impacts or are regulated by legislation, so should they receive the same attention as others?

Clearly, an organisation cannot and should not manage everything equally and all at once; it needs to prioritise so the more important (or significant) aspects are dealt with first and/or with greater scrutiny.

Significance ratings allow an organisation to decide on the appropriate control measures and timescales, enabling it to manage its environmental aspects in a considered manner.

So, what is significant? If we look to 14001; it states that a “significant environmental aspect has, or can have, a significant environmental impact”.

However, 14001 does not specify requirements on how to determine significance. The EMS general guidelines (ISO 14004) are a little more helpful, noting that significance can be applied either to environmental aspects or to their associated impacts, usually the latter. Often, a mixture of the two is evaluated while considering:

- environmental criteria (such as impact severity or frequency of the aspect);
- applicable legal requirements (like specified waste quantities or discharge permit limits); and
- stakeholder concerns (for example staff interests, public image, noise or odour).

Evaluating significance involves both technical analysis and judgment, so one person may interpret

the results differently from another, and what applies to one organisation may not apply to another.

Providing consistency

Establishing formal criteria should help to provide consistency. ISO standards, of course, require records to be kept. A documented procedure is essential, but it should not be overly complex (leaving it difficult to understand) or too simplistic (forcing many assumptions to be made), otherwise there is a risk that variations will be introduced.

The methodology must be relevant to the organisation using it: an office-based company and a manufacturing firm, for example, will have distinct aspects that affect the environment and the businesses very differently.

There are numerous and varied methodologies, developed by organisations from different sectors over the years. Examples include:

- **Cardiff & Vale NHS Trust** uses a simple 5x5 scoring matrix, which scores aspects and impacts against two broad categories: “control” and “severity”. Control of the aspect is scored from one, where there is a high degree of control in place, to five, where there is negligible or no control. Severity of the impact ranges from one (insignificant or positive impact) to five (severe). The scores are multiplied to give results up to 25 and ranked as low significance (1–6), medium (8–10) or high (12–25).
- Electronics manufacturer **Raytheon Systems** also uses a 5x5 matrix, which compares “likelihood” against “severity”, with a maximum score of 25. Although legislation is not included in the numerical scoring system, it is considered in the aspects register, which, at nearly 300 lines long, includes a range of aspects, such as energy consumption, use of chemicals and disposal of hazardous waste. Unusually, each aspect is scored twice, both before and after controls are implemented, to show how risks are managed.
- Design and print company **Easibind**, by contrast, uses a two-stage approach, which compares “likelihood” and “severity” and includes a detailed procedure for evaluation. A risk matrix is used to provide risk ratings (from very low to very high) rather than a numerical score. These ratings are used to classify the aspect (see panel, left).
- **Crawley Borough Council** uses a comprehensive method to consider a range of issues, including influence, severity, duration, cumulative effect, legislation and stakeholder interest. A single score (from one to five) is given, with four or five deemed significant. This process, while thorough, appears more complicated to follow than a matrix without detailed guidance on scoring.
- Accountancy firm **KPMG** has an interesting approach, which recognises the nature of the organisation and its associated aspects. Each aspect or impact is assessed against a set of clearly

A RISK RATINGS MATRIX

| | |
|--------|--|
| High | Not currently controlled. In breach of legislation or policy. Sensitive environment (groundwater proximity, conservation area, residential area). Repeated complaints. |
| Medium | Not fully controlled under normal or abnormal conditions. Above-average probability of occurrence and/or low probability of detection. Financial threat. Rising concern of shareholders. Complaint received. |
| Low | Controlled under normal and abnormal conditions. Low probability of occurrence and/or high probability of detection. Minimal impact. |

defined criteria at the function level, producing scores of one, two or three. The sum of the scores for each aspect is then ranked as having a high environmental significance (if it is more than 11), limited significance or no significance. The criteria used to assess the severity of environmental impacts include: business disruption, financial loss and reputation.

