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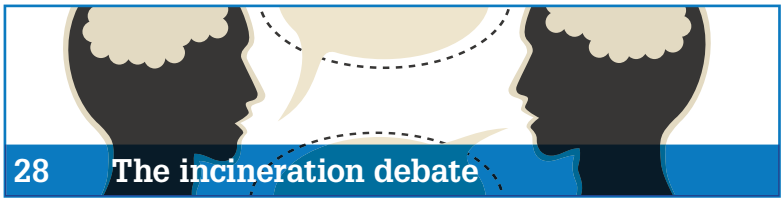
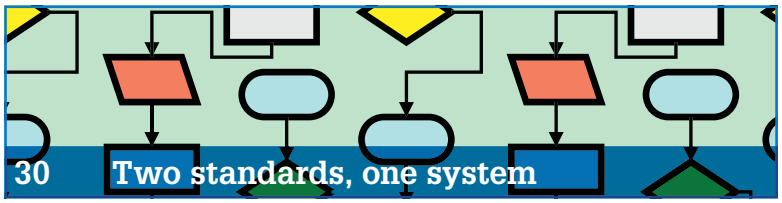
Alison Smith's series on environmental software shifts to the range of products available, from compliance modules to sustainability applications

Environment minister Jane Davidson tells *the environmentalist* how Wales is tackling environment issues by linking policy to sustainable development



The ESA's Matthew Farrow and Becky Slater from Friends of the Earth give differing views on government plans to increase energy from waste



the environmentalist reports on BMT Group's sustainable management system, which meets the requirements of both ISO 9001 and 14001

Ian Hill, chief sustainability officer at Openreach, outlines his four key steps to setting effective environmental targets and objectives

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Advertising, subscription and back-copy enquiries to
Customer services,
tel: 0845 370 1234
The 2011 annual rate is £135.

Printing
Headley Brothers Ltd, Ashford, Kent

Published by
LexisNexis, Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS
www.lexisnexis.co.uk

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Spotlight on nuclear

Almost 25 years since Chernobyl became synonymous with nuclear catastrophe, the world is watching events unfold in Japan at the Fukushima Daiichi nuclear power plant and wondering whether it too will be added to the list of nuclear disasters. As *the environmentalist* went to press nuclear experts said it was unlikely that the damage done to the plant by the earthquake and tsunami that hit Japan on 11 March would lead to a disaster on the scale of Chernobyl.

However, the potential meltdown of one or more of the reactors at Fukushima Daiichi comes just as most of the developed world was again looking favourably at nuclear power as a source of energy. The UK government, for example, confirmed in October 2010 eight sites as potentially suitable for new nuclear power plants, with the first possibly operational by 2018.

So, where now for the nuclear industry? Will new plants come on stream or will the nuclear renaissance be largely stillborn? If the experts are correct and there is no meltdown at Fukushima Daiichi, many will want the industry to go ahead and build the 350 or so new reactors planned worldwide over the next two decades. Proponents are likely to argue that modern designs – Fukushima Daiichi is not a modern design, having been built in the 1970s – and stricter safety standards mean there is little health and environmental risk even if things do go wrong.

The events at the Fukushima plant in Japan will provide grist to the anti-nuclear mill and may make some pro-nuclear environmentalists rethink their position

Environmentalists are largely split over nuclear energy. One camp is against nuclear power per se. The other group supports its expansion, seeing nuclear power as a relatively low-carbon alternative to fossil-fuel power generation. The events in Japan will provide grist to the anti-nuclear mill and may make some pro-nuclear environmentalists rethink their position.

The UK government has promised to learn whatever lessons emerge from the Japanese experience, but doubts about the industry are likely to intensify and make it much more difficult to build a new generation of nuclear power plants in this country. That means the government will have to revisit its future energy plans, as nuclear is a key feature of energy security and decarbonising the UK's electricity generation.

Paul Suff, editor

Short cuts

Business and public sector first for RHI

The Renewable Heat Incentive (RHI) has finally been given the green light by the government, and will initially be targeted mainly at big heat users in industry, business and the public sector. Under phase I of the RHI, organisations using renewable heat will receive quarterly payments for 20 years. Tariff rates range from 1.9p to 7.6p per KWh for biomass boilers; from 3p to 4.3p per kWh for ground and water heat pumps, and geothermal; 8.5p/kWh for solar thermal; and 6.5p/kWh for biomethane. Organisations that have installed eligible renewable-heat equipment since 15 July 2009 will also qualify for the scheme. DECC has also published draft text of the Regulations that will underpin the RHI. Interested parties have until 5 April to comment. The energy and climate change department says it will seek parliamentary approval of the Regulations in July 2011 and will introduce the tariff scheme thereafter.

MEPs adopt stricter WEEE targets

MEPs have backed higher targets for collecting, recycling and reusing waste electrical and electronic equipment (WEEE) in their first reading of the recast WEEE Directive (2002/96/EC). They also want tougher measures to prevent the export of e-waste to developing countries, where it can pose a health and environment hazard. The European Parliament says that member states should collect 85% of the WEEE they produce from 2016 – the European Commission had recommended 65%. It also proposes a 2012 target whereby EU countries collect 4kg of e-waste per inhabitant (as under existing rules) or the weight of e-waste collected in 2010, whichever is greater. MEPs also want better treatment of WEEE to reclaim valuable raw materials, recommending a 50%–75% recycling target (depending on category) and a new 5% reuse goal. It is estimated that more than one million tonnes of waste electrical equipment is discarded each year in the UK.

EU roadmap falls short on emissions

Hedegaard: starting the low-carbon transition will pay off

CLIMATE CHANGE Emissions of greenhouse gases (GHG) across the EU can be cut by 25% below 1990 levels by 2020 if member states meet the bloc's 20% energy-efficiency improvement goal, says the European Commission in its roadmap (www.lexisurl.com/iema6425) for moving to a competitive low-carbon Europe by 2050. Member states can meet the efficiency goal through measures already in the pipeline, says the commission.

Although the map sets out a cost-efficient pathway to reach the EU's long-term target, to reduce GHG discharges by 80%–95% below 1990 levels by 2050, a commitment to a higher 30% reduction target for 2020, something that the UK government has called for, is absent from the document.

Connie Hedegaard, European commissioner for climate action, says that starting the transition to a low-carbon economy now will cost less than waiting. "As oil prices keep rising, Europe is paying more every year for its energy bill and becoming more vulnerable to price shocks. So starting the transition now will pay off," she says.

Environmental groups criticised the lack of any strengthening of the 2020 target, however, particularly as new research suggests a higher reduction goal could bring greater economic benefits. "The EU's plans for tackling climate change are totally inadequate – they may have a map but they aren't going fast enough or far enough," commented Mike Childs, head of climate change at Friends of the Earth. The map reveals that current policies are not projected to reduce EU emissions to 30% below 1990 levels until 2030.

Meanwhile, researchers at the Oxford-based Smith School of Enterprise (SSEE) and the Environment and Potsdam Institute for Climate Impact Research (PIK) (www.lexisurl.com/iema6358) have discovered that increasing the EU's 2020 GHG reduction target from 20% to 30% could help boost European investments by 4% and create up to six million additional jobs.

Using a new model, based on ambitious investment expectations rather than business-as-usual trends, they found that the European economy could be shifted to a new "low-carbon equilibrium" by a decisive move to a domestic 30% emissions-reduction target and independently of an international post-2012 agreement.

"In traditional economic models, reducing GHG emissions incurs an extra cost in the short term, which is justified by avoiding long-term damages. However, what we show is that by credibly engaging on the transition to a low-carbon economy through the adoption of an ambitious target and adequate policies, Europe will find itself in a win–win situation of increasing economic growth while reducing greenhouse gases," said lead author Professor Carl Jaeger at the PIK.

The researchers point out that a smaller reduction in GHG emissions is insufficient to mobilise innovation, but that the higher 30% target, accompanied by ambitious growth targets, will foster an increase in the growth rate of the European economy by up to 0.6% a year over the next decade. All economic sectors – agriculture, energy, industry, construction and services – will experience growth, says the report.

The SSEE/PIK findings are supported by a second report, from UNEP (www.lexisurl.com/iema6359). It found that greening the economy not only generates growth, and in particular gains in natural capital, but it also produces higher GDP growth.

UNEP says investing 2% of global GDP (around $1.3 trillion) into 10 key sectors – agriculture, buildings, energy, fisheries, forests, manufacturing, tourism, transport, water and waste management – can kick-start a transition towards a low-carbon, resource-efficient economy.

Government sounds carbon action bell

ENERGY Whitehall departments will have to take firm actions and meet strict deadlines to reduce their emissions under a carbon action plan (CAP) unveiled by the government. It means that government departments will be held accountable for the delivery of their carbon-reduction policies and that all policy initiatives will be tested for their impact on emissions.

"This carbon plan sets out a vision of a changed Britain, powered by cleaner energy used more efficiently in our homes and businesses, with more secure energy supplies and more stable energy prices," say deputy prime minister Nick Clegg and energy and climate change secretary Chris Huhne in their foreword to the draft plan. "But it does more than that. It shows exactly how we will deliver that vision and play our part in the global effort to tackle climate change and build a green economy through specific, practical action across government, month-by-month and department-by-department."

The actions (see panel below for examples) focus mainly on three areas: electricity generation, heating homes and businesses, and decarbonising road transport. These are the areas where the greatest and most urgent change is needed, says the plan. It also sets out how the UK will work in the European Union and with other countries to promote ambitious action on climate change.

Departments will have to deliver carbon goals

There are also obligations on the devolved administrations in Northern Ireland, Scotland and Wales.

A carbon budget management framework has been put in place to hold departments to account for their actions. It involves cross-departmental discussions on the measures to meet carbon budgets, and regular departmental monitoring and reporting against actions and indicators of progress.

The draft CAP is intended to set out and seek input into the format and content of the final plan, which will be published in October 2011 and take into account the fourth carbon budget covering the period 2023–27. The government says that it will refresh the CAP every year and post quarterly progress reports on the No.10 website. Interested parties have until 31 July to comment on the draft plan.

Specific actions and deadlines

There are 50 specific actions listed in the CAP across nine government departments. DECC and Defra are each responsible for 12 actions, the Department for Transport (DfT) and Department for Communities and Local Government (CLG) each have six, the Treasury (HMT) four and the Department for Business, Innovation & Skills (BIS) three. Some of the key actions and deadlines include:

- DECC – contract for the first UK carbon capture and storage demonstration plant by the end of 2011 and to identify further demonstration projects by May 2012.
- Defra/DECC/BIS – launch of a roadmap to a green economy, including by using insights from behavioural science, in April 2011.
- HMT – creation of a floor in the carbon price by April 2011.
- BIS – Green Investment Bank operational by September 2012.
- Defra – agree waste goals for 2014–20 and set the path towards "zero waste" by May 2011.
- DfT – development of a nationwide strategy to promote the installation of electric-vehicle infrastructure by June 2011.
- DECC/CLG – Display energy certificates extended to commercial buildings by October 2012.

Short cuts

£550 million on offer from Carbon Trust

The Carbon Trust has joined with Siemens to launch a new "green" finance deal worth £550 million to UK businesses over the next three years. The trust describes the scheme, which goes live on 4 April, as a first and says it will enable UK businesses to invest in cost-effective energy-efficiency equipment or other low-carbon technologies, such as new efficient lighting and biomass heating. Under an agreement between the two parties, Siemens Financial Services (UK) will provide the financial backing and manage the provision of funds, and the trust will use its expertise in carbon saving from energy-efficient technologies to assess the carbon, energy and cost savings of any application. This will enable the financing to pay for itself through energy savings, says the trust.

GHG reporting crucial to energy efficiency

The introduction of mandatory greenhouse-gas (GHG) reporting for large companies from 2012 would help reduce substantially the £6 billion that UK businesses currently lose each year due to poor energy efficiency, according to a new report from Carbon Connect, the business and environmental group. It also recommends the introduction of an energy management hierarchy that clearly explains to businesses the relative importance of taking immediate action to avoid and reduce emissions at source. GHG reporting will enable organisations to better make the business case for energy-efficiency investments, says the report, which is based on an inquiry last autumn that IEMA contributed to. The report also points out that accurate emissions reporting has other benefits, including improving corporate reputation and acting as a key driver of organisational change, by focusing senior management on identifying opportunities for efficiency improvements.

Six substances face REACH ban

CHEMICALS Six substances of very high concern (SVHC) will be banned within the next three to five years under the EU REACH (Registration, Evaluation, Authorisation and restriction of Chemicals) Regulation (1907/2007) unless an authorisation is granted to individual companies for their continued use.

The six SVHCs (see panel) are carcinogenic or toxic for reproduction or persist in the environment and accumulate in living organisms, and are the first to move from the REACH candidate to the authorisation list.

Under REACH, which came into force on 1 June 2007, once a substance is placed on the authorisation list companies wishing to sell or use it need to demonstrate that the required safety measures have been taken to adequately control the risks, or that the benefits for the economy and society outweigh the risks. Also, where feasible alternative substances or techniques exist, they will also have to submit a timetable for substitution. Each of the six substances has been given a "sunset date", ranging from 2014 to 2015, meaning that after that date they may only be placed on the European market or used if an authorisation has been granted or an application for authorisation has been made. Companies can only receive an authorisation for an SVHC on the list for specific uses and for a certain period of time, although that can be renewed.

There are currently another 46 SVHC on the REACH candidate list.

Six SVHCs on REACH authorisation list

- **5-tert-butyl-2, 4, 6-trinitro-m-xylene** (musk xylene) – was widely used in consumer products, including shampoo and household detergents, and is still used in some cosmetics. Classified as very persistent and very bioaccumulative. Sunset date is 21 July 2014.
- **4,4'-diaminodiphenylmethane** (MDA) – is a hardener for epoxy resin and is classified as carcinogenic. Sunset date is 21 July 2014.
- **hexabromocyclododecane** (HBCDD) – is a brominated flame retardant and is classified as persistent, bioaccumulative and toxic. Sunset date is 21 July 2015.
- **bis(2-ethylhexyl) phthalate** (DEHP) – is a plasticiser and is classified as toxic for reproduction. Sunset date is 21 January 2015.
- **benzyl butyl phthalate** (BBP) – is a plasticiser and is classified as toxic for reproduction. Sunset date is 21 January 2015.
- **dibutyl phthalate (DBP)** – is a plasticiser and is classified as toxic for reproduction. Sunset date is 21 January 2015.

EIA UPDATE

iema

In late February, the **Scottish government** laid the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011 before parliament. The Regulations come into force on 1 June 2011, which should allow time for the Scottish Planning Circular 8/2007 (Environmental Impact Assessment (EIA) Regulations) to be replaced.

The new Regulations consolidate, update, and replace Part II of the 1999 EIA (Scotland) Regulations to account for recent court rulings. Key changes include:

- New provisions requiring the need for EIAs to be considered before approving certain applications required by conditions to a planning permission.
- New provisions determining the need to screen applications for changes or extensions to existing developments.
- The need to consult the Health and Safety Executive on environmental statements.

(www.lexisurl.com/iema6413)

The **Department for Communities and Local Government**'s new planning-related EIA Regulations (England) are expected to come into force in May, but have yet to be laid before parliament. IEMA understands that, once they launch, Circular 02/99 (EIA) and its guidance will be cancelled, but there is hope that a short EIA guide will take their place.

The **Infrastructure Planning Commission**, which is due to cease operation in April 2012, launched another EIA advice note in February. While previous notes have covered the EIA basics, this latest offering is of greater practical value. It covers "the use of the Rochdale envelope" in EIA, a concept that allows EIA to be applied to proposals that lack clarity on the exact scale or detailed location of the development. (www.lexisurl.com/iema6414)

The **European Commission** has launched two EIA reports on its website:

- The first is a report undertaken for the commission on the scale of EIA activity across Europe; a note of caution that the figures on the number of EIAs in the UK (2006–08) are roughly half the number identified in the government's official statistics. (www.lexisurl.com/iema6415)
- The second has greater practical relevance, setting out the findings of a number of recent European Court of Justice rulings related to EIAs. (www.lexisurl.com/iema6416)

DECC has launched its latest consultation on offshore Strategic Environmental Assessment. It relates to plans for future offshore wind, wave and tidal renewable installations; seaward oil and gas rounds; and hydrocarbon/carbon dioxide gas storage. Consultation closes on 12 May 2011. (www.lexisurl.com/iema6417)

Look out for further EIA-related activity in *the environmentalist* in the next few issues, including: the launch of the EIA Quality Mark and a special report entitled *The State of EIA Practice in the UK*.

Finally it is your last chance to book for IEMA's EIA screening and scoping CPD workshop on 30 March in London. (www.lexisurl.com/iema6418)

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IN PARLIAMENT

Crying "wolf"

Chris Davies is the Liberal Democrat environment spokesperson in the European Parliament

MEPs and ministers have recently agreed a target for reducing CO_2 emissions from light commercial vehicles. Although the outcome was a modest victory for industry lobbyists, "White van man" has no reason to be pleased. Truly tough targets for manufacturers were fended off, but the businesses that use their vehicles will end up paying more than they need. Average emissions from new vans must not exceed 147gCO_2/km (g/km) by 2016. To be fair, this will represent an improvement on current standards by about 28%, and it may be the strictest requirement in the world, but it's some way removed from the European Commission's original proposal for a target of 135g/km.

Manufacturers succeeded in scaling back the ambitions by claiming that vehicle purchase prices would increase. That's a pity; we have been here before and should have known better. EU legislation to reduce CO_2 emissions from new cars was thrashed out in 2008. The commission proposed a target of 120g/km by 2012 but met with a blizzard of lobbying resistance. German car manufacturers claimed that it would put 65,000 jobs at risk and £2,500 on the price of a car. The compromise eventually agreed by lawmakers set a weaker target over a longer time scale, 130g/km by 2015.

Yet since regulation was proposed a transformation has taken place. Emissions from new cars have fallen annually at the fastest rate ever. Toyota is on target to beat the EU target this year; Peugeot, Citroen and Fiat are close behind. The Society of Motor Manufacturers and Traders has admitted that it "overestimated" the difficulty in cutting admissions. They had cried "wolf" when there was no wolf. Targets for 2020 are due to be proposed in two years' time. Judging from the record so far, the commission can afford to raise its ambitions.

Reducing waste could save Scottish firms £2.36 billion

WASTE Scottish companies could save a cumulative £2.36 billion annually by implementing no-cost and low-cost measures to use resources more efficiently, says a new report from Zero Waste Scotland (ZWS).

According to the Scottish government-funded waste and resources advice body, firms in Scotland could cut water and effluent bills by up to 50% and reduce their energy bills by up to 20% by changing their approach to waste. Checking for leaks, identifying materials that can be reused, switching off electrical equipment, and working more effectively with their supply chain by arranging deliveries on the same day as other firms in the local area, are all achievable steps to boosting the bottom line, says ZWS.

"Businesses must overcome the perception that going green adds cost – the opposite is true. Those companies that have addressed their environmental performance with even small changes have measured savings in their bottom line – which could hit as much as 1% of turnover," comments Iain Gulland, director at ZWS. The body says the service sector could benefit the most, saving around £1.2 billion, while manufacturers in Scotland could make £454 million of savings and the construction industry more than £170 million of savings.

It advises manufacturers to take the environment into account at the design stage of a product by ensuring it will be longer lasting, reusable and recyclable at the end of its life, and says construction firms should implement a site waste-management plan at the start of a project, as such an approach would result in less waste being sent to landfill and provide a welcome boost to profits.

Meanwhile, a new report from the Scottish Environment Protection Agency lays out for the first time the raw material supply risks facing Scotland. The report lists the top 12 materials that are critical to the Scottish economy and are likely to be subject to supply shocks in the short to medium term, as well as the seven sectors of the economy that are most at risk, some of them low-carbon technologies. The raw materials on the list include aggregates, cobalt, copper, phosphorous, and rare earth elements (see pp.17–20). The industries most susceptible include food and drink, chemicals and electronics.

Management flaws responsible for Buncefield oil depot disaster in 2005

POLLUTION Management failings were the root cause of Britain's most costly industrial disaster, according to a new report from the Health and Safety Executive and the Environment Agency on the fire at the Buncefield Oil Storage Depot in December 2005.

Although failures of design and maintenance in both overfill protection systems and liquid containment systems – a bund retaining wall around the tank and a system of drains and catchment areas – were the technical causes of the initial explosion and the seepage of pollutants to the environment in its aftermath, the report states management failings were the real cause of the disaster.

The report, which draws on previously unreleased information, reveals that: the systems for managing the filling of oil tanks were both deficient and not fully implemented; there was unsustainable pressure on those responsible for managing the receipt and storage of fuel, which was made worse by a lack of necessary support and other expertise; keeping operations going was more important than safe processes, which did not get the attention, resources or priority they required; and there were inadequate arrangements for containment of fuel and fire-water to protect the environment.

The Buncefield explosion is the largest peacetime fire in Europe and lasted five days. Last year, five companies – Total UK, British Pipeline Agency, Hertfordshire Oil Storage, Motherwell Control Systems and TAV Engineering – were fined £9.5 million for their part in the incident, including £1.3 million in fines for pollution offences, which is a record for a single incident in the UK.

Defra's rolling review of its regulation

Defra is taking stock of its entire regulatory portfolio

REGULATION Defra is exploring the potential for standards and certification to play a larger role in waste regulation and enforcement, and reduce the "burden" imposed on business by the department as part of the coalition government's review of red tape.