Perhaps one simplified matrix is too basic for the range of aspects likely to be encountered. A slightly more detailed system, tailored to the relevant needs and activities of the organisation, is preferable.

A bespoke risk matrix could, for example, include categories such as CO₂ emissions (amount of carbon produced); frequency (how often the aspect occurs); severity (degree of impact on the environment); likelihood (probability impact will occur); controllable (extent of control or influence, and resources required); and regulated (degree of regulation).

These are fairly standard categories, but a tailored approach means they can be supplemented by others that are important to the organisation, such as stakeholder interest, financial impact or business continuity.

Each category must then be scored for significance – using five levels of severity is a common approach. Taking the above categories as examples, these levels could range from “minimal” to “major” for CO₂

emissions; “seldom” to “repeated” for frequency; and “improbable” to “very likely” for likelihood. Short explanations should support the terminology, clarifying, for example, that “intermittent” frequency means occurring at intervals of one to six months, while “regular” means intervals of one to four weeks.

Scoring is then applied on a scale of 1–5, with, for instance, “minimal” carbon emissions scoring one, and “major” scoring five. Under such a matrix, an overall score of 19 or more would be regarded significant.

Ongoing process

Whichever method is chosen, determining significance is not a one-off project. It should be undertaken regularly, and particularly when there has been changes to activities; after the acquisition of new sites; or following an incident. 14001 auditors look for a formal procedure that is properly understood and applied. Non-conformances may be raised against the method, but are more likely to arise from how it is applied.

When developing an approach, keep it simple, make it relevant and ensure it is replicable. And don't forget to review it regularly.

Anya Ledwith is a director at environment and carbon management consultancy ESHCon. More information is available at eshcon.co.uk.

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Martin is head of the UK delegation to the International Organisation for Standardisation (ISO) on environmental management and represents the UK in this area of work, including the current revision of ISO 14001.

Richard Walsh – principal assessor at NQA

Richard Walsh is responsible for ensuring business management systems meet the requirements of ISO 14001 and other international standards.

Dave Clark – UK sustainability manager, PepsiCo UK

Dave is responsible for the co-ordination and delivery of sustainability plans & targets for PepsiCo's UK operations.



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the
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Claire Lea appointed to IEMA's board

Governance At the IEMA board meeting on 14 September, Claire Lea (pictured), IEMA's director of membership strategy and development, was appointed to the board as an executive director.

Lea joins the Institute's chief executive Jan Chmiel and policy director Martin Baxter as IEMA's third executive representative on the board.

As well as the three IEMA executives, the board is comprised of three independent non-executive directors who are recruited from external businesses, and five non-executive directors who are members of the Institute.

The board provides oversight and support to the chief executive, and the rest of the IEMA

team, in developing and implementing the Institute's corporate strategy.

At this year's annual meeting three board members stood down, and three new members were elected to replace them, including Lea. She has been with IEMA since 2000 and now leads the

direction and development of the Institute's membership, overseeing its work on professional standards and skills, including the IEMA skills map.

Lea is looking forward to working as part of the board to deliver IEMA's vision for environment and sustainability skills, bringing together the strategy for training, professional standards and assessment, and professional development.

Along with the other executive members, Lea will report to the

board every business quarter on issues surrounding professional development and membership projects.

Chair of the board Adrian Belton, who is chief executive at the Food and Environment Research Agency, welcomed Lea, saying that the board would benefit from her wealth of experience and knowledge. "The board is keen to provide opportunities for the personal development of IEMA's senior staff who have the potential to become members of the board. I am therefore delighted to welcome Claire Lea as a new member, bringing the complement from the executive up to three. She will bring a particular perspective to the board, based on her knowledge of, and interest in, developing membership services."

Details of the other non-executive director additions will feature in the December issue of *the environmentalist*.

To find out more about the IEMA board and its role in the Institute's governance, visit lexisurl.com/iema13777. A list of the board's members and their biography's are also available.