In June 2010, the then-new business secretary, Vince Cable, outlined an action plan that included setting up a regulatory policy committee to examine new laws to ensure they do not impose too high a cost on businesses, and introducing a "one-in, one-out" principle or regulatory balance, so that new "red tape" is only brought in when reductions are made to existing regulation.

Unlike other Whitehall departments, Defra is engaged in a rolling programme of reviews to inform its position on one-in, one-out, according to a new report from the National Audit Office. "Defra is reviewing all of its stock of regulation in order to identify opportunities to reduce regulatory costs in order to offset the cost of proposed new regulations. Other departments are not [doing this but] should consider such a review," it says.

The environment department, however, is not best placed to significantly reduce regulatory burdens: 70%–80% of its regulations originate from the EU, while its regulatory stock, although one of the biggest, only accounts for about 3% of the government's net administrative burden on business and civil society. "Defra doesn't really have the scope to make a big impact on the regulatory landscape," says Martin Baxter, director of policy at IEMA. "Nevertheless, it's a good opportunity to take stock: to see what is and isn't working well in terms of adding value and protecting the environment in an appropriate and proportionate way."

One of the first areas of focus is waste regulation, and Defra is currently working with the Department of Business, Innovation & Skills (BIS) on a range of proposals as part of this review. BIS has asked the British Standards Institution to assess existing standards and produce a roadmap to show how businesses can take greater responsibility for performance and how certification or permitting can reflect the level of assurance required to demonstrate compliance. For its part, Defra has instructed the Environment Agency, working with the UK Accreditation Service and other accreditation bodies as well as businesses, to develop a strategy for how companies can earn more freedom from regulatory inspection.

Internally, Defra officials are receiving training and guidance on how to improve the quality of impact assessment and to encourage them to develop non-regulatory approaches.

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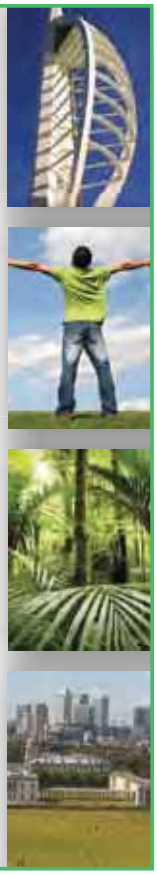

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Short cuts

GHG emissions linked to flooding in 2007

Greenhouse-gas (GHG) emissions due to human activity substantially increased the odds of damaging floods occurring in England and Wales in autumn 2000, according to new research from the University of Oxford. The study, the first of its kind to model explicitly how such rising GHG concentrations increase the odds of a particular type of flood event in the UK, found a two-in-three chance that the odds were increased by about a factor of two or more. Although these floods, which caused £1.3 billion worth of damage, could have occurred without GHG emissions, the study reveals that such discharges can now be blamed for increasing the odds of floods occurring at that time. "Whether or not a flood occurs in any given year is still an 'Act of God' but we are beginning to see how human influence on climate may be starting to load God's dice," commented Professor Myles Allen, of the university's Department of Physics and School of Geography and the Environment, and a co-author of the study.

Watchdog critical of sustainability plans

New plans to embed sustainability across Whitehall and build a "greener" government have been described by Will Day, chair of the independent environmental watchdog the Sustainable Development Commission (SDC), as "lacking ambition" and "vague" on how the government will make sustainable development the core of its policies and how departments are run. The proposals follow the coalition government's decision, last July, to withdraw funding from the SDC, which, since 2000, has been advising government on sustainability. The government claims the package of measures will guarantee that government policies have been "sustainability-proofed". Day, however, criticised the absence of the "five principles of sustainable development", including living within environmental limits, that the SDC had employed to assess whether or not a policy delivery is sustainable.

Acorn scheme to continue despite new standard

MANAGEMENT IEMA has confirmed that its Acorn scheme will continue despite the recent publication of ISO 14005:2010, which is similarly designed to help organisations, particularly small and medium-sized enterprises (SMEs), adopt a phased approach to developing and implementing an environmental management system (EMS).

The emergence of 14005 had raised concerns about the future of BS 8555:2003, which the Acorn scheme is based on. However, James Thorne, senior adviser at IEMA, says the two can coexist and that the institution has no plans replace Acorn with 14005.

He says IEMA did a "mapping exercise" last year to identify the similarities and differences between 8555 and 14005, and concluded that the former should remain the base standard for Acorn.

"8555 is a logical approach; you work through the process and can step off on the way, getting recognition for what you've already achieved [staged certification]. 14005 is not as straightforward, and is merely guidance on getting from A to B with no acknowledgement of reaching milestones along the way," says Thorne.

Importantly for the immediate future of 8555 and Acorn, CEN, the European Standards Board, rejected adopting 14005, meaning that national standards bodies such as BSI can choose whether or not to adopt the international standard or continue to use the national standard.

The UK voted against the adoption of 14005 at the ISO meeting – as did a number of other countries, including the US, France, the Netherlands and New Zealand – on the basis that it is inferior to 8555.

ISO says the purpose of 14005 is to provide guidance for organisations on the phased development, implementation, maintenance and improvement of an EMS. 14005 includes advice on the integration and use of environmental performance evaluation techniques.

More than 640 organisations have so far been through the Acorn scheme. Almost 160 organisations are currently on the Acorn register, having reached various stages in the process.

Consent for Bristol bioenergy plant rests on fuel sustainability

PLANNING The sustainability of the fuel to be used by a proposed bioenergy plant can be a material consideration in the planning consent decision, according to the secretary of state for communities and local government, Eric Pickles. His opinion was issued in response to an appeal against a decision by Bristol City Council to refuse planning permission for the redevelopment of part of the former Sevalco plant in Avonmouth into a 50MW liquid biomass power station by W4B.

At the planning inquiry, in August 2010, the inspector ruled that the source and sustainability of the fuel destined for use in the proposed plant is not a material consideration in the determination of the case. However, Pickles says power stations using bio-liquids derived from biomass are different from other electricity-generating plants, and that the sustainability of the fuels is a material consideration.

In overturning the council's decision and granting planning permission, the secretary of state has imposed two conditions relating to the sustainability of the fuel used by the plant: that it is sustainable and meets the criteria relating to the sustainability of bio-liquids in the EU renewable energy Directive (2009/28/EC); and that the operators submit annual reports to the council on the sustainability of all bio-liquids used as fuel.

The decision means that developers and operators of future renewable-energy projects that use bio-liquids will have to gather more information in terms of the fuels' sustainability. Those developing or operating future fossil-fuel-based energy plants do not have to meet a similar standard even though the plants may have similar nature conservation sourcing issues. W4B hopes to begin construction at the Avonmouth site later this year.

CASE LAW

Lexis®PSL

Supreme planning decision

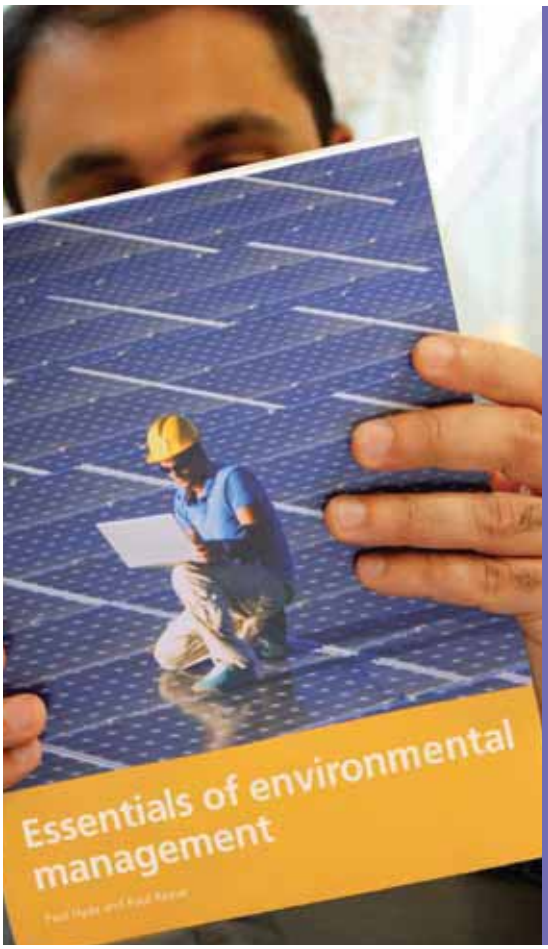
In *R (Morge) v Hampshire County Council* [2010] EWCA Civ 608, the applicant appealed to the Supreme Court concerning a failed judicial review of a local planning authority's decision to grant planning permission for the development of a three-mile roadway that would host a rapid busway service. The unsuccessful appellant was concerned about the impact of the development on several species of European-protected bats that inhabited the area.

Bats are protected under the EU Habitats Directive (92/43/EEC). The Directive obliges every "competent authority" to have regard to its requirements: in particular, taking steps to avoid disturbing protected species. The Supreme Court allowed the appeal to determine two issues regarding Hampshire County Council's decision to grant planning permission for the development. The first issue concerned the exercise of the council's decision and whether there had been a deliberate disturbance of the bats. The central difficulty in the case lay in determining the level of disturbance required to fall within the prohibition and at what stage negative impact becomes detrimental. The court advised that every case has to be judged on its own merits. A case-by-case approach should be adopted and competent authorities will have to reflect carefully on the level of disturbance to be considered harmful, taking into account the specific characteristics of the species concerned and the situation. Even with regard to a single species, the position "might be different depending on the season or on certain periods of its life cycle".

The second issue concerned the extent to which the planners had to have regard to the criminal provisions – it is an offence for any person to disturb protected species under UK regulations. The court decided that, while the planning authority had to have regard to the Directive, this was only so far as the Directive's requirements may be affected by the decision whether or not to grant planning permission.

Even if planning permission were granted by the planning authority, it could not constitute a defence against any criminal prosecution brought by Natural England, for example, for an offending activity. Consequently, if Natural England had expressed itself satisfied that a proposed development complied with the Directive, the planning authority was entitled to presume that was so. It would be wrong to ask a planning authority, in effect, to police the fulfillment of Natural England's own duty. The case provides helpful guidance for local authority planning committees on the extent to which they have to be satisfied that the Directive has been complied with.

Colleen Theron and Deirdre Lyons, LexisPSL, legal expertise online



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NEW REGULATIONS

In force	Subject	Details
26 January NI	Energy	The Electricity (Guarantees of Origin of Electricity Produced from Renewable Energy Sources) (Amendment) Regulations (Northern Ireland) 2011 amend the 2003 Regulations by correcting an error inserted into the 2003 Regulations by the 2010 Regulations with regard to the cancellation of renewable-energy guarantees of origin. www.lexisurl.com/iema6293
14 March	Energy	The Promotion of the Use of Energy from Renewable Sources Regulations 2011 transpose elements of the EU renewable energy Directive (2009/28/EC) by assigning responsibility for certain requirements – such as ensuring public buildings fulfil an exemplary role from 1 January 20120 – in the Directive to ensure they are met. www.lexisurl.com/iema6304
18 March	Energy	The Town and Country Planning (General Permitted Development) (Non-Domestic Microgeneration) (Scotland) Amendment Order 2011 enables a range of microgeneration equipment to be installed on non-domestic buildings without the need for planning permission. The Order amends the Town and Country Planning (General Permitted Development) (Scotland) Order 1992. www.lexisurl.com/iema6305
1 April	Energy/climate change	The CRC Energy Efficiency Scheme (Amendment) Order 2011 postpones the start of phase II of the scheme to enable the government to develop further simplification measures. The Order also corrects errors in the 2010 Order. www.lexisurl.com/iema6295
6 April	Environmental protection	The Marine Licensing (Exempted Activities) Order 2011 exempts certain activities from the need to have a marine licence under Pt 4 of the Marine and Coastal Access Act 2009. www.lexisurl.com/iema6300
6 April	Environmental protection	The Marine Licensing (Fees) (Scotland) Regulations 2011, Marine Licensing (Consultees) (Scotland) Order 2011, Marine Licensing (Register of Licensing Information) (Scotland) Regulations 2011 and Marine Licensing (Register of Licensing Information) Regulations 2011 form a package of measures to introduce marine licensing under the Marine (Scotland) Act 2010 and the Marine and Coastal Access Act 2009. www.lexisurl.com/iema6301 www.lexisurl.com/iema6299 www.lexisurl.com/iema6302 www.lexisurl.com/iema6303
6 April	Marine pollution	The Marine and Coastal Access Act 2009 (Amendment) Regulations 2011 ensure the government can continue to issue permits for the disposal of dredged material by harbour authorities. www.lexisurl.com/iema6298
1 May	Built environment	The Building (Scotland) Amendment Regulations 2011 amend the 2004 Regulations and implement a new standard requiring all new buildings to have a statement of sustainability "label" fixed to the building. www.lexisurl.com/iema6294
1 June	Energy	The Electricity Act 1989 (Requirement of Consent for Hydro-electric Generating Stations) (Scotland) Revocation Order 2011 revises the consents threshold for hydro-electric generating stations as the current levels act as a barrier to Scotland achieving its target to generate 80% of its electricity from renewable sources by 2020. www.lexisurl.com/iema6296
25 June	Environmental protection	The Environmental Liability (Scotland) Amendment Regulations 2011 partly implement the EU Directive on the geological storage of CO_2 (2009/31/EC). The Regulations also amend the 2009 Regulations. www.lexisurl.com/iema6297

LATEST CONSULTATIONS

Closing date: 10 April

Sustainable development

The **European Commission** plans to publish by the summer a communication for the 2012 United Nations Conference on Sustainable Development (Rio+20). The communication will set out the commission's objectives and possible concrete deliverables for Rio+20 and it is seeking the views of stakeholders.
www.lexisurl.com/iema6309

22 April

Resource efficiency

As part of its development of a roadmap for a resource-efficient Europe (a key feature of the Europe 2020 strategy), the **European Commission** is seeking the views of businesses and other stakeholders on resource use, scarcities, current obstacles and major areas of concern; policy areas that could be included in the roadmap; and options for encouraging individual shifts of behaviour. The consultation compliments a separate consultation on developing a sustainable bio-based economy – which integrates the full range of natural and renewable biological resources, including land and sea resources, and biodiversity and biological materials (plant, animal and microbial) – across the EU by 2020. This second consultation ends on 2 May.
www.lexisurl.com/iema6308
www.lexisurl.com/iema6310

28 April

Energy

DECC is consulting on proposed changes to the Paris and Brussels Conventions on nuclear third-party liability. The proposals would increase the categories of damage for which operators are liable, including damage related to the environment, widen the geographical scope of those that are eligible to claim compensation; and significantly increase the financial liability of the operator.
www.lexisurl.com/iema6311

29 April

GHG reporting

The EU's system for reporting on greenhouse-gas emissions and implementing the Kyoto Protocol is regulated by two pieces of legislation: the Monitoring Mechanism Decision (280/2004/EC) (MMD) and the Implementing Decision (2005/166/EC). The **European Commission** is now consulting on revising MMD to improve it and align it better with recent EU legislation and UNFCCC decisions.
www.lexisurl.com/iema6451

5 May

Noise

The **Welsh Assembly government** is seeking views on its proposed approach to identifying "quiet areas" in large urban areas (Annex A) and priority areas with high levels of road traffic and railway noise (Annex B). Under the plans, once an area is confirmed as an official quiet area, it will get more noise protection under statutory planning guidance, while Annex B specifies what checks will be carried out on Candidate Noise Action Planning Priority Areas.
www.lexisurl.com/iema6306

6 May

Natural hazards and infrastructure

The Critical Infrastructure Resilience Programme was established in 2009 and aims to improve the resilience of critical infrastructure and essential services (CIES) to severe disruption from natural hazards. The **Cabinet Office** is now consulting on a draft guide for infrastructure operators, emergency services, industry groups and regulators, to help them work together to improve the resilience of CIES.
www.lexisurl.com/iema6454

11 May

Marine

The **Welsh Assembly government** (WAG) is consulting on how it intends to develop marine planning in Wales in line with its powers and responsibilities under the Marine and Coastal Act 2009. WAG aims to have a national plan for the Welsh inshore area and a national plan for the Welsh offshore area in place by 2012–13.
www.lexisurl.com/iema6307

EVENTS CALENDAR

Date	Course	Location and details
31 March 2011	Sustainable purchasing and supply summit	QEII Conference Centre, London www.lexisurl.com/iema6072
4–5 April 2011	Where now for air quality management?	Dunchurch Park Hotel, Dunchurch CV22 6QW www.lexisurl.com/iema6291
6–7 April 2011	Water and environment 2011: CIWEM annual conference	Olympia Conference Centre, London www.lexisurl.com/iema6465
11–12 April 2011	Energy efficiency for business: effective carbon strategy for a sustainable future	Copthorne Tara Hotel, London www.lexisurl.com/iema6292
12–13 April 2011	Offshore wind power infrastructure summit	CBI Conference Centre, London www.lexisurl.com/iema6067
3–4 May 2011	10th annual responsible business summit	Novotel London West www.lexisurl.com/iema6073

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Rarer still?

With access to some important natural resources becoming harder, businesses need to improve efficiency, reports Paul Suff

Natural resources vital for the production of mobile phones, computer monitors, lasers and other electronic devices, as well as clean-energy technologies such as wind turbines, low-energy light bulbs and electric cars, are getting scarcer, placing resource efficiency and developing alternatives high on the agendas of both business and policymakers.

A number of rare earth elements (REEs), including terbium, used in low-energy light bulbs, and neodymium, used in direct-drive wind turbines and in drive motors for hybrid and electric vehicles, appear on a list of critical raw materials in a 2010 EU study[1]. Supply risk is highest for REEs, says the study, although some other strategically important metals, including lithium, indium and rhenium, are also becoming more expensive and harder to source as demand rises.

Supply and demand

The term "rare earth" is actually a misnomer: they are not rare at all, and are found in low concentrations throughout the Earth's crust, and in higher concentrations in numerous minerals. However, demand is at risk of outstripping current accessible supply. "REEs are not absolutely scarce. We're not going to run out. It's a question of access," explains Nick Morley, director at research and consulting company Oakdene Hollins.

17
The number of rare elements

Emerging technologies are driving demand for such raw materials. Take neodymium, for example. The electric motors in each Toyota Prius, the world's most popular hybrid car, require around 1kg of neodymium. Toyota has sold about two million Prius cars since the model went on sale in 1997. However, the number of hybrid/electric vehicles will soar as governments seek to decarbonise surface transport. In the UK alone, 60% of new cars and vans in 2030 – that's around 1.5 million vehicles a year – will be electric models, reports the Committee on Climate Change. Production of neodymium in 2006 was 16,800 tonnes, but the EU estimates that demand from emerging technologies, notably hybrid and electric vehicles, will rise by 2030 to 27,900 tonnes.

Another example is indium. A by-product of zinc and other base metals, indium is commonly now used in touch screens and also in the synthesis of the semiconductor copper indium gallium selenide, which is increasingly used in the manufacture of thin-film solar cells. The EU study reports that 581 tonnes of indium was extracted in 2006, but that annual demand from emerging technologies will reach 1,911 tonnes in 2030. A recent study[2] for Defra by AEA included REEs and indium on its list of important resources at risk.

Global demand for REEs is forecast to grow at up to 11% a year between now and 2014, driven largely by the rate of growth of low-carbon technology markets, but while demand is soaring, there is increasing uncertainty over future accessibility. Worldwide consumption of REEs in 2008 was 130,000 tonnes. Up until the 1970s the Mountain Pass mine in California was the largest rare earth mine. It closed in 2002. China currently has a monopoly of low-cost production of both REEs and indium. It now supplies at least 95% of all REEs.

According to Morley, China expanded speciality mining in the 1980s, undercutting producers in the West and elsewhere because of its relatively cheap labour, few environmental controls (see panel, p.20) and the high purity of its raw materials. "That picture is now changing," he says. "China wants to conserve resources for itself." The strategy of the Chinese government is shifting from being an exporter of commodities and ores to supplying the market with high-value-added products. To support its own economic development, Chinese export quotas of REEs fell 40% in 2010, which is pushing up prices.

Over the past century, improvements in extraction and refining technologies saw real prices for commodities, such as metals, fall, even though ore grades declined and accessibility became more difficult. "Now REE prices are being driven up by quota-induced shortages and by strong global demand for these metals so, at least for now, the previous trend to lower prices looks to be reversed," says Morley.

Suppliers of REEs other than China are emerging. The current high price for commodities makes it viable to revive former mines – including resuming mining REEs at the Mountain Pass mine – and explore possible new mining operations, although these can take up to 10 years to develop. The UK does not have any deposits of REEs, but several rare metal mines are reopening, including the Hemerdon mine in Devon, which is operated by Wolf Minerals and has one of the largest tungsten and tin resources in the western world, and the South Crofty mine in Cornwall, where indium has recently been discovered.

In 2006, production of neodymium was **16,800 tonnes**

By 2030 the EU estimates that the demand for neodymium will rise to **27,900 tonnes**

Business strategies

Raw material scarcity is increasingly regarded in many boardrooms as a key risk. AEA spoke to a number of industry representatives for the Defra report. "What is clear is that the issues concerning material supply is driving business to act," says Phil Dolley, resource efficiency director at AEA Group and one of the authors of the report.

There are four main responses to material scarcity: negotiate privilege access, stockpile, substitution, or resource efficiency. Businesses are generally adopting a combination of these strategies.

The response of aero-engine business Rolls-Royce, for example, includes metal recycling, product redesign and raw material purchases (see panel, right). Toyota's reply is also multifaceted. Dolley at AEA explains that a sister company of Toyota (called Toyota Tusho) is securing supplies of lithium used in the batteries for electric vehicles through a partnership with the Australian-listed company Orocobre. The deal will see Orocobre develop resources of lithium-potash in Argentina. The automotive manufacturer is reportedly also developing electric motors that are no longer dependent on REEs. And, as a Japanese company, Toyota would also have access to its government's stockpile of strategically important metals.