COUNTDOWN TO THE 2012 GRADUATE AWARD

The nomination period for the 2012 IEMA graduate award, sponsored by Land Securities, has now closed, and the judges are busy selecting a winner and two runners-up.

From all of the nominations received, the judges are aiming to identify three recent graduates of environmental studies who have made a real environmental difference to their business since achieving their first green role.

The award ultimately aims to find, nurture and promote the best emerging environmental talent and bolster understanding of the roles environment professionals – of all levels of experience – play in the green economy.

Winning, or even being shortlisted, provides a CV boost for individuals early on in their environment career, and demonstrates that their organisations employ forward-thinking graduates and invest resources in innovative projects.

Those shortlisted for the graduate award in the past have often gone on to work with IEMA on other projects, and some have even been profiled in the *Guardian* and in various environmental publications, so a nomination can lead to great things beyond the initial prize (see below).

This year's judging panel will meet on 21 November to select their shortlist of five and decide the winner and runners-up. All five finalists have now been invited to attend the Edie sustainable leaders awards ceremony on 5 December, where IEMA's chief executive Jan Chmiel will present the winner with a prize of £1,000, a trophy and one year's graduate membership of the Institute.

The winner and runners-up will be showcased in the December issue of *the environmentalist*, and interviews with all of the finalists will feature in the January 2013 issue. For more information about the award, visit lexisurl.com/iema13636.



Relocation reminder

Headquarters IEMA has now relocated to its new head office and would like to thank all of its members for their patience while the move was taking place on 2–5 November.

While the Institute's telephone, fax, email and website details remain unchanged, IEMA asks that all its members take the time to update any records for its postal address to:

IEMA
Saracen House
Crusader Road
City Office Park
Tritton Road
Lincoln
LN6 7AS

Any mail sent to the Institute's previous address at St Nicholas House will be automatically redirected during the coming months; however, IEMA reminds members to ensure that any future correspondence is sent to its new head office address.

Refreshing information sources

Knowledge sharing IEMA has relaunched, renamed and added to its e-briefing series to create an up-to-date set of useful, accessible and informative reference notes for environment practitioners.

The series, which was launched in 2011, is now formed of factsheets and practitioner notes. A variety of in-depth and topic-specific business briefings will also be introduced in early 2013.

Factsheets

The factsheets are single-sheet notes, featuring introductory-level information on specific issues.

These sheets are now available covering the following topics:

- biodiversity offsetting; and
- effective non-technical summaries for environmental impact assessment (EIA).

Practitioner notes

The practitioner notes are four sides of A4 in length and are best viewed as a PDF (which can be downloaded from lexisurl.com/iema13775).

They include a greater level of detail and have been published under the following headings:

- environment management systems

(EMS) and greenhouse-gas (GHG) reductions;

- green-tariff electricity;
- schemes and standards for GHG accounting and management;
- carbon neutrality;
- considering ecosystems services in EIA; and
- accredited third-party certification services.

The practitioner note examining the role of accredited third-party certification is the latest addition to the range. Written

by IEMA's Ed Barlow, with contributions from several members – Adrian Clamp (J Coffey Construction), Janet Gascoigne (UKAS), Chris Passmore (2sB), (Anuj Saush (EDF Energy), James Smith (Sustainability Consultants) and Ben Vivian (Vivian Partnership) – the document covers some of the main factors to be considered when using certification services, mainly from the perspective of ISO 14001.

New publications

New factsheets due to be published in the coming months will cover:

- ecosystems services;
- environmental reporting and green claims;
- the environmental business case;
- value chains;
- implementing an EMS;
- an introduction to EIA;
- change management; and
- data management.

Meanwhile, new practitioner notes for 2013 will provide information on:

- environmentally enabled design;
- evaluating the significance of climate change in EIA; and
- delivering EIA's promises post-consent.

Links to the factsheets and practitioner notes are available on the iema.net homepage or the online IEMA reading room – the home of all IEMA reference materials – at lexisurl.com/iema13775.