In the low-carbon sector, some companies are either resisting using REEs altogether or reducing their product's reliance on such materials. Tesla, the US electric vehicle manufacturer, does not use REEs in its cars. Currently, around 4% of new offshore wind turbines use a magnetic drive system containing REEs such as neodymium. This figure is anticipated to rise to 15–25% by 2015. However, not all wind turbine manufacturers have replaced conventional high-speed generators with low-speed ones, which eliminates the need for a gearbox but uses more REEs.

Unlike some of its competitors, Vestas, the Danish company that is the largest turbine manufacturer in the world by market share, does not produce direct-drive turbines. Although he did not rule out Vestas adopting direct-drive technology at some point in the future, the company's director of communications, Michael Holm, says: "A direct-drive turbine uses 10 times more rare earths per MW of energy generated than a turbine with a standard generator. A permanent magnetic generator uses around 20kg of rare earths per MW of energy produced, so a 3MW turbine contains 60kg." He also confirms that Vestas has no short-term supply issues.

Case study: Rolls-Royce

Rolls-Royce, the global power systems company, is one firm that is determined to make an effective response to environmental concerns by reducing the impacts of both its business activities and its products as well as by developing entirely new low-emission and renewable-energy products. It is tackling the issues of resource scarcity and efficiency through metal recycling, product redesign and raw material purchases. These measures all feature in the Derby-based company's strategy to manage supplies of key raw materials, with a focus on improving sustainability.

Each year, Rolls-Royce deals with thousands of tonnes of metallic by-product or revert, which is no longer termed scrap metal. "We recognise that recycling will help the sustainability of limited resources," says Paul Nash, global commodity leader for revert at Rolls-Royce. The company has established a Global Revert Consortium, involving its own manufacturing facilities, overhaul shops, suppliers and partners in recycling metal turnings, foundry waste and unserviceable engine parts, which contain rare metals. Agreements with key suppliers also require them to recover revert from machining and forging processes to retain the metal within their supply chain.

"We're seeking to maximise the recovery of rare and expensive metals. The more we can recover, the less virgin material we have to buy," explains Nash. He describes the process as a "closed-loop" one. "We employ a specialist third party to securely segregate, collect and process revert from our facilities and suppliers around the world. Material undergoes several specialist processes to recover precious metals, and by investing the time and effort we not only recover rare metals, but we clean up the parent metal so it is suitable for re-melting into the same alloy."

Recovery also means that Rolls-Royce pays less for raw materials. "We require thousands of tonnes of mill products each year and as part of the purchasing strategy we pledge to return revert to the mill, say 20% of the purchased weight. By doing this, mills can rely on us as a source of their raw material and we are not exposed to as much market price volatility and metal scarcity," says Nash.

The revert programme has been operating for about 10 years, but has become a core strategy for Rolls-Royce over the past five years, as the global demand for raw materials has grown and metal prices have increased. "It began with recycling a few hundred tonnes of titanium, but now comprises several thousand tonnes and a significant number of alloys and closed-loop arrangements," comments Nash.

In addition, designers at Rolls-Royce are working on reducing the use of rare and expensive elements. For example, the company's designers have developed alloys that halve the amount of rare earth elements required in some of the company's jet engine parts.

Environmental impacts

Improving resource efficiency also has environmental benefits, as the environmental impact of mining rare earth materials is considerable. As Cindy Hurst points out in her 2010 report[3] on the rare earth elements (REEs) industry in China, the mining and processing of REEs, if not carefully controlled, can create significant environmental hazards. She cites an article published by the Chinese Society of Rare Earths, which claims: "Every tonne of rare earth produced generates approximately 8.5kg of fluorine and 13kg of dust; and using concentrated sulphuric acid high-temperature calcination techniques to produce approximately one tonne of calcined rare earth ore generates 9,600 to 12,000 cubic metres of waste gas containing dust concentrate, hydrofluoric acid, sulphur dioxide, and sulphuric acid, approximately 75 cubic meters of acidic wastewater, and about one tonne of radioactive waste residue (containing water)."

Furthermore, according to research conducted within Baotou, in Inner Mongolia, where China's primary rare earth production occurs: "All the rare earth enterprises in the region produce approximately 10 million tonnes of all varieties of wastewater every year", and that most of that wastewater is "discharged without being effectively treated, which not only contaminates potable water for daily living, but also contaminates the surrounding water environment and irrigated farmlands".

8.5kg fluorine and 13kg dust is created for every tonne of rare earths produced in China

Reuse and recycling have a significant role to play in improving resource efficiency as they reduce the demand for virgin materials, something that will also limit the environmental damage associated with extraction. Redundant electronic equipment, for example, contains very high proportions of rare earths in relation to those found in naturally occurring deposits. As environment commissioner Janez Potocnik said recently when calling for EU member states to improve recycling rates for waste electrical and electronic equipment (WEEE): "My old mobile phone contains gold, platinum, palladium and copper – all resources that we have too little of in Europe. A tonne of these handsets would contain about 280 grams of gold, 140 grams of platinum and palladium and 140 pounds of copper. This is not waste that we should bury or burn; it is a resource that we should respect." Morley at Oakdene Hollins highlights another resource efficiency measure. He says that although resource efficiency must include minimising use and recycling, product-life extension is also necessary. "Things like smartphones need to go into the secondary market for reuse and remanufacture, even if that is eventually followed by recycling," he says.

The way forward

While scarce raw materials pose risks to business continuity, alternative strategies are not without their own difficulties. Substitutes based on more secure metals are being developed, increasingly facilitated by nanotechnology, says a 2008 report by the Resource Efficiency Knowledge Transfer Network (REKTN – now the Environmental Sustainability KTN). But substitution of a rare material is only a solution where an abundant one can replace it. There is no benefit if the substitute is also hard to source. The REKTN report found, for instance, that automotive manufacturers are increasingly substituting palladium for platinum in catalytic converters even though the former is itself among the world's most insecure materials. Also, developing suitable substitutes can take time, and, at present, many of the alternatives to rare earths that are available are not as good. There is no substitute for the neodymium in rare earth magnets that give a similar level of performance, for example.

Recycling, too, is not without its problems. "REEs are only ever used in very small quantities and can be difficult to recover. Specialist recovery is required and that is expensive," says Morley. He believes that designing products for easy disassembly would help, suggesting that amending producer responsibility legislation by introducing more sophisticated targets could support more recycling by encouraging better design. Europe should be well positioned to recover such materials because of the WEEE Directive (2002/96/EC), but only 20% of the WEEE generated in the EU is currently recycled. There are plans to strengthen the Directive, however. MEPs recently voted for new targets, including a 50–75% recycling target (depending on category) and support a new 5% reuse goal with the aim of reclaiming valuable raw materials for e-waste. Like Morley, MEPs also want manufacturers to create products that are easier to recycle.

Despite potential difficulties, resource efficiency is the way forward. The EU's raw materials initiative, which was launched in 2008, and the European Commission's recent communication on tackling the challenges in commodity markets and on raw materials both urge resource efficiency. In the UK, Defra estimates firms could save more than £6.4 billion a year by making simple changes to use resources more efficiently and help protect the natural environment. "Businesses that don't use resources more efficiently will miss out on potential commercial opportunities and will lose out as prices for scarce commodities rise," says the environment department.

The UK is currently a relatively small importer of REEs, but the manufacture of low-carbon technologies is seen as a key area of future growth for the UK and will lead to higher demand. Several wind turbine manufacturers have announced plans to establish facilities in the UK, while Nissan has made Sunderland its base for European production of its electric car, the Leaf, and the lithium-iron batteries to power the vehicle, and Toyota started producing a petrol/electric hybrid version of its Auris hatchback in 2010 at its Burnaston factory in Derbyshire.

1 www.lexisurl.com/iema6247.
2 www.lexisurl.com/iema6246.
3 www.lexisurl.com/iema6248.

Fingertip control

In part two of her series, **Alison Smith** explores the ever-growing world of environmental software

More and more businesses are abandoning their overloaded spreadsheets in favour of commercial software to help manage their environmental impacts. This trend is driven by the increasing complexity of environmental regulations and reporting needs as well as the potential for software to help cut costs.

More than 200 large companies bought carbon management software in 2010, according to Groom Energy, but many are still hesitating. A recent survey by the Greenhouse Gas Management Institute showed that more than half of respondents were still using spreadsheets. Interestingly, those using software tended to be those who classified themselves as having "expert" levels of knowledge on greenhouse-gas (GHG) management.

Half of organisations polled are still using spreadsheets, but those using software are the ones with "expert" knowledge on GHG management

More than carbon

Environmental software has been around since the 1980s, with early products focused on compliance with health and safety regulations in the traditional "polluting" industries such as chemicals, iron and steel, and energy.

But with rising concern over climate change during the last decade, a new class of software has emerged aimed at measuring and managing GHG emissions. At first this was driven by regulations such as the EU emission trading scheme (ETS), covering large energy users, but the scope has gradually extended to target firms of all sizes and in all sectors.

Vendors from a wide variety of backgrounds have developed the new class of carbon management software. Some are carbon specialists – new start-ups, academic groups or carbon consulting firms moving into software. Others include purveyors of traditional environment, health and safety (EHS) software, energy and asset management software or corporate social responsibility reporting tools who

200
companies purchased carbon management software in 2010

have added carbon management modules to their existing software suites. And large business software vendors such as Microsoft, CA, SAS and SAP are now getting in on the act.

Despite the frenzied outpouring of new carbon management tools onto the market over the last few years, the realisation is now dawning that carbon is just one part of the wider issue of sustainability. This has undoubtedly been prompted by a steady increase in the costs of waste disposal, water use and other resources, as well as by greater demands for transparency and corporate responsibility by both customers and investors.

Many tools now include water and waste as well as carbon, and there is a trend towards more integrated reporting of environmental, social and economic indicators.

Below we take a look at the main types of tool on offer. Examples of key vendors and products are given but the list is illustrative, not exhaustive.

Basic carbon calculators

A huge number of free carbon calculators are available on the internet, aimed at households or small businesses. These are often provided by non-governmental organisations or government agencies, although some are from consultancies.

Generally, the user is asked to enter annual gas and electricity use, plus either transport fuel use or the mileage travelled in different vehicles (car, plane, train etc). This may be supplemented by questions about recycling, waste generation, food consumption, paper use or the adoption of energy-efficient lights or appliances.

Simple calculators are a great way to get a quick and easy estimate of the carbon footprint of small companies, and can also give a rough idea of the potential to achieve cost and carbon savings. Some go further. The SMEasure tool from Oxford University, for example, allows users to plot their gas and electricity use against weather data, and benchmark their own energy use against similar buildings. A tool provided by government agency WRAP allows the user to see how much money and carbon could be saved by cutting energy and resource use, and Forum for the Future has tools to help with sustainable procurement. Larger companies, however, and those with more complex impacts, will need a more sophisticated solution.

Managing carbon

These tools have been mainly developed over the past few years, and are referred to by a variety of descriptions including carbon footprinting, carbon accounting or carbon management. They are typically set up to measure carbon emissions to comply with legislation such as the ETS or the UK's Carbon Reduction Commitment Energy Efficiency scheme, and to help with voluntary reporting initiatives such as the Carbon Disclosure Project.

Vendors come from mixed backgrounds. Some originated as carbon consultants – examples include Best Foot Forward, which still offers consultancy in parallel with its software, and Greenstone Carbon Management, which has switched entirely to software provision. Some are new start-ups such as Carbon Hub, CA ecoSoftware, Carbon Guerrilla, CloudApps, CSRWare, ENXSuite, Hara and Verteego. CarbonOps, which has developed its CarbonView software, came from a carbon trading background.

Many of the tools in this category are aimed at large businesses, although several vendors have products affordable for smaller companies. Prices range from a free offering for small organisations (from Best Foot Forward's product range) to five- or six-figure prices from companies such as Hara, who target multinationals. Most products are now offered as software as a service, with an annual fee rather than an upfront payment and with software hosted and maintained by the vendor.

As well as carbon measurement and reporting, most of these tools contain features to help reduce emissions. These might include setting targets, forecasting, costing different options for reducing emissions, scenario analysis, monitoring progress and managing workflow. Although the primary focus of these tools is carbon and other GHGs, many also assess waste disposal and water consumption, and the Hara tool can include other resource use, such as paper consumption.

Hara actually refers to its product as an environmental and energy management solution. Nick Martin, managing director of Hara in Europe, the Middle East and Africa, says that the product provides a "single system of record for energy, waste, water and CO_2" among others things.

Such software or systems leads to some overlap with the next category, as tools with energy, carbon, water and waste capabilities often market themselves as "sustainability" software. Other examples include CA's ecoSoftware and CSRWare. For the purposes of this report, however, we define "sustainability tools" as those which include a wide range of economic, social and environmental indicators.

Sustainability and CSR

Sustainability and corporate social responsibility (CSR) reporting tools have evolved to help companies collect and publish data for their CSR or responsibility reports and for other initiatives such as the GRI (Global Reporting Initiative) and the Dow Jones Sustainability Index. The key distinguishing feature of these tools is that they allow reporting of a wide range of indicators, which may include economic and social metrics, such as employment diversity, charitable donations and tax payments as well as environmental impacts, for example air pollution and land use. Often these indicators can be user-defined. Today, of course, GHGs are an essential part of CSR reporting, and are included in all these tools. However, as management of carbon emissions tends to require more detailed data gathering and analysis than

reporting of, say, employment statistics, some vendors provide a separate energy and carbon module. Customers who buy sustainability reporting tools without a carbon module often tend to use them in conjunction with a specialist energy management tool from a different supplier.

Examples include credit360, Enablon's CSR module, SERAM, SoFi by PE International and SAS Sustainability Reporting. A handful of tools fall between this category and the preceding one: they offer a wide range of environmental impacts, but do not contain economic and social indicators. Examples include Sustain4, an environmental benchmarking tool, and Best Foot Forward's ecological footprint tools.

Some of these tools are focused mainly on reporting and communicating with stakeholders, whereas others offer a range of impact reduction functions. This type of tool is popular with customer-facing organisations, such as retail companies or those with a strong brand value, where transparency and image are important.

Environmental compliance suites

EHS software has been developed mainly for heavy industry. It is typically supplied as a suite of modules, which handle compliance with health and safety regulations, record routine and accidental air pollution, monitor the storage and disposal of hazardous waste, report accidental spills and set up emergency response plans. Developers are now adding carbon accounting modules. This is a well-established sector, being the oldest branch of the environmental software industry, and it includes four of the eight companies named as "market leaders" in the 2010 Groom Energy report – Enablon, Enviance, IHS and ProcessMAP – as well as a range of other vendors, including Intelex, CINTELLATE and Perillon.

EHS suites with carbon modules may be the best choice for industrial companies with varied impacts and heavy regulatory requirements, but office-based companies might find that a specialist carbon tool is more appropriate for their needs.

Environmental modules as extra

It is no surprise that large software companies have started to target the booming environmental market. The general approach is to add a carbon accounting module to an existing ERP (enterprise resource planning) package. ERP software tracks resource flows including materials, personnel and finance across an organisation, covering aspects such as manufacturing workflow, purchasing, sales, invoicing, accounting, project management, customer contact, payroll and supply-chain management. The main advantage of these packages is that customers can integrate carbon accounting with other business and financial information. For example, estimates of carbon emissions can be readily derived

Alison Smith is a consultant at Aether, which compiles the Environment Tools Directory

from purchases of fuel and electricity, and carbon taxes or trading information can be linked seamlessly to company accounts.

The downside is that the vendors are not carbon or environment experts. Some have entered the market with the help of specialists. SAP, for example, purchased Carbon Impact, while Oracle partnered with NDevr. Others have developed their own offerings. These include Microsoft Dynamics, SAS for Sustainability and Unit4's Sustain4. Vendors in this category benefit from a very large existing customer base and it will be interesting to see if this can counter their lack of an environmental track record.

Energy, asset and facilities management

Energy and facilities management packages are focused on reducing energy and other utility costs. They are often linked to automatic metering, building energy controls and bill payment systems. Asset management software aims to minimise the cost of deploying and maintaining company assets including buildings and equipment, and is linked to energy management through tracking of energy-using devices such as computers.

Suppliers such as EnerNOC, Johnson Controls, IntegratedFM, Pace, Summit Energy and Verisae have started to add carbon management modules to their software. The EnerNoc suite of solutions, for example, now includes DemandSmart, designed to help organisations reduce electricity use; EfficiencySmart, which claims to help users identify low-cost or no-cost opportunities to achieve savings equal to 15% of addressable energy spend; SupplySmart, which evaluates an organisation's different energy options and advises it on how to obtain the most favourable energy contracts; and CarbonSmart, a carbon accounting application. Similarly, the energy software from Verisae includes supply and demand management tools and a smart meter option.

Even for experts the choice of vendors and products is bewildering. The new Environment Tools Directory lists more than 400 entries

The potential advantage of this type of tool is the ease with which very detailed data on building and appliance energy use can be gathered and analysed, giving great potential to identify opportunities for savings.

Footprinting and LCA

Although the main focus so far has been on company-level carbon footprinting, there is an increasing interest on analysing impacts at the product or process level. Customers want to know which products are "greenest", and manufacturers need to be able to demonstrate their eco-credentials. Large retailers such as Tesco are driving a trend towards eco-labelling of products.

Product-level footprinting is complex and data is in short supply, but software tools are starting to appear on the market. Life-cycle analysis (LCA) tools such as PE International's GaBi can estimate whole-life environmental impacts for a product from manufacture through use to disposal.

Best Foot Forward offers product carbon-footprinting tools and a product development package, while Carbonostics has a tool for assessing the carbon impact of food products.

Verisae and CarbonView and other vendors use supply-chain information to help track carbon at the product level. Foresite Systems has developed GEMS product-compliance software to help the manufacturing sector comply with REACH (the EU Regulation on the Registration, Evaluation, Authorisation and restriction of Chemicals), waste electrical and electronic equipment, or WEEE, Directive, the restriction of hazardous substances or RoHS Directive, the eco-design Directive and the Producer Responsibility Obligations (Packaging Waste) Regulations.

Sector-specific tools

Some sectors have particular requirements that lie outside the scope of generic software tools. Specialist tools have emerged for applications ranging from building design to fleet management and from the water industry to the information technology (IT) sector.

Examples include Best Foot Forward's footprinting tools for aviation, furniture manufacture, publishing, events, packaging, offices and government agencies, and CSRware's GreenIT for managing energy efficiency in the IT industry. Best Foot Forward says its footprinting tools will help identify carbon hotspots and over-dependence on vulnerable resources, while CSRware's claims for its software include helping users to reduce energy consumption and avoid regulatory risk.

Some consultants are developing their own in-house software. An example is coastal engineering consultancy HR Wallingford's HRCAT tool.

Spoilt for choice

Even for experts, the choice of vendors and products in the marketplace is bewildering. The market is young and dynamic, characterised by a constant round of new product launches, takeovers, partnerships and mergers. The new Environment Tools Directory currently lists more than 400 entries (www.lexisurl.com/iema6319).

Selecting the right tool is not easy. The third and final article in our series will provide more detailed guidance on how to find a product with the right features to match your organisation's needs.

Part one of the series appeared in *the environmentalist* in January and focused on why businesses should take advantage of developments in environmental management software.

the environmentalist

IEMA PAY & BENEFITS SURVEY 2011

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A profession on the move

IEMA chief executive Jan Chmiel tells ***the environmentalist*** that the profession is on the cusp of fundamental change

Ask IEMA chief executive Jan Chmiel how environment professionals in business will operate in the future and he describes them as acting as "change agents".

"The way the environment is impacting on organisations is changing and businesses recognise this. It's no longer just about how organisations impact on the environment, there is a growing recognition that the natural environment is increasingly placing limits on how they operate. Businesses will need to change if they are to deal effectively with resource efficiency, ecosystems services and biodiversity as well as manage environment across their whole value chain," says Chmiel. He believes that the change businesses will have to undergo to successfully overcome the environmental challenges facing them going forward provides a unique opportunity for the profession. "The environment is no longer just a reputational issue, nor is it only about doing a few things like compliance and carbon management well," he observes. "It's an increasingly complex and integrated set of issues and managing them will fundamentally change the way organisations create value. What is being recognised is that, in future, the environment will be key to driving value creation *and* competitive advantage. Organisations will no longer be able to manage it in a top-down 'command and control' way; the whole organisation will have to respond to environmental challenges. That will require a wholesale change from within. That's a challenge to the profession. They need to lead the transition."

Equipping the profession with the skills required to effectively exercise that role will be the main focus of IEMA activity over the next few years, he says.

The future

From his conversations with IEMA members and business leaders since becoming chief executive in November 2009, Chmiel has developed a clearer picture of the profession and what IEMA needs to do to put it at the heart of organisational change – a role he believes it is currently collectively finding challenging.

"I've met environmental professionals who are at the top of their game and who are driving change. But that is not the bulk of professionals, so there is a role for IEMA to get the profession to rise to this challenge."

He has discovered a degree of frustration in the business community, which, rightly or

Jan Chmiel is happy to discuss his vision for business and the profession personally with IEMA members and business leaders. Please contact *n.barton@iema.net* to arrange for him to visit your organisation.

wrongly, believes environmental professionals lack the skills to think and communicate strategically. He recounts the example of a drinks company dealing with water scarcity in Africa to highlight this problem: "The company wanted its environmentalists to adopt a more strategic approach. But the environmentalists were focused on the technical aspects of water abstraction rather than fully understanding the wider social and economic implications and working with stakeholders to better manage access."

The flip side is that some environmental professionals are keen to play a more central role, but are unable to because of organisational inertia. He says there is a perception among some environmental professionals that there is a "green ceiling", where the focus is only on compliance and is linked to health and safety. "I talked to a young IEMA member in the construction industry," recalls Chmiel. "She was passionate about the environment but felt stuck in a compliance role. She believed her direct boss didn't understand the impact or the importance of her role. I pointed out to her that the global sustainability director at one of the biggest construction firms in the world is on the IEMA board, so it is possible in her industry to make a difference. What she has to do – and this is where the role of IEMA is crucial – is to understand what is going on and how she can help her organisation change. She needs to look at organisations where change is being made, where things are altering. It is really up to them to start the dialogue."

We had around 2,000 responses to our GHG reporting survey and you realise that if IEMA facilitates discussion it is of enormous value

His discussions also reveal that some organisations do not make the most of their in-house environmental expertise. "I've had conversations with senior people about sustainability and they talk about environmental issues, but they do not make the link between the two. They'll talk about water, carbon etc, but when I ask about the environmentalists in their own organisation, they say their focus is compliance," he says. "It's strange: they have environmental issues and have specialists sitting somewhere in their organisation that know about these things, but they don't use them. That's why IEMA needs to raise the profile of the profession."

And Chmiel has encountered environmental professionals who have switched from compliance to a sustainability role who feel uncomfortable in their new position because they lack some of the necessary skills. "They often do not have the social and economic knowledge or the communication and influencing skills to be able to talk to their peers and superiors in a way that demonstrates business acumen. Again, IEMA has a role to play in equipping them with the necessary skill set."

IEMA's supporting role

So, what is IEMA's strategy to place the profession at the heart of change? "There are three elements to our approach: frameworks, facilitation and leadership. They are key to any membership body but even more so when there is such a need for movement and change," explains Chmiel.

The first strand, frameworks, has several aspects, including putting in place a structured horizon-scanning process that involves IEMA members looking at what they think will be important to their organisations over the coming months and years. IEMA is also developing – with members, training providers and businesses – the first competency framework for the profession. "This is not an academic exercise; organisations are asking for this. I get telephone calls from people in industry asking for IEMA to develop a competency framework for them. Creating the framework will give members a clear picture, given their own aspirations, of how to get from A to B," comments Chmiel. He believes that professional development is vital if environmental professionals are going to succeed in making a difference and fill important roles. "There are jobs and roles to be created that do not currently exist. The chief sustainability officer role wasn't a job three or four years ago." The third framework involves placing IEMA activities in one of three themes: sustainable business practice, impact assessment, and the natural environment.

He finds the second strand of IEMA strategy, facilitation, particularly exciting. "There are now so many ways to reach people. The IEMA website and the new-look *environmentalist* is part of that, but there are other channels, such as social networks. If you go to the IEMA LinkedIn page, there are really interesting conversations taking place," he observes. Chmiel explains that the institute must focus on facilitating input, and says the organisation's 2010 survey and report on greenhouse-gas reporting was an excellent example of how this should work: "We had around 2,000 responses and you realise that if IEMA facilitates a discussion on an important topic it is of enormous value to policymakers."

Leadership is the final element of the three-pronged approach IEMA is pursuing to raise the profile of the profession. Chmiel describes this as IEMA being the collective voice of the profession on both the national and international stage. "If you talk to sustainability directors, yes, they are interested in compliance issues at a national level, but they are also thinking about how they manage their global businesses. IEMA also has to adopt that mindset."

So, what changes will IEMA members see over the next year or so and how can they get involved? "More opportunity to contribute, shape and learn. The competency framework will be launched and will help members develop their own competencies to progress their career and move the profession forward. But, if you want to get into a leadership role, you don't just need training. You also need to network effectively and read *the environmentalist*, because it is now much more integrated with IEMA's vision for the profession. This year we'll be working closely with on our regions. So if you want to get involved, become active. Join a regional group, contribute to our surveys. There are plenty of things you can do. Our volunteers are always our first port of call."

Leading the change

In his opinion, business leaders now recognise the importance of sustainability and that it is forcing their organisations to change, but Chmiel says that at the moment they do not automatically look to environmental professionals to deliver that change. "That needs to change," he says. "We, both as a body and as a profession, need to ensure that the experts, the environmental professionals, are the ones business leaders turn to. If we are not up to the challenge, then there is a danger that the environmental sustainability agenda in businesses will be driven by somebody else, which in the long run will benefit neither the organisations nor the environment!"

IEMA PAY AND BENEFITS

SURVEY 2011

We report on the fourth annual survey of members' pay and benefits, which attracted more than 2,000 responses

The Institute of Environmental Management and Assessment (IEMA) annual members' salary survey was carried out in December 2010 and January 2011 and 2,100 environmental managers, consultants and researchers throughout the UK provided pay and conditions data (for more details of the sample, see panel on p.VII).

Respondents to the survey were asked to provide details of their 2010 salaries plus any extra earnings, such as bonuses, overtime and commission payments. These have been combined in most analyses to provide a comparison of total annual income from employment. Where possible, the tables show both the mean and median figures for the earnings data, but where space only allows one figure we have used the median (the midpoint in the range of figures), which is preferred by pay statisticians as it reduces the influence of a few very high or very low figures, which can distort the average.

Key findings

- Environmental practitioners in the mining and quarrying, financial services, and transport and logistics sectors are, on average, the best paid.
- Average earnings are highest in the southeast of England, but the differential is small between most of the UK's regions.
- There is a strong, positive relationship between an individual's annual income from employment and their IEMA membership level.
- Men's earnings are, on average, almost one-quarter (24.2%) higher than women's, although this partly reflects different age profiles.
- Despite the economic recession, only a minority of environmental practitioners report pay freezes (37.2%) or cuts (7.1%).
- The majority of respondents have received a pay rise over the past 12 months, commonly between 2% and 3% so below the current rate of inflation.
- Almost half of environmental practitioners (46.5%) say their workload increased because of the continuing recession in 2010.
- Around one in six environmental professionals (17.5%) works more than 45 hours a week.

EARNINGS BY

SENIORITY IN SECTOR

Almost half the survey sample (47% of respondents) are employed in business and industry, excluding consultancy, which accounted for another 30.9%. Nearly one in five (18.4%) works in the public sector, while academic or research institutions employ 3.6% of those polled.

Figure 1 shows the median total annual earnings by broad job level in both the private and public sectors and reveals, predictably, that higher earnings are associated with more senior positions across all sectors.

The education sector, including academic research institutions, follows this trend over the researcher-to-professor progression, with median salaries between that of a middle manager and coordinator/specialist in private sector business. The figures for education earnings need to be treated with more caution than the other sectors since the samples are very small, especially for the more senior posts.

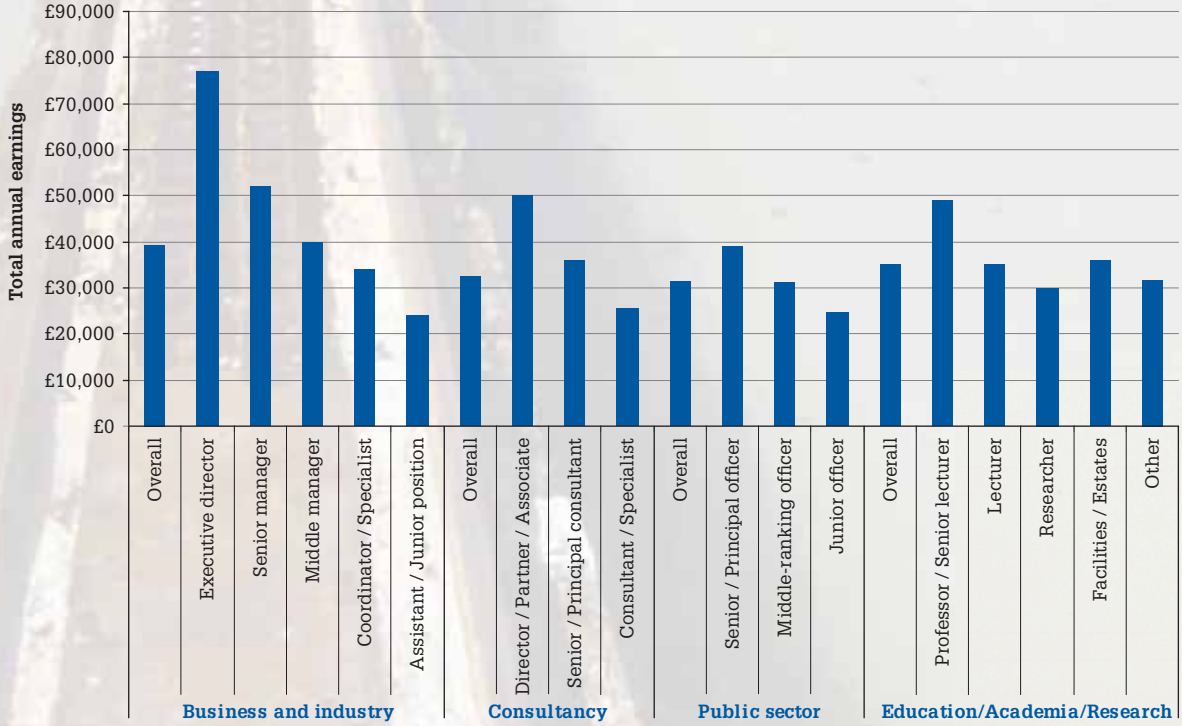
Table 1 reinforces the picture suggested by figure 1: that practitioners in the private sector, whether they are employed by consultancies or manufacturing or service businesses, have higher total earnings than their public sector counterparts. This is in line with official data; the government's annual survey of hours and earnings found a median salary of £24,695 for all private sector workers in April 2010, while the median for the public sector was £23,680.

Research by pay analysts the Hay Group has found that the differential between private and public sector jobs widens at senior levels, a finding that is also reflected in our survey. For example, a senior/principal officer in the public sector can expect to earn £39,000, which is comparable to that of a middle manager in business and industry, who typically earns £40,000. This conclusion is also supported by the data in the next section, which looks at average earnings by industrial sector.

Table 1 Average annual earnings data by seniority in sector

		Total earnings	
Sector/Base	**Seniority**	**Mean**	**Median**
Business and Industry	Overall	£44,135	£39,303
38	Executive director	£81,899	£77,000
200	Senior manager	£57,452	£52,000
364	Middle manager	£42,943	£40,000
321	Coordinator/Specialist	£36,402	£34,000
61	Assistant/Junior position	£24,740	£24,000
Consultancy	Overall	£37,524	£32,500
152	Director/Partner/Associate	£53,297	£50,000
213	Senior/Principal consultant	£37,383	£36,000
282	Consultant/Specialist	£29,129	£25,600
Public sector	Overall	£34,838	£31,532
101	Senior/Principal officer	£45,550	£39,000
226	Middle-ranking officer	£33,052	£31,000
66	Junior officer	£24,563	£24,628
Education/ Academia/ Research	Overall	£34,540	£35,000
7	Professor/Senior lecturer	£47,714	£49,000
10	Lecturer	£34,395	£35,075
9	Researcher	£23,557	£30,000
29	Facilities/Estates	£35,100	£36,000
21	Other	£34,152	£31,700

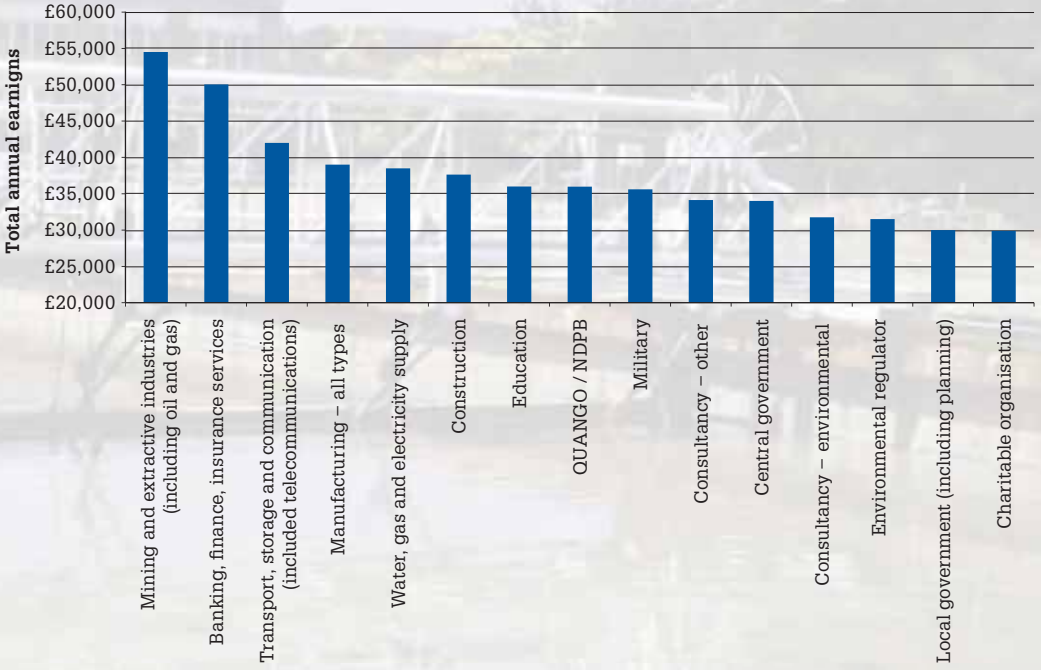
Figure 1 Median annual earnings by seniority in sector



EARNINGS BY INDUSTRIAL SECTOR

Figure 2 shows the median total annual earnings, including bonuses and other extra-salary payments, for environmental professionals in each industrial sector. It reveals that practitioners working in the extractive industries and banking and financial services have the highest earnings, with a margin of at least £8,050 over the next highest industry – transport, storage and communications.

Figure 2 Median total annual earnings by industrial sector



(NB: To ensure the comparison of median salaries calculated for industry sectors is based on a reasonable number of responses, sectors which accounted for less than 1% of the survey sample were excluded. The sector with the lowest number of responses is financial services with 24. The groups included in figure 2 account for 82% of the salary sample.)

The 2011 IEMA survey sample

The survey was conducted using an online questionnaire between 23 December 2010 and 11 January 2011. Invitations to complete the survey were emailed to 11,933 current members. The invitation excluded students and those whose records indicate they are located outside of the UK.

There were 2,318 individual responses, a 19.4% response rate. For the salary analyses, those who were unemployed or retired were removed from the sample, along with those who had not provided data on their earnings and respondents who had not specified the region they work in. The remaining sample for salary analysis after this filtering was 2,100.

Table 1 provides a breakdown of the sample by sector and broad job role.

Measured against the whole of IEMA's UK membership, the respondents are a reasonable representation. The sample has a higher proportion of Full members. They make up 11.2% of respondents used for salary analysis, but only 5.6% of UK members. The largest group, Associate members, are also slightly over-represented – at 68.7% of the salary sample and 62.1% of UK members. Fellows too are over-represented, accounting for 0.3% of UK membership but 0.9% of the salary base. Both Affiliate and graduate members were slightly under-represented, with 15% of the salary sample and 22% of the UK membership and 4.2% of the survey and 6.7% of UK membership respectively.

Respondents were asked to indicate their primary area of work. The five most common areas are:

- health, safety and environmental (HSE) management (19.9%);
- environmental management (18.0%);
- sustainability (9.2%);
- impact assessment (EIA, SEA, SA) (9.1%);
- environmental protection/regulation (6.7%).

No industrial sector dominated the sample. Environmental consultants were the biggest group, making up 16.8% of respondents. Practitioners employed in manufacturing organisations were the next biggest group with 14.2% of the sample, followed by construction (12.3%), non-environmental consultancies (7.9%) and local government (including planning departments) (6.8%).

Asked about additional professional accreditation, 11.1% of the sample said that they are chartered environmentalists (two-thirds of them registered through IEMA) and 11% said they are IEMA auditors.

EARNINGS BY

INDUSTRIAL SECTOR

Table 2 shows the average earnings for the sectors included in figure 2 and reveals that six of the top seven earning groups are in the private sector, and four of the bottom seven are either in the public sector or a charitable organisation. This suggests that even before the coalition government's first Budget last June and the outcome of its Comprehensive Spending Review in November, which have ushered in years of austerity in the public sector – including a two-year wage freeze for public servants earning more than £21,000 – earnings are lower, on average, for environmental practitioners working in public sector organisations.

Average earnings in the different IEMA regions are illustrated in table 3.

There is little variation, particularly when using the median average, with earnings ranging between £32,825 in west Scotland to £38,000 in the southeast of England – just under a 14% differential.

The mean salaries show a much bigger variation – around 29% – but this simply reflects a larger number of either low or higher earners in a particular region. The mean average for north Scotland, for example, is significantly higher than for other regions, even in Scotland. But this is because of the presence of a few particularly high earners in the area, which raises the average.

Also, the findings for some regions should be treated with caution because of the relatively low number of respondents completing the questionnaire.

Table 2 Average annual earnings by industrial sector

Base	Industry	Sector	Median	Mean
41	Mining and extractive industries (including oil and gas)	Private	£54,500	£63,222
24	Banking, finance, insurance services	Private	£50,050	£59,188
67	Transport, storage and communication (including telecommunications)	Private	£42,000	£45,054
300	Manufacturing – all types	Private	£39,000	£43,190
90	Water, gas and electricity supply	Private	£38,500	£42,919
260	Construction	Private	£37,625	£42,987
58	Education	Public	£36,000	£36,199
36	Quango/Non-departmental public body	Public	£35,979	£36,535
33	Military	Public	£35,600	£37,608
162	Consultancy – other	Private	£34,125	£39,360
35	Central government	Public	£34,000	£45,979
355	Consultancy – environmental	Private	£31,750	£36,641
60	Environmental regulator	Public	£31,516	£33,742
147	Local government (including planning)	Public	£30,000	£32,363
50	Charitable organisation	Charity	£29,900	£29,062

Table 3 Total annual earnings by region

Region	Base	Proportion	Median	Mean
Scotland North	54	2.6%	£35,600	£47,695
Scotland Central	127	6.0%	£35,000	£36,842
Scotland West	44	2.1%	£32,825	£33,048
North West	239	11.4%	£35,000	£38,355
North East	75	3.6%	£35,000	£36,017
Yorkshire and Humber	175	8.3%	£34,000	£36,292
Midlands	310	14.8%	£36,000	£40,492
East England	151	7.2%	£36,000	£38,867
South East	561	26.7%	£38,000	£43,431
South West	247	11.8%	£34,616	£40,403
Wales	93	4.4%	£32,840	£36,583
Northern Ireland	24	1.1%	£35,000	£38,640

EARNINGS BY

IEMA MEMBERSHIP LEVEL

Figure 3 shows how IEMA members' total earnings vary between membership levels, while table 4 gives the breakdown between salary and bonus, overtime and commission payments (all non-salary pay is grouped as "bonus" in the table). There is a strong, positive relationship between an individual's annual income from employment and their membership level.

There is a minimal difference between the earnings of Affiliate and Associate members, with median incomes of £34,000 and £35,000 respectively. Full members are earning on average £10,000 more than this, at £45,000. By contrast, Fellows earn twice this amount, with a median of £90,000. This reflects their seniority in the profession though, as the table shows, and the sample of Fellows responding is relatively small.

Extra-salary payments also increase up the membership scale, although the step is small – only £1,000 – between Affiliate and Associate levels.

Earnings vary with additional membership registrations, including chartered environmentalist (CEnv). Auditors and EIA practitioners with CEnv status are earning approximately £5,000 to £6,000 more than those not registered and whose earnings equal the median for an Associate member. Those with CEnv registration are earning on average £12,000 or 35% more than those without chartered status. Those who hold both Full IEMA membership and CEnv status have a median salary of £47,500 compared with £40,000 for those who hold Full membership alone, showing the value of holding both.