Annual survey on pay and working conditions

Practitioners' survey On 14 December all Graduate, Affiliate, Associate, Full and Fellow members will be invited to contribute to IEMA's latest survey of environment professionals' pay, working conditions and achievements.

The annual poll assesses how the profession is developing, using salaries, benefits, qualifications, satisfaction levels and examples of individual success as markers of overall progress. This year's poll is now being finalised and will be open for one month.

The survey results provide a valuable insight into the state of the profession and so the Institute asks its members to please take around 15 minutes to answer the

questionnaire between 14 December and 14 January 2013.

The survey for 2011 revealed that an environment professional with Full IEMA membership earned on average £45,250, while an Associate earned £35,000 – notably more than the UK average according to results of the government's annual survey of hours and earnings, which found that those employed as "professionals" in the UK earned £36,997 in 2011 and "associate professionals" earned £29,554.

The survey also showed that:

- there was a strong, positive relationship between an environment professional's income and their IEMA membership level;

- the difference in earnings between male and female environment professionals is lower than the national average;
- those in financial and legal services had the highest earnings; and
- more than two-thirds of environment professionals are satisfied or very satisfied in their roles.

All IEMA members will receive an initial invitation to participate in the survey on 14 December and a reminder will follow in January.

The results of the survey will be published in a special supplement with the March 2013 issue of *the environmentalist*.

Shaping the future of EIA practice

EIA IEMA hosted the second EIA Quality Mark forum on 17 October, and more than 70 leading environmental impact assessment (EIA) practitioners, from the scheme's registrants and government departments, were joined by invited guests to discuss EIA practice.

The forum, which was held at the Birmingham and Midlands Institute, focused on:

- proposals for the new EIA Directive;
- considering climate change and biodiversity in impact assessment; and
- improving the success of impact assessment in influencing iterative design and mitigation delivery.

The keynote speech was delivered by Louis Meuleman, from the European Commission's policy office, and gave delegates substantial insight into the commission's proposals to improve the EIA Directive (2011/92/EU) (see p.5).

The afternoon plenary session examined how climate-change adaptation and biodiversity can be considered in EIA practice. The session included a presentation on the commission's forthcoming guidance on integrating climate-change adaptation and biodiversity into EIA delivered by Ric Eales, managing director at Collingwood Environmental Planning and co-author of the guidance.

Eales was then joined for a panel discussion on the issue by Delia Shannon, biodiversity manager at Aggregate Industries, and Paul Bradley, a member of Defra's national adaptation plan team.

On the applied side of EIA, the forum included a number of workshop sessions

the output of which will contribute to the creation of three new IEMA practitioner notes (see p.35), to be launched in April 2013. These sessions were:

- Delivering environmentally enabled design through EIA – led by Colin Goodrum and Maeve McElvaney from architects LDA Design.
- Evaluating climate change significance in EIA – led by James Montgomery

and Henry Le Brecht from engineering consultancy Mott MacDonald.

- Delivering EIA's promises post-consent – led by Martin Broderick, senior technical director at WSP Group.

Further details about the 2012 EIA Quality Mark forum, including all the day's presentations, are available at lexisurl.com/iema13776.

IEMA EVENTS

| Date | Region/Time | Topic |
|-----------------------------|-----------------|---|
| Regional events | | |
| 23 November | Midlands | Insight into internal environmental auditing |
| 3 December | North West | Visit to Davyhulme wastewater treatment works and anaerobic digestion plant |
| 6 December | South East | Christmas social (London) |
| 20 December | East of England | Christmas social (Cambridge) |
| Membership workshops | | |
| 7 December | Scotland West | Full and CEnv membership workshop (Glasgow) |
| 14 December | South East | Full and CEnv membership workshop (London) |
| 16 December | North West | Full and CEnv membership workshop (Liverpool) |
| Webinars | | |
| 29 November | 12.30–1.30pm | Building environmental mitigation into design |
| 20 December | 12.30–1.30pm | EIA leadership: the role of the EIA coordinator |

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SUCCESSFUL IEMA MEMBERS IN 2012

IEMA congratulates the following individuals on successfully upgrading their membership.