Figure 3 Total annual earnings from employment by membership level

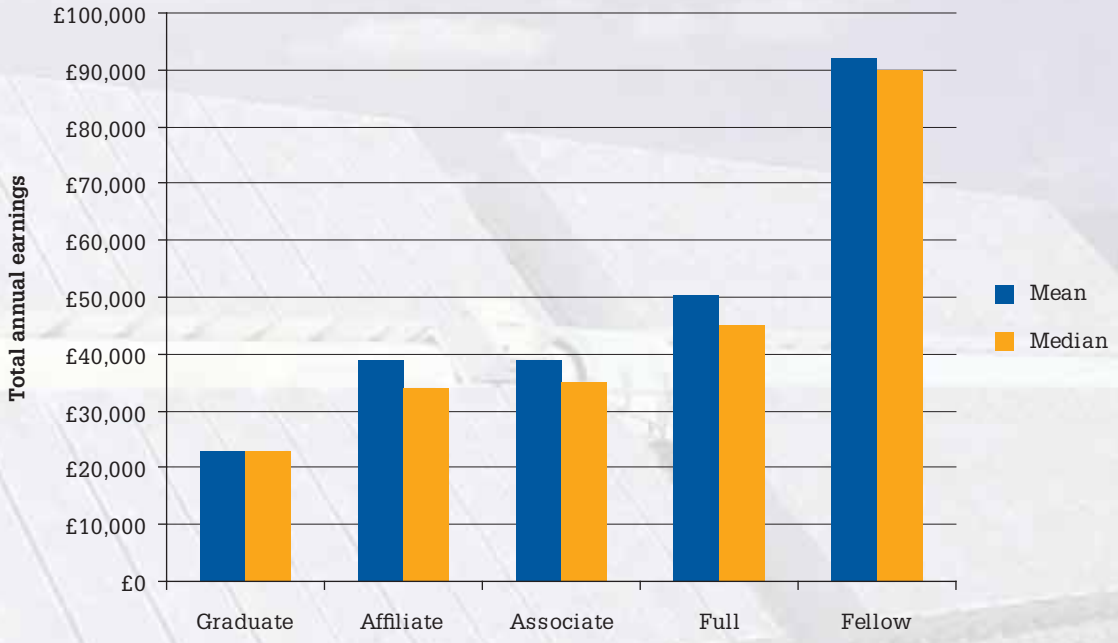


Table 4 Total annual earnings by membership level

		Salary		Bonus		Total earnings	
Base	Member level	Mean	Median	Mean	Median	Mean	Median
88	Graduate	£22,152	£22,200	£2,839	£800	£23,088	£23,000
315	Affiliate	£36,235	£32,622	£7,610	£3,000	£38,868	£34,000
1,443	Associate	£36,427	£34,000	£6,033	£2,000	£38,914	£35,000
235	Full	£44,616	£43,000	£11,716	£3,500	£50,399	£45,000
19	Fellow	£80,843	£80,000	£16,508	£10,000	£92,138	£90,000

EARNINGS BY

HIGHEST QUALIFICATION

Survey respondents were asked to state their highest academic qualification. Graduates dominated the sample; more than four out of five respondents had a bachelor's degree or higher qualification. The most common qualification is a master's degree (41.8% of respondents), followed by bachelor's degree (24.2%), postgraduate diploma (11.7%) and higher national certificate or higher national diploma (HNC/HND) (8.2%). Only 5.2% of respondents said they had no formal qualifications.

Figure 4 shows respondents' total earnings by highest academic qualification. Although those with doctorates are earning the most, there is no clear relationship between level of qualification and average earnings. For example, those in our sample with postgraduate diplomas have higher median earnings than those with a master's degree, even though the latter is a higher qualification. A similar earnings drop is evident between HNC/HND and those with a bachelor's degree.

Some of what appears to be the reverse differential between level of qualification and earnings in our results may be explained by the fact that the profile for those with a bachelor's or a master's is weighted towards the younger end, whereas there is a more even age distribution among the other qualifications. For those with bachelor's and master's degrees as their highest qualification, 53.3% and 52.2% respectively are below the age of 34. This compares with 8.7% for those with HNC/HNDs and 22.5% for those with postgraduate diplomas.

Figure 5 indicates that total earnings rise with age up to 40 years old, after which the relationship plateaus for men and dips for women before making a slight recovery. So the younger profile of respondents with bachelor's and master's degrees reflects the lower wages at this age. Analysis of respondents' years of experience against their qualifications does not reveal such a clear relationship as that shown by age. Those with a doctorate do tend to have more years' experience, which we would expect to be associated with higher earnings and greater age. However, for the other qualifications – HNC/HND, bachelor's degrees, postgraduate diplomas and master's degrees – the experience profiles do not show significant variation or much of a trend. This may suggest that those taking HNC/HNDs and postgraduate diplomas are moving into environmental posts later in life and engaging in further study to make this change. It also suggests that employers are willing to pay for experience over higher academic qualifications, although qualifications do still have an influence.

Figure 4 Total earnings by highest qualification

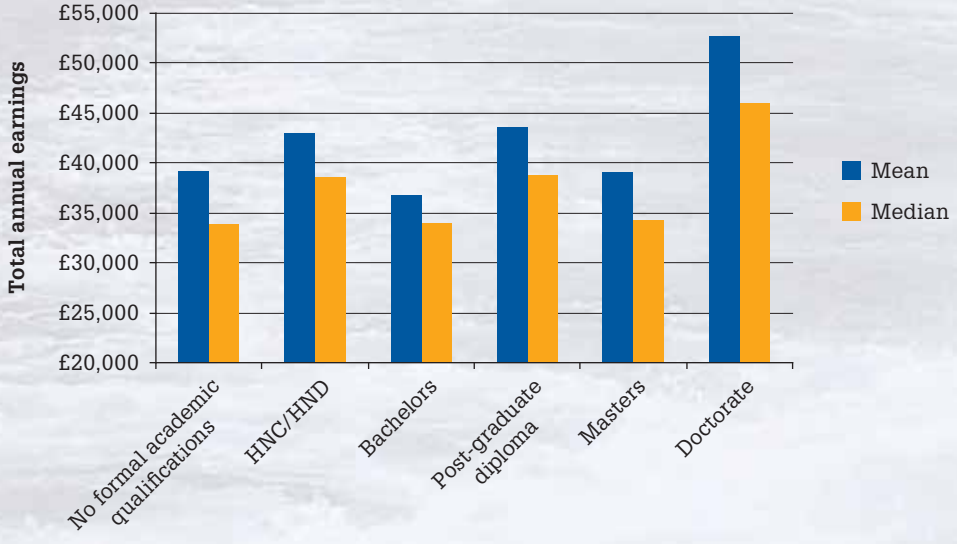
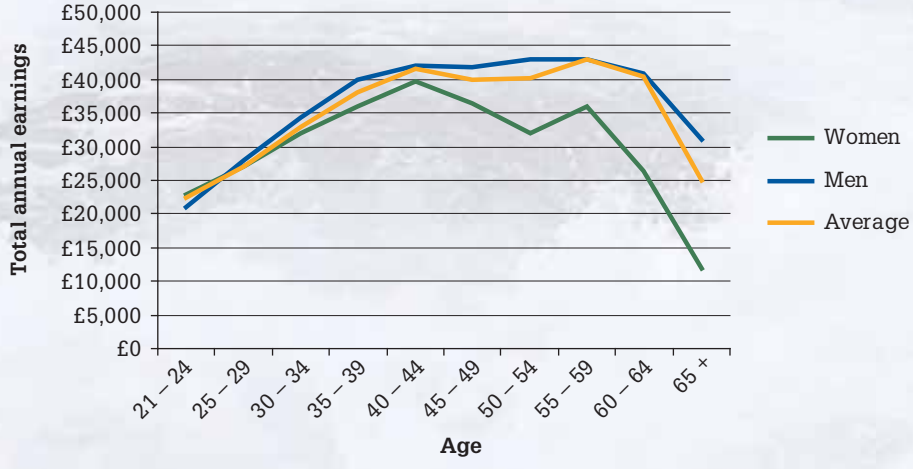


Figure 5 Total annual earnings from employment by age and sex



MEN AND WOMEN'S PAY

Figure 6 shows the variation in salaries between men and women. Median total earnings for men are on average 24.2% higher than those for women. In IEMA's first salary survey in 2007, the total earnings for men and women were £37,000 and £29,000 respectively – 25.4% higher for men. This suggests a small decrease in the wage gap since 2007, although the difference could be down to differences in the samples as the poll is not a matched sample. However, if the gender pay gap has narrowed for environmental professionals, it reflects the trend across the whole economy. The Office for National Statistics recently released data showing that in the 12 months to April 2010 the gap between full-time employed men and women across the whole of the UK shrank from 12.2% to 10.2%. The comparable figure in 1997 was 17%.

An important caveat in considering the wide earnings gap between male and female environmental professionals in our sample is that the age distributions of the sexes are very different. The female age profile is biased towards the younger end; 57.3% of female members are below the age of 35, compared with 29% of male respondents. As we saw in figure 5, median annual total earnings increase with age till the mid-40s when they stabilise for men and dip for women. As younger individuals dominate the female membership profile, this may contribute towards the lower average earnings in this group. It is important to note, however, that average earnings for women are lower than for men in nine out of 10 age categories, which reflects a wider trend not purely associated with career breaks and a younger profile. When we look in detail at salaries for men and women across the age ranges, as shown in table 5 we can see the wage gap is far from uniform.

Women actually have slightly higher salaries between the ages of 21 and 24, but this reverses in their mid-to-late 20s. Both men and women's salaries increase up to the 40–44 age group at a similar rate (see figure 5), albeit with women earning less: at 40–44 the wage gap is 5.4%, compared with the overall gap of 24.2%. From the ages 45 to 54 there is a significant increase in the differential. Although the overall wage gap is around 24%, it is most significant from 45 onwards, when professionals of both sexes might be expected to be in more senior positions.

Table 5 also shows how the wage gaps from our 2007 salary survey compared with those in 2011. Although the gap has increased in two age categories, the decreases in the other three age categories outweigh these rises. For example, the gap between the 35–44 age group has decreased by 7.1% and between the 55–64 age group by 16.2%. In contrast, the increases between the 25–34 and 45–54 age groups are 0.8% and 0.4% respectively.

Figure 6 Total annual earnings from employment by gender

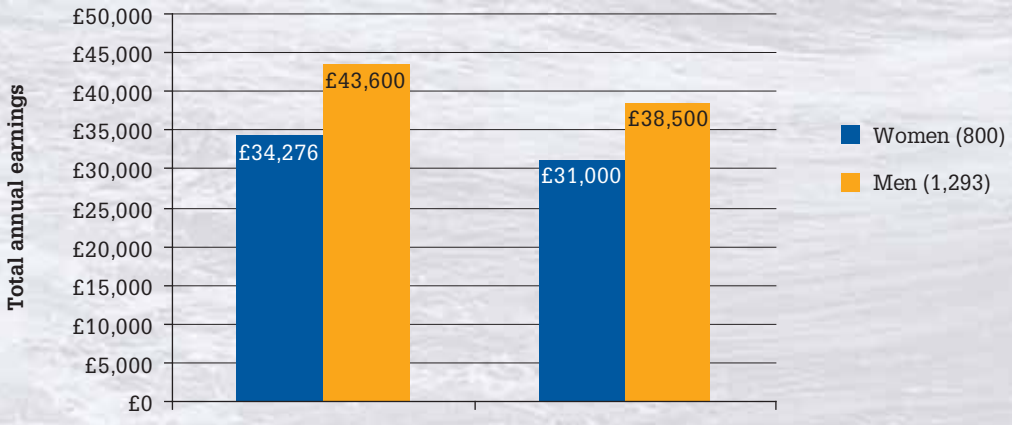


Table 5 Gender wage gap by age for the 2007 and 2011 surveys – men to women (age categories from 2007)

	2007		2011	
Age	Difference	% Gap	Difference	% Gap
21–24	£677	3.1%	–£2,000	–9.5%
25–34	£1,727	5.8%	£2,100	6.6%
35–44	£6,800	17.0%	£4,070	9.9%
45–54	£6,500	16.3%	£7,000	16.7%
55–64	£9,800	24.5%	£3,533	8.3%

CHANGES TO PAY IN 2010

The economic recession of the past two years has been described by expert bodies, including the National Institute of Economic and Social Research, as the worst since the depression of the 1930s.

However, unemployment levels have so far not reached the levels witnessed in the previous two major downturns. Unemployment was above 10% at this stage of the downturns in both the 1980s and 1990s, whereas unemployment is currently at 7.9% of the working population.

One explanation economists have offered for the containment of unemployment is increased flexibility among the working population in adjusting wage expectations to allow employers to weather the storm without making as many redundancies. Pay freezes and even cuts have been widely reported in 2009 and 2010. Our survey reflects this fact; well over one-third of respondents (37.2%) said that their salaries had not increased between 2009 and 2010. Another 7.1% said that they had suffered a salary cut.

Nevertheless, more than half (53.3%) said that they had received a pay increase during the year. This suggests environmental practitioners have fared marginally better than some others.

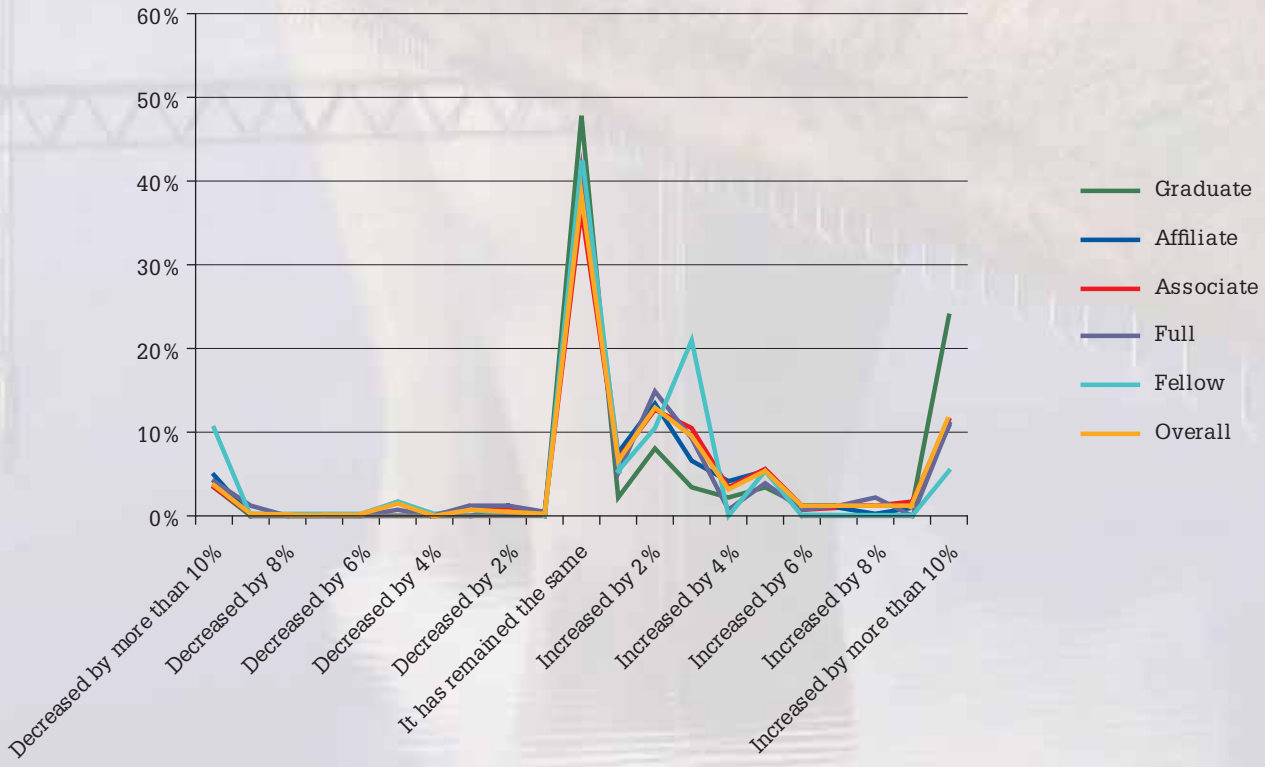
A recent survey of UK health and safety practitioners by *Health and Safety at Work* magazine found that only 42% of the 831 respondents had received any salary increase in 2010.

Figure 7 provides the detail of environmental practitioners' salary increases and decreases, showing the percentage of cuts and rises by membership level.

The most common percentage increases among those who enjoyed any rise were 2% and 3% – reported by more than one-fifth of respondents. There was also a small, but significant, number of those polled who bucked the recessionary trend and received increases of 10% or more. This may partly be due to members starting new jobs or being promoted.

Where a decrease of more than 10% occurred, this may be due to reductions in workload or hours of work. Where individuals' salaries have remained the same, or even if they have increased by 1% to 2% as is commonly the case, this reflects an overall decrease in relative income compared with annual inflation of 3.7% in December 2010.

Figure 7 Percentage change in salaries in 2010 by membership



ADDITIONAL PAYMENTS

Respondents were asked about changes to any extra payments they receive, such as overtime pay and discretionary or performance-based bonuses. Two-thirds of respondents (66.9%) reported that these payments were the same in 2010 as in 2009; 12.2% said they had gone down; and almost one in five (18.6%) reported an increase (see figure 8).

Changes to additional payments show a relationship with membership level, with few graduate and affiliate members receiving increases in extra salary payments, and the proportion seeing increases rising up to fellow level. The fact that only around one in nine members said they had suffered a reduction in payments, such as commission and bonus payouts, suggests again that many environmental practitioners may not have been hard-hit by the second year of the recession.

In terms of the change in bonus, overtime and commission payments, the majority of members report no change and there is little difference across membership levels. All membership levels had some receiving a 10% or more increase, however a greater proportion of fellows received this level of increase.

Working time and workload

The environmental practitioners in this year's poll were asked to estimate their actual (rather than contracted) weekly working hours. The aggregated results show:

- 5% work less than 30 hours a week;
- 22.5% work 37 hours;
- 13.2% work 38 hours;
- 20.1% work 40 hours;
- 5.2% work 45 hours;
- 17.5% work more than 45 hours.

The fact that almost 23% of respondents are working at least 45 hours a week – more than another whole working day compared with those working a common 37-hour week – suggests that a sizeable proportion of practitioners have a very heavy workload. There is some correlation between salary levels and hours worked. The median salary (excluding extra payments) for those reporting a working week of more than 45 hours was £43,600, while those on a 37-hour week earned £32,500.

Respondents were also asked if the downturn had any impact on the amount of work they had to do during 2010. We found that workload over the year had:

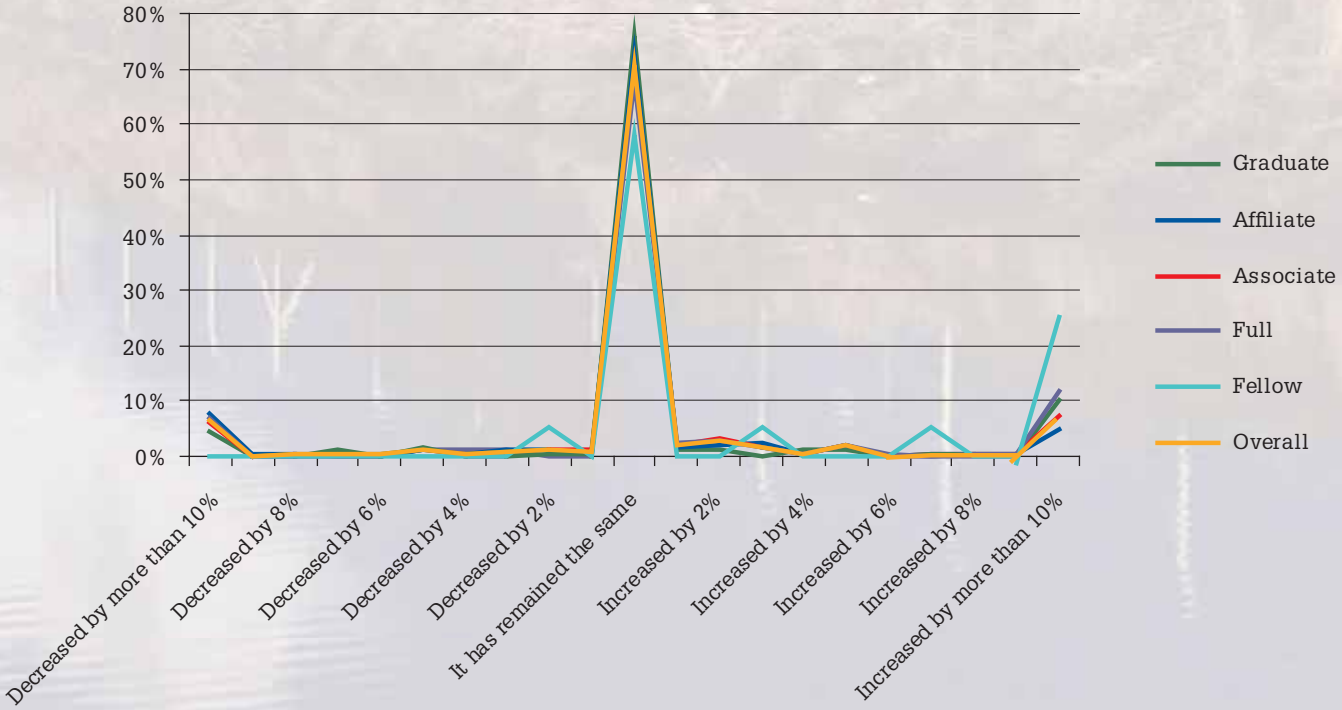
- increased for 46.5% of respondents;
- stayed the same for 45%;
- fallen for 8.5%.

Between membership levels there is relatively little variation; graduate members have the greatest proportion reporting no change, while fellows have the greatest proportion experiencing a change in workload:

- 24% said their workload had increased;
- 72.1% said it had not changed;
- 3.8% said it had decreased.

Considering the relatively high proportion of respondents experiencing an increase in workload but the relatively small proportion receiving salary and bonus increases above the rate of inflation, many environmental professionals appear to be working harder, for longer, but are relatively worse off.

Figure 8 Percentage change in bonus, overtime and commission over 2010 by membership

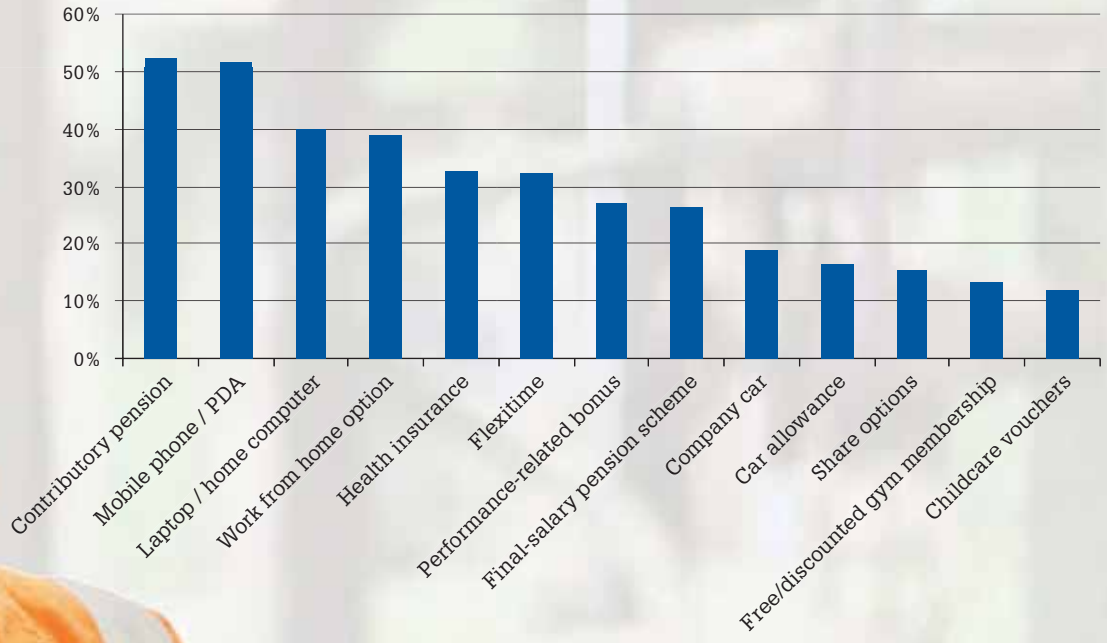


HOLIDAYS AND BENEFITS

The most common annual holiday entitlement (excluding bank holidays) is 25 days, covering 31.7% of respondents. But more than two in five participants have entitlements of more than 25 days, and almost half of those – 17.3% of the total sample – are allowed at least 30 days' leave a year before bank holidays are taken into account. At the other end of the spectrum, 8% of respondents report an annual entitlement of less than 20 days a year – 36.2% of this group were working less than 30 hours a week, and 37.5% are self employed. Even allowing for bank holidays – of which there were eight in England and Wales in 2010 and nine in Scotland, although not all businesses close in Scotland on public holidays – this appears to put a minority of respondents on full-time contracts below the statutory minimum leave entitlement of 28 days.

We asked respondents to specify the non-salary benefits they receive from their employers. The results are shown in figure 9. We also asked respondents separately if their employers provide financial support for professional training. More than three-quarters (76.8%) of respondents report receiving support, and 62% of the sample (68% of those offered employer funding compared with 44% of those without financial support from their employer) had gone through some training in 2010.

Figure 9 Employment benefits received by more than 10% of respondents



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From downturn to upturn?

the environmentalist talks to recruitment specialists about the current job market for environmental professionals

Paul Gosling
Allen & York

Mark Burton
Attwood Burton

Beth Mitchell
Acre Resources

Sam Smith
SER

Guy Stevenson
PURE

The labour market for environmental professionals over the past two years mirrors that of the economy generally. Unemployment was 5.1% in February 2008; by the end of 2010 it was 7.9%. "It has been quite tough for environment practitioners, especially those involved in land development," says Paul Gosling, operations director at international sustainability recruitment specialist Allen & York.

However, the indications are that the labour market is improving, at least in the private sector. "Although hiring in environmental consultancy has been relatively quiet, there have been some definite 'signs' of improvement elsewhere," says Beth Mitchell at Acre Resources. "There has been an increase in demand for experienced environmental professionals to work in in-house positions; people with the commercial ability to oversee projects from conception to completion and manage internal stakeholders." Mark Burton, director at health, safety and environment recruitment consultants Attwood Burton, also reports more demand. "There are definitely more environmental jobs around than in the final quarter of 2010," he notes. Sam Smith at SER is even more optimistic: "There's no real shortage of jobs. The only really difficult thing is finding exactly the right people to fill roles."

Gosling at Allen & York and SER's Smith see signs of life in particular sectors. "We're now seeing positive growth in areas like energy management and renewables," says Gosling. Smith also says renewables is one area where demand for labour is surging. Research by RenewableUK recently found that the number of staff employed full time on large-scale offshore and onshore green-energy projects had increased from 4,800 in 2007 to around 9,200 last year – a 91% increase during a period of recession. The number is likely to rise further, with Gamesa, GE, Mitsubishi and Siemens all planning to establish wind turbine manufacturing facilities in the UK. Also, the introduction of the feed-in tariff in April 2010 has created 17,000 jobs in the solar industry, according to the Renewable Energy Association.

Another area that suffered a dip during the downturn, but which is now showing signs of recovery, is the waste management sector. "There is strong demand from organisations for professionals who will help them deal with their waste," says Gosling. Allen & York has also detected some green shoots in manufacturing, with a pick-up in job opportunities for environmental professionals with compliance experience. "It's slow, but demand is growing again for compliance posts," says Gosling. Burton at Attwood Burton also detects signs of a recovery in demand for environmental practitioners in manufacturing, particularly in high-tech industries, such as composite materials.

Mitchell at Acre Resources says there has been a marked increase in hiring for senior roles (£70,000+), requiring strategic decision-making experience and ability. She expects to see a continued demand for such individuals as companies react to emerging legislation and opportunity.

Getting the right job

So how do you find the right job? Not every vacancy is advertised, according to Guy Stevenson at recruitment firm People Unlimited Renewable Energy (PURE). He says that only 20%–30% of all jobs filled are through advertising, with the remainder through connections, referrals, headhunters and targeted direct applications.

"Companies see direct advertising as the riskiest hiring strategy. They are recruiting an unknown quantity," he comments.

Stevenson offers the following six pieces of advice to those seeking employment opportunities:

- Networking is the most powerful recruitment tool. Create a profile on LinkedIn and attend industry events. Get to know all the main players in your target market.
- Discover the hidden job – keep an eye on industry news; find out what is going on, where and with whom.
- Find out who the key members of staff are and make relationships with them.
- Make direct applications – research the company you would like to apply to, find out who the hiring manager is and apply. Make sure you do it positively and honestly.
- Be flexible – type of position, location and salary.
- Be persistent and keep applying for positions – the more applications, the more interviews; the more interviews, the more chance of success.

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Wales treads its own green path

Environment minister **Jane Davidson** tells *the environmentalist* how Wales is pursuing a distinct policy agenda centred on sustainability

Sustainable development (SD) is the focus of Welsh policymaking through the "One Wales: One Planet" scheme, which sets out the Welsh Assembly government's (WAG) vision for Wales and, uniquely, establishes SD as the central principle for policy development and implementation. But it is not the only exceptional feature of the Welsh government's approach to tackling environmental problems. "Wales is first in a number of areas," claims Jane Davidson, the country's environment minister. "It is the first country in the world to be a 'fair trade' nation. We're the first in the UK to set statutory recycling targets and take action on single-use carrier bags. And we're the first to be developing a coastal path that goes right round our coastline."

Development within environmental limits

Conferring legislative power on the WAG for important environmental issues is helping the assembly develop its own approach in the areas where it can now make legislation – waste, local environmental quality and pollution (see panel, p.26). However, it is the SD principle that really enables Wales to tread its own path. One Wales: One Planet began in 2009 and acknowledges that embedding sustainable development in all policymaking is the only way the country can develop. "We're very much trying to operate a consistent agenda around the principles of SD in everything we do. It is the overarching strategic aim of all our policies and programmes, across all ministerial portfolios," explains Davidson.

She uses the example of building to illustrate how the principle impacts on policy: "The SD principle affects every stage. In planning terms, for example, we're operating one-planet development, low-impact development. I'm not sure there is another country in the world that has a planning policy for low-impact development. There is certainly not another one in the UK." The policy also sets targets for greenhouse gas (GHG) reductions from new builds, the first being a reduction in CO_2-equivalent emissions of 55% compared to the standard set by the Building Regulations 2006 in terms of energy efficiency. "We have taken this decision on the grounds of sustainability," says Davidson. To help achieve the target in reality, Wales expects building regulations to be devolved to the WAG by the end of 2011.

Another example is waste. "We work from a resource-efficiency perspective because we have SD as our central

> **Because we've got sustainable development on the policymaking and implementation agenda for the Welsh Assembly government, we're ahead of the game in terms of the sort of behaviour change we are all going to have to make to combat climate change**

organising principle, so we look at our impact on resources, on the planet," says the minister. "Our policy is about living within our environmental limits. So, taking that decision leads you in a certain direction." That direction includes achieving a 70% recycling target by 2025; zero waste to landfill by 2050; and operating the EU waste hierarchy.

The One Wales: One Planet scheme recognises the global threat of climate change and that the WAG must be at the forefront of tackling the causes and effects of these changes in Wales. It includes a specific commitment to reduce GHG emissions in Wales by 3% a year from 2011 in areas of devolved responsibilities.

Going it alone

Davidson's ministerial remit covers the environment, energy, planning, housing, regeneration, water and marine access. She is also the lead within the cabinet on SD and climate change. Bringing all these issues together in one department has its benefits. "[The portfolio is] massive but the connections are fantastic, because these are what affect people's daily experience of the environment in which they live. In Wales, everyone I need to speak with on an issue I can get into one room," Davidson says. She established a board to oversee the programme for waste, which matches officials from WAG, such as treasurers, with officials from local authorities across Wales. "That's where being a small country has its advantages: it is too big a portfolio for one minister in the UK government, but you can do it in Wales."

Being a relatively small country – Wales has a population of less than three million – also makes it easier to involve stakeholders in developing strategy. Wales has its own separate Climate Change Commission. It brings together leaders and representatives from a range of sectors, including business, academia and local government in Wales to help develop new policies and create a consensus on climate-change action. "There is nothing similar anywhere else in the UK," comments Davidson, who until recently chaired the commission.

Work has also started in Wales on setting up its own environment body, possibly incorporating the Welsh arms of the Environment Agency (EA) and Forestry Commission, as well as the Countryside Council for Wales. Davidson explains that all three bodies were established at different times for very different reasons, and there are some overlapping responsibilities. "We looked at it and found lots of areas where each of them requires both regulatory and conservation people, so have decided it might be better if we had a strong, independent environment organisation that dealt with all of this." However, with Welsh Assembly elections in May, there will be no firm decision made on the proposed new body until the new government takes power.

Working together

Although Wales is forging its own path in several areas, it continues to work closely with Whitehall departments and the other UK national governments on environmental matters. The WAG can transpose EU legislation in the areas that it has competence for, although it usually does so in conjunction with England, and sometimes across the whole of the UK. "It's not an agenda about being different, but one of effectiveness. Where it is best to transpose on a UK or England and Wales basis, we do. And there are a number of areas where if the EA is the main enforcement body it makes sense, at least at the moment, to transpose in both England and Wales because the agency operates in both countries," Davidson says. Although the WAG – currently a Labour–Plaid Cymru joint administration – is working with the new government in Westminster, it is critical of several decisions by Conservative–Liberal Democrat ministers, notably plans to withdraw funding from the SDC and the changes to the Carbon Reduction Commitment Energy Efficiency scheme.

And, while waste is a good example of how regional government, given the powers, can make a difference, there is frustration in areas that are not devolved. "Whereas we got everything devolved with waste, we don't have the same power over energy issues," says Davidson. "Responsibility in terms of planning etc for energy plants over 50MW on land and above 1MW at sea still lies with Westminster." That means, for example, that the WAG has no say in whether a new nuclear power station is built on Anglesey. Nevertheless, Wales has unique natural advantages in the generation of renewable energy, particularly from marine sources, and this is another area where Wales is aiming to make its own unique contribution to tackling climate change.

Bagging a legislative role

The National Assembly for Wales (Legislative Competence) (Environment) Order 2010 (LCO) came into force on 11 February 2010 and means that the Welsh assembly government (WAG) now has the power to make legislation in relation to many environmental matters. Previously, Welsh ministers had a broad range of executive powers relating to the environment, but the LCO means the WAG can develop legislation in three main areas: waste management, pollution and local environmental quality. It also ensures that the WAG can respond to environmental challenges as and when they arise, and based on Welsh priorities and needs.

One of the first major pieces of environmental legislation to emerge from the WAG since the LCO came into force is the Single Use Carrier Bags Charge (Wales) Regulations 2010. The Regulations introduce a charge (5p) on shoppers – from 1 October 2011 – for single-use carrier bags, making Wales the first country in the UK to introduce a charge as part of its efforts to dramatically reduce the volume of carrier bags given out to shoppers.

Wales' environment minister Jane Davidson said the WAG decided to seek a legislative remedy to the problem of single-use carrier bags because the voluntary British Retail Consortium commitment had failed to reach its target to reduce the use of such bags by 50% by spring 2009 compared with 2006. "I always believe in starting with a voluntary approach and if that doesn't work, you then look at appropriate legislation," says Davidson. She has, however, included a voluntary element: "Even though my powers extend to mandating how the charge is spent I've gone for a voluntary approach. So, retailers are mandated in terms of how much they charge, they are not mandated on where they spend the revenue. We are looking to retailers to fund good causes."

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Is waste incineration

Two experts give their opinion on

Today's EfW plants operate under some of the most stringent regulations and permitting procedures that exist for industrial facilities anywhere

Matthew Farrow
Director of policy at the Environmental Services Association

The UK produces 75 million tonnes of waste a year. Even though we have stabilised the historical growth of waste arisings, the waste management industry is going to be dealing with tens of millions of tonnes of waste for many years. The industry's priorities are twofold: to ensure that waste is dealt with safely and responsibly, and to extract as much value from waste as possible.

The good news is that municipal recycling rates have steadily increased, from 12% in 2001 to 39% last year. But we need to do even better – 24 million tonnes of waste still goes to landfill each year.

How high can recycling rates go? Some wastes – such as heavily mixed or inseparable wastes, and particular plastics – are not suitable for recycling because there is no way to reprocess them back into a product. With analysis suggesting it is likely that nearly one-third of the waste stream will continue not to be recycled, the Environmental Services Association believes energy from waste (EfW) has a role to play alongside higher levels of recycling: evidence from Europe shows that the two can go hand in hand.

EfW has many attractions. With coal plants being phased out, gas-fired power stations are likely to supply one-third of our electricity deep into the 2020s and gas will remain a major heating fuel. This gas increasingly comes from the global market rather than the North Sea, so has a higher carbon footprint given the energy required to liquefy and regasify the fuel before and after shipping. The family of EfW technologies – thermal treatment, anaerobic digestion and landfill gas – can displace this imported gas using a lower carbon footprint. Of course, these benefits would be undermined if EfW plants posed a threat to health and the environment. But today's plants operate under some of the most stringent regulations and permitting procedures that exist for industrial facilities anywhere. No plant has been rejected for permitting by the Environment Agency, while a Health Protection Agency review concluded in 2009 that if risks to human health exist at all they are so small as to be undetectable.

We all recognise the need to do more recycling and less landfilling in the future. But residual waste will still exist in significant volumes and needs treating. Modern, well-regulated EfW plants offer a sensible way to do this, extract incremental value from the waste stream and contribute to the UK's energy needs.

right for the UK?

plans to increase energy from waste

Although energy-from-waste (EfW) plants generate electricity, they create it at a cost in terms of climate emissions as the technology is inherently inefficient, even if the heat generated is used.

Energy from incinerators is neither renewable nor low carbon: DECC estimates the emissions from incinerators to be 540g CO_2/kWhr – more than the UK grid average and more than 10 times the limit the Committee on Climate Change recommended for energy generation in 2030: 50g CO_2/kWhr.

At the moment, many councils are wasting £billions on EfW plants that send valuable materials – and taxpayers' money – up in smoke. Incineration is hugely expensive, tying councils to inflexible contracts often in excess of 25 years. They must be fed with a constant stream of waste for decades, creating a demand for rubbish and removing flexibility from waste management. This leaves councils unable to adapt to changes in future waste composition or take advantage of new technologies.

Incineration suppresses recycling. This can already be seen in many European countries, as well as parts of the UK. The Hovedstaden region of Denmark, for example, burns about 77% of waste, recycling just 21%. EfW plants inevitably burn recyclable materials, unlike other residual-waste technologies that will separate out recyclables, including plastics. And it's actually better for the climate to landfill plastic, not incinerate it, if you can't recycle it.

The Waste Review [Defra consulted last year and expects to publish the results of the review shortly] is due to set goals and policies to 2020 that put England on course towards the coalition government's ambition to "work towards a zero-waste economy". The government must not interpret this as "zero waste to landfill" and burn our waste instead. Rather than building more EfW plants, and committing the UK to being a wasteful society, we should be boosting recycling and reuse services, including food-waste collections. Aiming to prevent, reuse and recycle our waste would save much more energy – and climate-changing gases – than EfW plants will generate from burning it.

Recycling creates 10 times as many jobs as incineration, is cheaper and provides essential raw materials to the manufacturing sector we hope to rebuild in this country – allowing us to be more efficient with the world's natural resources.

At the moment, many councils are wasting £billions on EfW plants that send valuable materials – and taxpayers' money – up in smoke

Becky Slater
Resource use team, Friends of the Earth

Two standards – one system

the environmentalist reports on how BMT Group developed its unique sustainability management system

BMT Group, an international design, engineering and risk management consultancy, has pioneered the accreditation of a single sustainability management system (SuMS). Its SuMS meets the requirements of both ISO 9001 and 14001. BMT Group says that this is the first truly combined sustainability management system and is therefore a single response to the requirements of the two internationally recognised standards.

Why a single system?

Before embarking on its journey to develop a single sustainability management system, BMT Group cast around for early implementers of such an approach but could find none. The development process also involved, in the initial stages at least, undertaking a complex and resource-intensive project. So why was the organisation so determined to pursue a single accreditation route? One of the main drivers was to avoid the potential pitfalls of operating two or more discrete systems, as Jacque Reynolds, head of operational risk management, explains: "From experience I know that two separate management systems can produce either a wide gulf between the two or contradictions and conflict for users when considering which standard to apply in any given situation. This can cause a divergence in how employees work, and costs can spiral as more investment is thrown at trying to make the systems function properly."

Del Redvers, head of sustainability, agrees. Often, he says, companies are responding to external drivers, for example client pressure, when deciding to implement management standards such as an environmental management system. This starting point means they do not always consider how the system will fundamentally help steer the business towards a future that has sustainability objectives at its core, which was the aim for BMT Group. "A major problem with having distinct management systems is that the quality system typically ends up being the central one with the environment as the poor relation and a bolt-on. We wanted a fully integrated approach to sustainability management, with accreditation being but a milestone on the journey towards achieving an authentically sustainable business," says Redvers.

A sustainable future

Prior to the implementation of SuMS, BMT Group did not have accreditation for either quality or the environment so in one sense it was starting from the position of a clean slate. According to Reynolds, most departments did own and operate various quality and environmental procedures but these were not accredited or pulled together as a whole.

Although there was an environmental policy in place, Redvers says that the approach to environmental management had not really been formalised. This started to change a few years ago, when the company made a conscious decision to develop targets and guidance in this area. Redvers was recruited in 2008 to help take forward the organisation's goals for corporate sustainability.

There is strong leadership at BMT Group on sustainability issues and a desire to change the culture of the business. This vision is encapsulated in the "Sustainability Overview", which sits at the front of the company's new SuMS. It states that: "To be more than a simple composite of existing environmental and quality management standards, this SuMS approach takes a systems approach to the assessment and management of impacts. Indeed it is how the issues identified in the aspects register interact that will define and shape the basis of sustainability management."

Planning and implementation

SuMS was developed and implemented by an in-house team and was launched in July 2009. Accreditation followed in February 2010 when external assessment body LRQA awarded BMT Group a single certificate accrediting both

standards. Redvers and Reynolds led the in-house team charged with implementing and gaining accreditation for SuMS. It also included an expert in standalone environmental management systems from one of BMT's subsidiary companies and a consultant from Ingenium Quality Solutions, an external consultancy.

The team began work in January 2009 and by July that year had started to implement the SuMS across the company. Six months after the system went "live", in December 2009, the external assessment body LRQA undertook an external audit and approved the single system approach; the stage 2 audit and accreditation was successfully completed in February 2010. The LRQA auditor was impressed with BMT Group's single accreditation route, and when the assessment body returned in August 2010 to undertake the usual six-month post-accreditation review there were no recommendations for improvement made at all.

Reynolds says that careful planning has been the cornerstone of BMT Group's smooth transition to its truly integrated management system. As she comments: "Developing a single system does demand more work in the planning stages as the architecture is more complex; and every company activity and procedure has to be thought through in relation to the requirements of both standards. But for end-users the simplification achievable from operating a single system means that it is much easier to apply on a day-to-day basis."

Asked if implementing the new system required a step change on the part of the organisation, Reynolds says that's exactly what you don't want. "The day you flick the switch you don't want a big change in how people are working because SuMS has been built from the bottom up and is not about imposing new working practices on people," she says. "Much of the system is merely documenting what people are already doing to meet sustainability requirements, with some gap filling along the way."

A collaborative approach

From the outset, employee involvement and ownership of SuMS was a core principle for its implementation. Internal champions representing each of the main departments at BMT Group were put in place at an early stage to help guide the development of the system. The months between January and July 2009 were spent working in close collaboration with each section of the business, such as HR, accounts and IT.

Regular one-to-one meetings were held between members of the project team and key personnel in order to sit down and painstakingly review the procedures that already existed for quality and the environment. Where there were gaps, new procedures were written jointly for inclusion in the SuMS. "We knew that the system would only work if every employee was behind it 100%, so it was vital that ownership of the procedures rested with them," says Reynolds. "We could easily have shortened the process by having the project team write the procedures, but this would have defeated the purpose. We didn't want to rewrite history or impose new ways of working on people." Redvers concurs: "If people feel they own the procedures, then they will engage with the system; employee involvement and consultation is part of the cultural piece about building an authentically sustainable business."