Associate

Oghenerurie Aghri, Coventry University
Emily Agus, Parsons Brinckerhoff
Sean Antonie, Gulf Precast Concrete
Boniface Azeh, Oxford City Council
John Bacon, GroundSure
Kiran Bandaru, Branton
Adetayo Bankole, Environment Agency
Chris Banks, C B Environmental Services
John Barnes
Petra Batterbee, Intersurgical
Leslie Berger, Houghton Associates
David Bexon, Kuhri Sports
Abigail Brady
Abigail Brown, Ironside Farrar
Duncan Brown, CKD Gilbraith
Laura Brown, Seddon Property Services
Russell Brown
Katie Bruton, Worcestershire County Council
Steven Burgess, University of Southampton
Mark Burke, The Lettuce Company
Leonardo Camelo, Kings College London
James Campbell, Wind Prospect Group
Rory Carmichael, Wind Prospect Group
David Carter, East Coast Mainline
Nicholas Cary-Brown, Masdar-Abu Dhabi Future Energy Company
Bernadette Cass, Cass and Sons
Mathew Chard
Colin Clarke, Ministry of Defence, Navy
William Cochrane, Luddon Construction

Lee Collier, Linklaters
Nigel Cooper, Gemini Riteway Scaffolding
Stella Consonni, Valpak
Matthew Coppenhall, EDF Trading Gas Storage
Daniel Cox, Resource and Environmental Consultants
Emma Craig, Ernst & Young
Richard Crocker, St George
Amy Dartington, Bath and North East Somerset Council
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Philip Davies, Vinci
Petula Davis, Stroud District Council
Sandeep Dhesi, Valpak
Andrea Dudas, Ernst & Young
Jayne Dunn, Hasdam
Omua Edeki
Ebele Efobi, National Express Group
Wendy Ellis, ClearGold Consulting
Mohamed El Shazly, Balfour Beatty Group
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Kirsty Flynn, Jacobs Engineering UK
Christabel Fombang
Emma Fromant, ARUP
Po Yin Fung, University of Southampton
Darren Fyles, Worcestershire County Council
Steven Gilder, Rhead Group
John Gillard, Cunningham Lindsey
Patricia Gimenez Marti, ERM
Stephen Glenny, Temple Group
Katie Goldsmith, Groundwork Yorkshire and Humber
Deirdre Gorman, Grontmij
Michael Gough, Royal HaskoningDHV
Adam Grant, GroundSure
Annabel Gray, PA Consulting Group
Jessica Greatrex, Ernst & Young

Matthew Green, Tulip
Miriam Grossmanova, London School of Economics and Political Science
James Harbidge, East Coast Mainline
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Nancy Hobhouse, Barclays Bank
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Nnaemeka Iloani, Environment Agency (NEAS)
Ofure Ngozi Isenmila, University of Strathclyde
Kelly Jaggard, Argyll Environmental
Paul Jarvis, Utility Partnership
Alberto Jaume, Nottinghamshire NHS Trust
Stephen John-Ferrington, Stobart Rail
Gareth Jones, Groundwork Wales
Katarina Jones, Carbon Clear
Nihal Karagoz, RSK
Stephen Kavanagh, Lancaster University
Malcolm Kerr, Letslivegreen
James Kirkwood, Coleg Menai
Martin Klabou, King George V College
George Lartey-Young, University of Salford
Angus Laurie, Nexen Petroleum
Lucinda Lay, Aggregate Industries
Julian Leary, Ministry of Defence, Airforce
Rui Lee, ERM
Sunmi Lee, Merton Chamber of Commerce
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Graeme Miles
Otuawe Moro, Imperial College
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Chartered environmentalist

Kathryn Archer, Airbus

Dual

Johannes Beneke, Network Rail
Kirsty Greggs, British Gypsum
Stephen Isaac, Halcrow Group
Richard Robinson, Amec
Huda Shaka, Arup
Ruth Thomas, ENFUSION
Orlando Venn, Treweek Environmental Consultants

Upgrading your membership is important in ensuring you gain the professional recognition you deserve, it can help you secure the job you want and achieve a higher salary. To progress your membership, go to lexisurl.com/iema13639 or call IEMA on +44 (0)1522 540069 to discuss your options with a professional development adviser.