Writing the procedures was the most time-consuming element of developing the SuMS. It also involved a process of streamlining different departments' quality- and environment-related procedures. There are around 100 within the SuMS, covering 15 different departments; this means that on average there are fewer than seven procedures per department. "This is where the simplicity comes in," says Redvers. "By working collaboratively we were able to distil departments' activities and processes relating to quality and the environment into just a few overarching procedures. For example, the area I am responsible for, corporate sustainability, has just three procedures within the SuMS, while HR has 12 flowcharts representing its procedures."

The company's commitment to employee involvement and engagement continues, with regular briefings, training sessions and a continuous improvement approach to sustainability management. The project team has received very positive feedback from employees on SuMS and there is feedback from users on various changes needed on an ongoing basis. "We are constantly reviewing the system and people are encouraged to make suggestions and come up with ideas for improving it," adds Reynolds. "We would not be able to achieve the same level of innovation or continuous improvement if the system existed merely for compliance reasons."

Online and user-friendly

A key starting point for the SuMS project team was that the system should be paper-free. BMT Group's SuMS is

therefore web-based and is part of "Navigator", the company's intranet. "The electronic format means we can update the SuMS and anyone can access it all over the world at any time," says Redvers.

The SuMS comprises all the elements expected to be present in either a quality- or environmental-management system – the key difference is that the two requirements for both are integral to every stage of the single system. There is one overarching policy covering quality *and* the environment and one set of objectives and targets relating to both areas. This twin thread runs through each step of the SuMS, so the register of aspects, for example, identifies the particular features of a service, activity or product that both interacts with the environment and has quality implications. The same goes for the 100-plus procedures.

Whereas some procedures are department-specific, others, such as the waste management procedure, are generic and can potentially be used by the whole organisation. It is presented, as are all the others, graphically, as a flowchart to show the actions employees need to take at every stage of managing their waste. The "purpose" of each procedure, or flowchart, spells out which 9001 and 14001 clauses the procedure is satisfying. A standalone box also sets out any associated documents or procedures users need to be aware of, as well as the relevant roles and responsibilities and records.

The flowchart itself takes the user through a simple step-by-step process with the stages satisfying environmental requirements – such as "check with Environment Agency regarding waste carrier's legal compliance" – and quality requirements, for example engaging with waste carriers at appropriate points. Some boxes of the flowchart enable the user to click through to other relevant sections of the online SuMS.

Leading by example

Reynolds and Redvers are confident that the project team made a good job of implementing the SuMS. "It's not that the challenges weren't there, but in most cases we pre-empted them because we made a huge investment at the planning stages," Reynolds explains. "One positive lesson we learned is not to try and achieve accreditation in isolation – use a project team with a good spread of experience, so collectively the team has people with the vision, the hands-on environmental and quality experience, and project managers. And don't be afraid to use external experts when you need them; it may seem like an expense but having the right expertise at the right time is invaluable."

Redvers has this advice for organisations thinking about developing a single sustainability management system: "It may seem obvious but it is vital that the organisation and project team really understands the purpose of the project at the very beginning – if cost efficiency is the key driver the project will take a very different form to what we set out to achieve. For us, the project was driven internally by a desire to place corporate sustainability at the heart of our business. Achieving accreditation was therefore an opportunity to encourage cultural change and that goal influenced how we managed the project from start to finish."

A major problem with distinct systems is that the quality one typically ends up being central and the environment one the poor relation

The benefits of applying a single sustainability system are now being realised by BMT Group and reinforced on a daily basis, and the company is embarking on a wider roll-out across its subsidiaries. "The two obvious advantages are consistency and control – not top-down control but how this system gives control back to the individual. It's simpler to use and employees appreciate the benefits to them, their clients and other stakeholders," comments Reynolds.

"There are practical benefits as well, such as cost saving," adds Redvers. "The synergies achievable from setting up and operating a single system have translated into efficiencies such as the cost of one project team and one accreditation, for example. And, crucially, the SuMS gets us one step closer to embedding the environment and corporate sustainability into the core of the business."

Want to know more?

BMT is planning to run a free workshop in May to enable readers of *the environmentalist* to learn more about its sustainability management system. There are a limited number of places available. To register your interest, please email the editor at paul.suff@lexisnexis.co.uk.

Great expectations

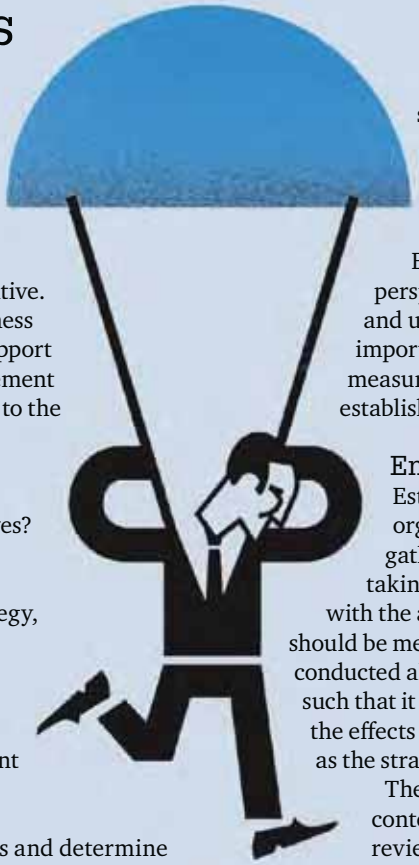
Ian Hill outlines his four steps to setting great targets

Ian Hill is a non-executive director of IEMA, and is chief sustainability officer at Openreach

Effective management and communication of environmental performance relies on its effective measurement. Environmental performance is not simply a matter for corporate narrative. As with most other aspects of business it depends on reliable metrics to support and measure the impact of management actions as well as to provide colour to the narrative on performance, both for internal and external audiences.

So, how do you go about setting environmental targets and objectives? The process falls into the following four steps:

- understand your business strategy, your key stakeholders and the intersection of environmental impacts with them;
- establish the effect of your organisation on the environment and gather the data;
- select the measures; and
- set targets against the measures and determine objectives associated with them.



Strategy and stakeholders

All well-run businesses have a strategy, and without exception all businesses have stakeholders – including customers, investors, suppliers, employees, NGOs, government and regulators, and the communities within which they operate. If environmental performance management is to move from merely a compliance and measurement activity to one that genuinely adds value to the business and helps guide its strategic direction, then understanding and relating to its strategy and stakeholders is key.

By considering environmental impacts (and hence measures and targets) in the context of strategy, two things are achieved.

First, the process becomes forward looking and contextualises the performance measures and targets, meaning there is greater potential to influence the strategy. Second, it engages a different level in the organisation.

By incorporating stakeholder considerations, both internal and external, the process can become something that is of relevance to the expectations of both audiences. It therefore has the potential to not only meet, but also to influence, those stakeholder considerations. Each stakeholder may have its own perspective on environmental priorities, and understanding and mapping these is important to ensure the relevance of the measurement set chosen and the targets established as a consequence.

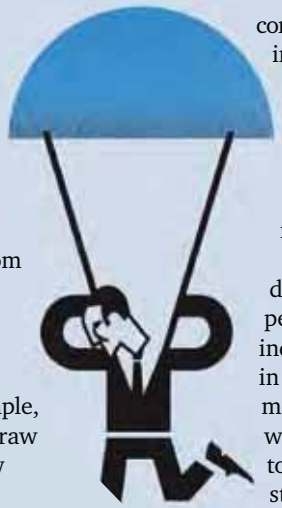
Environmental effect and data

Establishing the effect of your organisation on the environment and gathering the associated data involves taking a holistic view of your business with the aim of capturing those aspects that should be measured and targeted. This needs to be conducted alongside the business strategy process, such that it enables a view to be formed not just of the effects as they are now, but as they will evolve as the strategy is deployed over time.

The business strategy and business context will determine where to start this review and the areas to focus on, and it should align to the key risks faced by the business. Typically, the following would be topic areas to include within the review:

- energy use;
- water use and discharge;
- raw material production, consumption and end-of-life management – that is, reuse, recycling and waste; and
- emissions to air.

Data may be gathered via a full life-cycle assessment, which itself can be compiled from a number of existing activities or business metrics to ensure consistency with other business processes and to minimise the risk of the data being invalid. These metrics and activities can include invoices (for example, for energy consumed), purchase orders (for raw materials for production), and stock and raw material records.



Selecting measures

From the data collected, you will start to form a picture of what key measures and targets to choose in order to help manage performance over time. Considerations in determining the measures and targets to use include:

- legislative considerations and compliance indicators;
- supporting business efficiency – for example, reduced vehicle-fleet emissions going hand-in-hand with reduced ineffective visits and improved customer satisfaction and lower cost of fuel;
- engaging employees effectively in furthering environmental improvements, or measuring the performance of employee engagement; and
- stakeholder considerations – ranging from the interests of investors and analysts to NGOs, regulators and others, dependent on the nature of the industry concerned.

Measures should relate to the areas of greatest impact in your business – for example, raw material or energy use – and may be absolute, relative or weighted measures and targets. Which of these to use (or rather which combination), will depend on the need to measure simple absolute consumption – for example, KwH electricity per annum; to measure consumption relative to, say, units of production in order to show efficiency of resource use; or to combine measures on a weighted basis where the end product or service whose environmental impacts being measured is a combination of different elements.

It is also important to consider whether broader indicators may be included within the portfolio selected to measure environmental performance. These might, for example, include measures that reflect employee engagement with environmental impacts, for example staff surveys to measure engagement with energy reduction in the business.

While these measurements are not directly linkable to improved environmental performance, they provide a powerful indicator of the level of employee engagement in making changes and reductions. Whatever metrics are chosen, the resulting data will need to be presented clearly in order to ensure appropriate impact with key stakeholders, whether they are internal or external. Use of graphical presentation, trending of data and summary analyses are among the techniques that will have maximum impact.

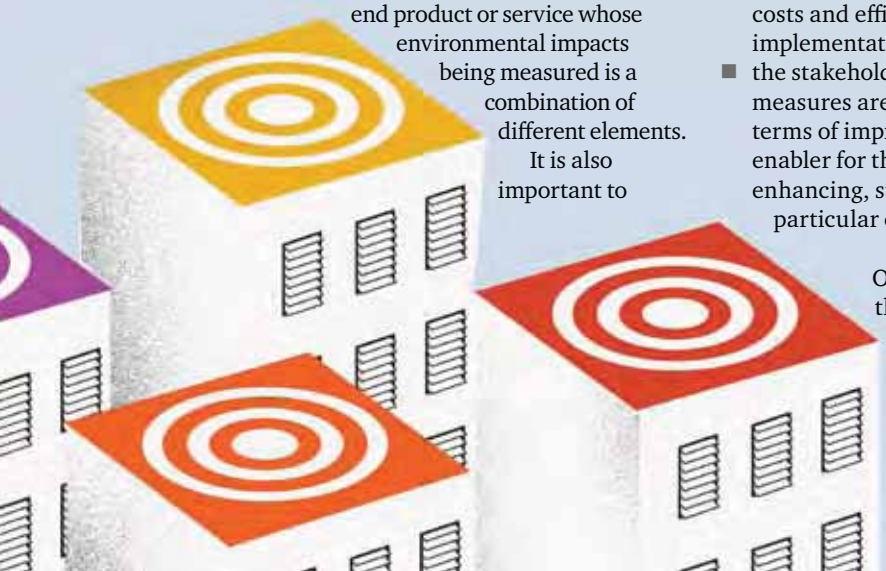
A key decision is also what to publish externally, and what to retain for internal purposes only. Many organisations are also faced with a decision as to what to publish online, and what to put in the traditional hard copy annual report/sustainability report. Again, these decisions will be driven primarily by the needs of the audience.

Setting targets

With a suite of environmental measures established, based on firm data-collection methods and aligned to the priorities of the business and its stakeholders, target setting is possible. The process by which targets and objectives are set should reflect the improvement that the organisation and its stakeholders require over the plan and target period, and the relative significance of issues such as:

- current regulatory and legislative requirements, and the extent to which the business is performing against these;
- the scope for setting measures that allow the business to comply with anticipated or announced future legislation, or to get it on the correct path to do so;
- the role that the environmental performance measure can play in delivering the organisation's strategic objectives;
- the effect that measures can have on improving costs and efficiency, especially relative to the cost of implementation; and
- the stakeholders' view of which environmental measures are most critical and/or require most in terms of improved performance, potentially as an enabler for the organisation to achieve a brand-enhancing, stand-out leadership position in a particular environmental dimension.

Once the choice of targets is made, the measurement of progress against them, and review of the targets and measures themselves, should be an ongoing process, conducted at least annually for target review, and often more frequently for measurement.



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From the knowledge hub

Keeping you up to date with IEMA services and events

The January issue of *the environmentalist* previewed the pilot of the IEMA Diploma in sustainable business practice (DipSBP), which concluded at the end of 2010. Since that article was published the course content has been reviewed and finalised. The Diploma was launched on 21 March and is now open to members who are prepared for a personal and professional challenge. It will equip successful candidates with essential knowledge to become effective change makers for sustainable business practice.

The demands placed upon environment and sustainability professionals are changing from operational environmental management coordination and compliance to a role that is responsible for embedding environmental sustainability across the organisation, ensuring long-term business survival. The DipSBP supports Associate members (AIEMA) requiring an advanced environmental qualification to drive strategic change in their organisations and to influence board-level decisions. It builds on the knowledge and understanding gained through completion or achievement of AIEMA, broadening an individual's knowledge and understanding beyond their immediate role or sector.

Almost 65% of IEMA's membership has achieved AIEMA and the new Diploma provides a supporting framework for these members to develop their knowledge and understanding to the level necessary to move to Full membership. We know from feedback and research that achieving Full membership is an ambition for many members and the Diploma has been created with this in mind.

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

Robin Bloodworth, trainer at pilot course provider Woodland Grange, says that having the course finally ready to roll out and deliver to IEMA members is "a dream". "There has been a lot of discussion and debate about the introduction of an IEMA Diploma for many years so to see it going from concept, design, delivery, pilot and now the launch is an incredible feeling of satisfaction," he says.

Bloodworth and IEMA assessor Dave Stanley have been involved in the development of the Diploma since its inception, when it was identified that a vocational bridge between the Associate certificate course and the knowledge required for Full membership was needed. Stanley is certain that now the Diploma is available it will "arm" Associate members with "the skills and confidence to progress from an advisory role to active change management and positively towards a more sustainable future".

He also says that the DipSBP, in its refined form, will help delegates achieve "credibility and status in practice" through teaching and learning. "It's about enabling the delegates to achieve objectives through change," he says. Stanley also believes that they will feel empowered to shift their professional axis from concentrating solely on compliance to "considering natural resource use, energy, non-renewable resources and their availability, potential threats to organisations, security and supply, and whole-life costings, and how they might be addressed." Overall, he says that graduates of the Diploma will be able to look at things "far more strategically" than they did prior to undertaking the course as Associates.

Ultimately, both Bloodworth and Stanley are positive that employers will recognise that graduates of the Diploma have undertaken a valuable and useful course in strategic environmental management. "Graduates will be able to confidently demonstrate that they have the expertise to prepare business cases, look at organisational risk management and manage performance improvement. All of that will enhance the credibility of not only the environmental manager or policy maker, but the organisation as a whole," says Stanley.

Three modules towards sustainable business practice

Students of the new IEMA Diploma in sustainable business practice are taught and assessed across three central modules of study. These are based on the level six descriptors of the Qualifications and Credit Framework, and those studying for the qualification have the opportunity to apply some of the assignments to their workplaces.

Module 1: Managing environmental media and issues – Managing the environmental aspects and impacts associated with operations, activities, products and services is a basic business need. As legal compliance is essential for businesses, organisations need competent environmental practitioners with a sound environmental knowledge base from which to develop management skills and capabilities to bring about environmental improvement. This module builds on the knowledge gained through achieving Associate membership of IEMA and supports delegates in developing a broader understanding of managing environmental media and associated issues.

Module 2: Sustainability for business – This section of the Diploma aims to equip students with a strategic view of how "the environment" fits into the broader business agenda. In a changing world where corporate responsibility and business reputational risk are of increasing importance and prominence, this module allows environmental practitioners to develop the skills required to move environmental sustainability higher up the business agenda.

Module 3: **Strategic environmental management** – A wealth of information, training and support is available to organisations that want to manage their environmental aspects and impacts to improve their environmental performance and competitiveness. For this to be effective, environmental issues need to be central to business/organisational strategies and not seen as a bolt-on. The purpose of this module is to equip delegates with the tools to understand their role as leaders of change in an organisational context and work at board level to deliver strategic environmental management.

FAQs on the Diploma in sustainable business practice

Q&A If you are thinking of studying for the Diploma in sustainable business practice (DipSBP), here are some answers to commonly asked questions:

1. **What are the entry requirements?** AIEMA or equivalent is required to enrol on a Diploma programme. This is to ensure that delegates can focus on building on their Associate knowledge, by tackling strategic environmental management issues.
2. **How long will it take?** As IEMA offers flexibility in the delivery of the Diploma this varies between different course providers. As a minimum, 210 guided learning hours are required to complete the DipSBP; projects and assignments may take a further 210 hours. Delegates are required to complete the Diploma within 24 months.
3. **What is the pass mark?** Delegates are required to pass all three modules of the Diploma at 55% or above.
4. **Can I do it through distance learning?** Training providers have the option of delivering the programme by distance learning. Delegates must be supported through opportunities to discuss and collaborate with peers as part of the DipSBP programme.
5. **How much does it cost?** This varies from provider to provider. It also depends on the delivery format. We would recommend that you contact a few providers who deliver the Diploma in the format required to gain accurate cost information.
6. **What are the module titles?**
   - Managing environmental media and issues.
   - Sustainability for business.
   - Strategic environmental management.
7. **What is accepted Accredited Prior Learning?** At present there is no APL. Delegates enrolling on the Diploma programme are required to complete all components in full.
8. **Does the programme lead automatically to Full membership of IEMA?** Completion of the Diploma does not lead directly to MIEMA. It is designed to help you develop the knowledge that Full membership requires. Delegates still need to complete the Full membership application process. A key part of the credibility of the Full membership assessment process is the peer interview, which Diploma delegates need to complete.
9. **Can I use any letters after my name?** Yes, delegates who are successful are entitled to use the suffix DipSBP.
10. **Who delivers the programme?** A list of IEMA training providers that are approved to deliver the Diploma is available from www.lexisurl.com/iema6336.
11. **What are the benefits to employers?** Employers of DipSBP students will benefit from their completing the programme, as successful delegates are supported to develop the skills to influence change in organisations, and to lead and contribute to sustainable business practice.

The DipSBP is currently being rolled out to a series of approved training providers so interested members should visit www.lexisurl.com/iema6336 to find out more about how the Diploma could be the key to professional success.

You can now follow IEMA on Twitter

Communication

An increasing number of environment and sustainability professionals are using social media rather than traditional publications or subscriptions to network and keep up to date with key announcements within the sector. To ensure that members have several different options for how they choose to access the institute's news, policy, events, membership updates and new job opportunities, any interested members or their organisations can now follow IEMA on Twitter.

- Find IEMA's news and membership updates @iemanet.
- Find all IEMA events as they are confirmed @iemaevents.
- Find the latest jobs @iemajobs.

IEMA EVENTS

Date	Region	Topic
IEMA conferences		
29 March	East of England	Making the business case for climate action and resource efficiency in a changing world: the role of the environmental professional
Regional events		
28 March	North West	Eco-house visit
5 April	Scotland West	Waste management
19 April	Yorkshire & Humber	Implementing EMS on a multi-site operation
21April	Midlands	EMS auditing in practice
Membership workshops		
13 April	North West	Associate Open Book workshop
CDP workshops		
30 March	South East	Guiding you through a screening and scoping process for EIA
7 April	South East	Environmental law and legislation
13 April	Midlands	Get your message across: environmental communications

The DipSBP in practice

IEMA asks two former students of the pilot Diploma course about their experience of studying for the DipSBP and how achieving the qualification has benefited their professional status

Jason Posner
Senior environmental adviser, Export Credits Guarantee Department
Background:
BA in business and economics; IEMA foundation certificate; IEMA associate certificate; 10 years' experience at the Export Credits Guarantee Department

Why did you want to do the DipSBP? I need it for my job. I conduct environmental due diligence for ECGD and make recommendations to management on projects' compliance against international environmental standards. The DipSBP developed my understanding of the environment. An important part of my job is to build up my environmental knowledge and work towards Full membership of IEMA.

How would you describe your experience of studying for the Diploma? It was very tough; the assignments were very thorough and very time consuming, and I think they were very testing. But you get out of it what you put in. I tried to make the assignments as relevant to my job as possible and they proved to be very useful professional experiences.

What was the highlight of your time studying? The modules were all worthwhile. I really enjoyed the assignments on actual environmental impacts more than those on management theory.

If you had one word to describe the workload, what would that be? Heavy! But again, it was a fair reflection of the gravitas of the course.

Do you feel professionally more confident as a result of doing the Diploma? Doing the DipSBP has certainly given me a lot more confidence in my knowledge of the environment.

What are your future professional development plans as a result of studying with IEMA?
Hopefully, I will get getting some extra letters after my name in due course which are recognised within the industry as I am certainly planning to apply for Full membership in the near future.

Adrian Garrity
Senior safety, health and environmental protections adviser, UK Hydrographic Office
Background: Former police officer in the Metropolitan Police, now civil servant; IEMA foundation certificate, IEMA Associate certificate, five years' experience in the environment and sustainability sector

Why did you want to do the DipSBP? It was mainly a professional development need. I had been going up through the ranks of IEMA membership and qualifications. I completed the foundation course in 2005. I was part of our facilities management team back then and as environmental issues had no "home" to speak of in terms of central coordination, I proposed it came over to me. I then did the Associate certificate course. My organisation was doing a lot of good things but wasn't formatting them into a system good enough to be considered effective, so my employer sponsored me to do the Diploma to learn what I needed to know to get us towards 14001. By this time, I had been moved to the safety, health and environmental protection team, which I now manage.

How would you describe your experience of studying for the Diploma? Despite the time pressures of work, family life, study time and all of the Harvard referencing, it was genuinely enjoyable. I was very impressed with the course notes, as they were very comprehensive, and the standard of tutorship was great. The course leader's enthusiasm for the topic was a big boost and along with the out-of-hours and post-course support it's been a thoroughly worthwhile challenge.

What was the highlight of your time studying? Learning and practising new things while trying to develop them in the workplace. What I particularly liked was the fact that the assignments were work-based; the topics of climate change or biodiversity were applied to my own workplace. Also, on a personal level, some of the people I met on the course are still firm friends two years later, which is excellent.

If you had one word to describe the workload, what would that be? I'd say "challenging", but I appreciate that you don't achieve anything without effort.

Do you feel professionally more confident as a result of doing the Diploma? Certainly knowledge-wise. I was particularly grateful for the final part of the Diploma. It covered working with the board, report writing, looking at change models etc, which was very enlightening and it was good to hear about everyone else's experiences. I took something from that section that I could, and have, really used when working with senior management teams. The change models used in the course have proved faultless in practice.

What are your future professional development plans as a result of studying with IEMA?
I am now making a concerted effort to achieve Full membership soon and eventually go for Chartered Environmentalist status. I am also planning to do an MSc in health and safety.

Getting the collective voice of the profession heard

Leadership "The more businesses that report on their greenhouse-gas [GHG] emissions, the greater the financial and carbon benefits," says IEMA's chief executive Jan Chmiel in his latest comment article on *The Guardian's* sustainable business blog in February. "Practising professionals are clear that GHG reporting by businesses can make a unique contribution to overall energy and carbon reduction, to business competitiveness and in helping companies to adapt and prepare for the future green economy," he concluded.

The "practising professionals" that Chmiel refers to are the 80% of IEMA members who told us in our 2010 survey into GHG management and reporting that mandatory reporting should be introduced for companies as it can deliver significant benefits. His article is part of IEMA's ongoing strategy to influence government and help the media, particularly business titles, to understand the mandatory carbon reporting debate as it progresses.

The institute is only able to do this because of the contributions and evidence supplied by members through surveys, consultations and workshops.

You can add your voice via these portals throughout the year as IEMA continues to work on your behalf. IEMA will be contacting you to seek your views regularly, so please take the time to help us understand and represent your position to external audiences.

To read the full article visit www.lexisurl.com/iema6313.

More successful IEMA members

IEMA would like to congratulate the following individuals on the success of their Full (MEIMA), Chartered Environmentalist (CEnv) and Dual (MIEMA and CEnv) membership applications.

Full

Peter Dixon, Savills
Dave Fitzgerald, Viridor
Dianne Jarvis, Balfour Beatty
Peter Jones, GHD
Melanie Kenny, BAA
William Syddall, Bureau Veritas

Chartered Environmentalist

Steven Garcia, TNEI

Dual

Adrian Dawes, Mouchel
Lucinda Farrington, Carillion
James McIntyre, St Regus Paper
Angus Middleton, Renaissance Regeneration
Gabrielle Torkington, MWH

The Guardian, 8 February 2011

"The more businesses that report on their GHG emissions, the greater the financial and carbon benefits. Practicing professionals are clear that GHG reporting by businesses can make a unique contribution to overall energy and carbon reduction, to business competitiveness and in helping companies to adapt and prepare for the future green economy."

Carbon Connect's "Energy Efficiency: The Untapped Business Opportunity" Report / Click Green, 1 March 2011

"Martin Baxter, Executive Director - Policy at the Institute of Environmental Management and Assessment (IEMA), added: "Environmental practitioners working within business will welcome this report as further recognition that their role makes a real difference. Businesses that are managing energy as a resource are seeing real benefits from enhanced productivity and competitiveness."

Your voice - multiplied

iema
Institute of Environmental Management & Assessment

www.iema.net/news

Course provider	Location of course	Dates courses running				Contact details
		Apr	May	Jun	July	
ASSOCIATE CERTIFICATE IN ENVIRONMENTAL MANAGEMENT						
The associate certificate course can be delivered as part of an MSc, via applied learning, distance learning and residential learning. You can contact the course provider direct by telephone or email.						
Aviva Risk Management Solutions	Various UK	*	*	*	*	*risksolutions@aviva.co.uk* + 44 (0) 500 55 99 77
British Safety Council	Various UK			*		*ask@britsafe.org* www.britsafe.org + 44 (0) 2087 411231
Cambio Environmental	Abergavenny and Swindon		*	*		*julia@cambio-uk.com* www.cambio-uk.com + 44 (0) 1873 890819
Corporate Risk Systems	Various UK (also distance learning, applied learning)	*	*	*	*	*advice@crsrisk.com* www.crsrisk.com + 44 (0)1283 509175
EEF	Various UK	*		*	*	www.eef.org.uk/training + 44 (0) 8452 939850
Integra Training & Consulting	Sunderland	*				*enquiries@integratrainingandconsulting.co.uk* www.integratrainingandconsulting.co.uk + 44 (0) 1915 153341
Loreus	Distance learning	*	*	*	*	www.loreus.com + 44 (0) 1158 483050
The Key Consultancy	Bromsgrove				*	*gl@thekeyconsultancy.co.uk* www.thekeyconsultancy.co.uk + 44 (0) 1527 575182
TWI Middle East FZ LLC (TWIME)	Various overseas locations	*	*	*	*	*info@twihsetraining.com* www.twihsetraining.com + 971 4 446 2643 + 971 4 364 3013
University of Bath	Distance learning	*	*	*	*	*s.e.cox@bath.ac.uk* + 44 (0) 1225 386405
University of Derby	Derby (also distance learning)	*	*	*	*	www.derby.ac.uk + 44 (0) 1332 590500
University of London	Distance learning	*	*	*	*	www.soas.ac.uk/cedep/ + 44 (0) 2077 0745184
Waterman Environmental	London and Sheffield			*		*a.turley@waterman-group.co.uk* www.watermangroup.com/ + 44 (0) 1142 298900
WSP Environmental	London, Edinburgh and Manchester	*	*	*		*learningsolutions@wspgroup.com* + 44 (0) 1313 442300
INTRODUCTION TO EMS COURSE						
Bureau Veritas Training	Birmingham and London		*			www.bureauveritastraining.co.uk + 44 (0) 2079 026148
EMS IMPLEMENTATION COURSE						
ECUS	Sheffield		*			*training@ecusltd.co.uk* www.ecusltd.co.uk/training.html + 44 (0) 1142 669292
FOUNDATION CERTIFICATE IN ENVIRONMENTAL MANAGEMENT						
Bureau Veritas Training	Birmingham and London			*		www.bureauveritastraining.co.uk + 44 (0) 2079 026148
Cambio Environmental	Abergavenny and Swindon		*	*		*julia@cambio-uk.com* www.cambio-uk.com + 44 (0) 1873 890819
EEF	Various UK	*	*	*		www.eef.org.uk/training + 44 (0) 8452 939850

Course provider	Location of course	Dates courses running				Contact details
		Apr	May	Jun	July	
Mabbett & Associates	Belfast	*	*	*		www.mabbett.com + 44 (0) 1412 272300
Wiltshire College	Salisbury, Various UK			*		*guy.beards@wiltshire.ac.uk* + 44 (0) 1722 344213
FOUNDATION COURSE IN ENVIRONMENTAL AUDITING						
Aspects International	Various UK	*	*	*	*	*john@aspexint.com* www.aspexint.com + 44 (0) 1423 781218
University of Brighton	Brighton	*				*ctc@brighton.ac.uk* www.brighton.ac.uk/ctc + 44 (0) 1273 642305
INTERNAL EMS AUDITOR COURSE						
Bidwell Management Systems	Various UK (In-house courses only)	*	*	*	*	*marek@bmstraining.co.uk* www.bmstraining.co.uk + 44 (0) 7718 985962
ECUS	Sheffield			*		*training@ecusltd.co.uk* www.ecusltd.co.uk/training.html + 44 (0) 1142 669292
Excel Partnership	Various UK		*	*	*	*training@excelpartnership.co.uk* www.excel-world.co.uk + 44 (0) 1442 242929
Marsden International (UK)	Various UK (online and blended learning)	*	*	*	*	*info@marsden-international.com* www.marsden-international.com + 44 (0) 1302 752123
WSP Environmental	London, Edinburgh and Manchester	*	*	*		*learningsolutions@wspgroup.com* + 44 (0) 1313 442300
LEAD ENVIRONMENTAL AUDITOR COURSE						
Aspects International	Various UK			*		*john@aspexint.com* www.aspexint.com + 44 (0) 1423 781218
BSI Training	Swindon, Manchester, London, Northampton and York	*	*	*		www.bsigroup.co.uk/training + 44 (0) 845 086 9000
Bywater Training	Wakefield, London and Oxford		*		*	*sales@bywatertraining.co.uk* + 44 (0) 1908 543900
EQA Asia Pte	Furama Riverfront, Singapore	*			*	*training@eqsasia.com* www.eqsasia.com/ + 65 62 218006
ERM CVS	Various UK, North America and Asia		*	*		*matt.bayram@ermcvs.com* + 44 (0) 2032 065281 + 1 973 519 5962
Excel Partnership	Various UK	*	*	*	*	*training@excelpartnership.co.uk* www.excel-world.co.uk + 44 (0) 1442 242929
IQMS	Various UK			*		*enquiries@iqms.co.uk* www.iqms.co.uk + 44 (0) 1915 169191
LRQA	Various UK	*	*	*	*	*lrqatraining@lrqa.com* www.lrqatraining.co.uk + 44 (0) 800 328 6543
SGS UK	Various UK	*	*	*		www.training.sgs.com/uk + 44 (0) 1276 697777
Sustainable Growth Company	Aberdeen, London and Manchester	*	*	*		*cer@sgc91.com* + 44 (0) 1484 681796

Course	Course provider	Location of course	Dates courses running Apr	May	Jun	July	Contact details
CPD & OTHER APPROVED COURSES							
Acorn EMS implementation	Groundwork UK	Cheshire	*	*			*karen.imbro@groundwork.org.uk* + 44 (0) 1606 723175
Carbon, GHGs, foot printing, accounting and management	Aspects International	Various UK	*	*	*	*	*john@aspexint.com* www.aspexint.com + 44 (0) 1423 781218
Carbon, GHGs, foot printing, accounting and management	Conestoga Rovers & Associates (Europe)	Various UK	*		*		*training@cra.co.uk* + 44 (0) 115 965 6700
Carbon, GHGs, foot printing, accounting and management	Olive Consultancy	Southampton			*		*chutton@consultolive.com* www.consultolive.com + 44 (0) 2380 111440
Carbon Reduction Commitment	Olive Consultancy	Southampton	*				*chutton@consultolive.com* www.consultolive.com + 44 (0) 2380 111440
Certified (CSR) sustainability practitioner training	Centre for Sustainability and Excellence (CSE)	Various UK, USA, EU and Middle East			*		*info@cse-net.org* www.cse-net.org + 30 210 808 5565; + 1 773 714 5065
E nvironmental awareness	RBS Mentor	Various UK	*	*	*		*fiona.taylor@mentor.uk.com* + 44 (0) 1412 274584
IEMA environmental awareness	Gibson Consulting & Training	Various UK	*		*	*	*Gillian@gbgibson.com* www.gbgibson.com + 44 (0) 1829 732648
IEMA environmental awareness	Olive Consultancy	Southampton			*		*chutton@consultolive.com* www.consultolive.com + 44 (0) 2380 111440
Renewable energy options	On Site Generation	Edinburgh		*	*		*info@onsitegeneration.co.uk* www.onsitegeneration.co.uk/ + 44 (0) 1314 409020

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Santia Consulting Ltd are the UK's leading provider of solutions for health and safety risk management. We deliver the widest range of services on a national basis, including consultancy, training, auditing, reporting, inspection, testing and maintenance.

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Closing date for applications: 25/03/11

GIS/Data Management Adviser
Closing date for applications: 25/03/11

Environmental Consultants and
Senior Environmental Consultants
Register interest with your CV. These posts will be filled on an ongoing basis as our workload increases.

Further information about the jobs and how to apply is available at www.niras.com/jobs or contact Rachael Mills, Telephone 01223 370181, Mobile 07505828381, RFM@niras.com.

NIRAS A/S www.niras.com

Swift DataPro
Local Government Software

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Swift DataPro Software provide Contender StreetScene software to local authorities to assist in the management and delivery of their services.

Whether directly managed or by contract our software meets the needs of our customer base in relation to

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- grounds maintenance
- "streetscene" and recycling

We wish to recruit a software consultant with 3 to 5 years relevant experience.

An understanding of how local authorities provide waste management services would be an advantage as would experience of using a computer system to manage waste service delivery.

This role involves product demonstration, consultancy, training and customer support. Although based in Brighton the role will involve travel throughout the UK.

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Please send your CV with a covering letter to: jobs@swiftlg.com

www.swiftdatapro.com

Joe Somevi

Sustainability officer, Aberdeen City Council and Abderdeenshire Council

Why did you become an environmental professional?
To continuously improve my knowledge and skills in the sustainability field.

What was your first environment job and how did you get it?
Manager of environmental business and regeneration at a London-based charity. I visited and challenged a community-based charity about the benefits of integrating the environment into a business. I was then given a few months to prove my point and to shape the charity along environmental lines. The charity soon made substantial profits and retained me as their manager.

How did you progress your environment career?
I built on my success in London to shape strategic environmental assessment (SEA) in Aberdeenshire and the city of Aberdeen. Environmental management experience, membership of IEMA and a PhD in SEA put me into the position initially. A demonstration of more than £1.5 million savings in a very short time, as well as winning Scottish Awards for Quality in Planning in 2006 for the project, swayed my employers to convert a temporary SEA-focused position to a permanent and broader sustainability position.

What does your current role involve?
It involves developing resources, raising awareness, training officers and support staff, and coordinating and monitoring the delivery of SEA and habitat regulations assessment.

How has your role changed over the past few years?
In 2005, the emphasis was on resource development, awareness raising and auditing of plans, programmes and strategies. Between 2006 and 2008, the emphasis shifted to training, delivery and integration of SEA. Since 2008, in my role as sustainability officer, I have contributed to a broader sustainability agenda, including climate change. I have developed courses on socio-economic impact assessment, and collaborated with others on an integrated impact assessment toolkit.

What's the best and hardest part of your work?
The best bit is when awareness on SEA has cascaded from senior management to officers to such a degree that it is the officers themselves who are taking the initiative to ask to carry out SEAs in support of the planning policy statements (PPS) they are developing, rather than you chasing them. The hard bit is trying reach those officers who do not get "the message" no matter how hard you try.

What was the last development/ training course/event you attended?
DECC offshore energy strategic environmental assessment 2 – stakeholder workshop.

What did you bring back to your job?
I now hope to adopt the format used in identifying potential effects of PPS alternatives within the context of SEA topics.

What is/are the most important skill(s) for your role and why?
You need skills in people and organisational management as well as leadership. Project and resource management are key to the success of my role, and skills in collaborative and interdisciplinary working are essential.

Where do you see the environment profession going?
I see the profession expanding: the number of environmental jobs aligned to national and EU legal obligations in the public and private sector will grow, and jobs in climate change, carbon management and community projects are likely to increase too.

CAREER FILE

Qualifications:
BSc (Hons), MSc, PhD, MRICS, MRTPI, MIEMA

2008 to now:
Sustainability officer (SEA), Aberdeen City Council and Aberdeenshire Council

2005–08:
SEA officer, Aberdeen City Council, Aberdeenshire Council and Scottish Enterprise Grampian

2002–05:
Manager, Queensbridge Trust, London

1987–97:
Lands officer/senior lands officer, Lands Commission, Ghana

Where would you like to be in five years' time?
I hope to build on my experience in a private practice and complete some publications on SEA practice in Scotland.

What advice would you give to someone considering going into the environment profession?
Aspirants should be patient, creative and current. They should also remain relevant. For a start, you should be willing to volunteer.

Tell us about your career
The My Career page aims to inspire other environmental professionals by showing how an individual has progressed her/his career. If you have a career story that you'd like to share with your IEMA colleagues, please contact paul.suff@lexisnexis.co.uk.

RPS

RPS is an international consultancy providing advice on the development of natural resources, land and property, the management of the environment and the health and safety of people. RPS Energy helps clients develop natural energy resources across the complete asset cycle, combining our technical and commercial skills with an in-depth knowledge of environmental issues. With office's based in the UK, Ireland, Australia, Asia, Middle East, The Netherlands, USA and Canada.

RPS employ enthusiastic, talented staff with a unique blend of skills and experience that enables them to provide reliable and practical advice.

Delivering results for our clients enables us to offer our people rewarding careers and create long-term value for shareholders.

Currently we are recruiting for a variety of environmental focused roles across all levels, to be based within our UK offices.

Responsibilities will include but not necessarily be limited to:

- Project financial and commercial management
- Client management within their core skill areas
- Manage project, technical, financial issues as directed by the Project Managers
- Ensure project, timescales, budgets and technical quality are met
- Plan forward workloads and ensure employee utilisation is optimised
- Identification of business improvement opportunities

For more information on the above roles and similar then please visit **www.rpsgroup.com** **www.joinrps.com**.

Or alternatively contact
Nicola Searle – Recruitment Coordinator
searlen@rpsgroup.com 01483 746500

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Environmental Impact Assessment (EIA)

Principally we are searching for an individual with extensive experience in the Environmental Impact Assessment (EIA) process to support a mining job in West Africa. The ideal candidate will have mining experience though it is not essential. A solid background in the environmental issues associated with mining is sought; e.g. ecology, hydrology, waste, pollution, cultural and historical heritage and sustainability. Long term the successful candidate will provide support to a range of Energy and Chemicals projects and so will have a diverse range of expertise including ISO 14001 Management Systems, emissions modelling and acoustics. The role is based in Farnborough though short term travel to project sites or client/contractor offices should be expected.

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- Principal and Senior Hydrogeologist
- Group Leader – Impact Assessment
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- Senior Marine Scientist
- Environmental Manager – Contaminated Land
- Environmental Manager – Water Sensitive Urban Design
- Environmental Manager – Mining
- Senior Tailings Engineer

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If you're tempted by the career and lifestyle opportunities that working in Perth, Western Australia offers, please contact:

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michelle.prebble@hays.com.au
+61 8 9486 9553

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LOGISTICS/FACILITIES MANAGEMENT/FINANCIAL
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& DEVELOPMENT/PUBLIC SERVICES/ACCOUNTAN
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INFORMATION TECHNOLOGY/SALES & MARKETING
RATEGY/BANKIN PUBLIC SERVICES
MARKETING/ENE RESOURCES & MIN
ININGTELECOMS ENGINEERING/H
HUMAN RESOURC CONTACT CENTRI
TRES/FINANCIAL ES/SOCIAL CARE
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PROCUREMENT/H LEGAL/OIL & GAS

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Contact: John Rowland - Technical Director | Tel. +44 (0) 20 7394 3700 | john.rowland@templegroup.co.uk

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Our main focus is the registration of agrochemicals, biocides, industrial chemicals and pharmaceuticals. Our services include the evaluation of data completeness, compilation and assessment of raw data, and preparation of risk assessments and dossiers for submission to the relevant authorities.
To support our team in Mannheim, Leverkusen, Cardiff or Basel we are currently seeking an Experienced Environmental Scientist.

Role and responsibilities:

- Predict the fate and behaviour of pesticides and related products in the environment (soil, water and air)
- Use regulatory simulation models to calculate environmental concentrations
- Develop risk assessment solutions for our clients, including higher-tier approaches
- Report results in compliance with registration requirements for agrochemicals
- Prepare assessment reports and dossiers for the regulatory authorities
- Build-up, maintain and share practical knowledge in a growing, strongly team-oriented working group
- Represent the working group and company at conferences and workshops
- Established network within industry, authorities and academia

Profile and qualifications:

- Broad working experience in regulatory exposure modelling for plant protection products (> 5 years)
- Sound knowledge of relevant regulatory guidelines (e.g. FOCUS guidance)
- Practical experience in one or more of the following fields: interpretation of e-fate studies (e.g. normalisation, evaluation of kinetic and sorption behaviour), GIS
- PhD or comparable qualification would be an asset
- Good interpersonal skills
- Ability to work in a team and self-motivated
- Excellent communication and presentation skills
- Excellent language skills in English (spoken and written); additional language skills (German or other) would be an asset

Benefits:
You will be working with a high degree of responsibility and independence in a modern, professional, fast growing internationally active organization.

Location
Mannheim or Leverkusen (Germany), Cardiff (United Kingdom) or Basel (Switzerland)

Please submit your complete application in English or German, including a detailed Curriculum Vitae, salary expectation and availability, to:
DR. KNOELL CONSULT GmbH, Marion Lohnert, Dynamostrasse 19, D-68165 Mannheim, Germany, or e-mail to application@ knoellconsult.com, quoting reference 2011-07

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