Adam Wilkinson

Health, safety and environmental adviser,
Cambridge Display Technology



Why did you become an environment professional?

I wanted something multidisciplinary. I love the broad range of elements that make up my job: management systems, carbon reduction, water efficiency, travel plans, audits, waste management and corporate responsibility. Variety is the very spice of life.

What was your first environment job?

Technically, it was a graduate placement with Halcrow, working on the national flood risk assessment. It was a great introduction to the profession but involved a lot of technical geographic information systems work – I soon realised I wanted a broader environment management role.

How did you get your first environment role?

I attended a careers fair in my final year at university and after the event got talking to one of the speakers from Halcrow, who advised me they had graduate places.

How have you developed your environment career?

Obtaining an MSc in environmental management for business has certainly helped, but my most valuable career development so far was the opportunity to work closely with an experienced consultant in designing and implementing an environment management system at the Royal Veterinary College. I learned a lot and gained an enormous amount of hands-on experience; it's stood me in great stead.

What does your current role involve?

From organising efficiency projects and environment management systems, to running training sessions, I get to do it all. We are in the early stages of formalising our environment management approach and it's going to be an exciting journey.

How has your role changed over the past few years?

My day-to-day work has changed enormously, not least with a move from the public to

the private sector. The biggest change, however, has been the addition of health and safety duties to my job description.

What's the best part of your work?

By far, it's investigating incidents. It's rare for things to go wrong, but when they do I really enjoy scrutinising events to discover the root cause, and then taking action to ensure it won't happen again.

What's the hardest part of your job?

Maintaining the balance between health and safety and environment. Environment projects can easily fall in to the "would be nice" pile. I'm hoping further integration of our management systems will ease this in the future.

What was the last development/training course/event you attended?

I completed my MSc early this year and am currently taking the NEBOSH diploma in occupational health and safety.

What did you bring back to your job?

Every module of the degree was useful in some respect, though learning how to develop and present environment project appraisals was particularly helpful. It's proven a lot easier to get senior management on side with a quality project appraisal.

What is/are the most important skill(s) for your role and why?

Communication skills are extremely important. I'm the only person in my company of 200 with an environment background and I have to ensure that everyone is engaged. It's also very important to be flexible; it's a dynamic period for environment management and sustainability and you have to be able to keep abreast of changes.

Where do you see the environment profession going?

It's definitely a growth area. In smaller organisations I think environment departments are going to be increasingly

CAREER FILE

Qualifications:

BSc oceanography with physical geography; MSc environmental management for business; AIEMA

Career history

August 2011 to now: Health, safety and environment adviser, Cambridge Display Technology

2009–2011: Environment officer, Royal Veterinary College

June 2008–November 2008:

Geographic information system technician, Halcrow

merged with health, safety, quality and risk functions. It won't be long before all organisations treat this collective as an important function in its own right.

Where would like to be in five years' time?

Doing a similar type of work but managing a team. I really enjoy my job but people management would be a welcome addition.

What advice would you give to someone considering entering the profession?

It's a fantastic area to work in because there's such a huge variety of roles out there. A qualification will help you get a foot in the door, but nothing beats hands-on experience. Take every opportunity you can to work in industry; it'll add serious weight to your CV.

How do you use IEMA's environmental skills map?

I've pinned up a hardcopy up in front of my manager's desk! We're using it to help set personal performance targets for next year.

the environmentalist



For recruitment advertising in *the environmentalist*, please contact Elaheh Umeh
Tel 020 8212 1984,
email: elaheh.umeh@lexisnexis.co.uk

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