



INSTITUTION OF ENVIRONMENTAL SCIENCES

ANNUAL REPORT²⁰¹⁶

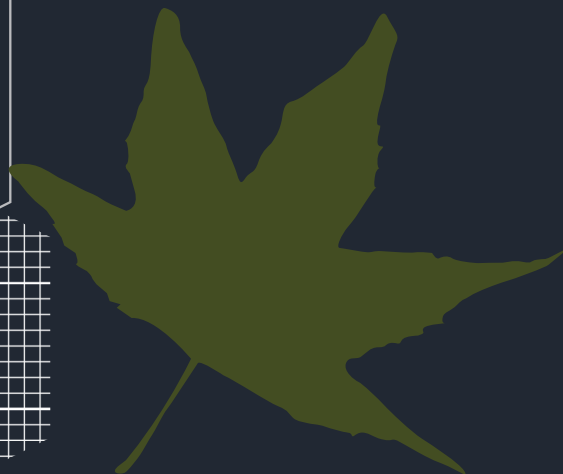
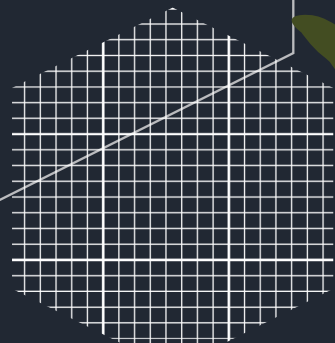
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“ENVIRONMENTAL SCIENTISTS MUST BE ALERT TO VARIOUS CHANGES IN ENVIRONMENTAL POLICIES AND CHALLENGE DECISIONS DETRIMENTAL TO THE LONG-TERM PRESERVATION OF OUR ENVIRONMENT”



In last year's report, I reflected on how the IES were providing benefits for our Members and contributing to the wider discussions concerning environmental matters. This year, I wanted to consider how certain external events of the past year have given both cause for concern and celebration within the sector.

Noel Nelson
Chair of Council, March 2017

A note from our Chair

Last year saw issues unfold, both positive and negative, for the natural environment. News that installations of new renewable electric-generating capacity outpaced the growth of their fossil fuel counterpart was well received; a trend which, despite President Trump's recent Executive Order, is not expected to abate. The bulk of global power production is still from fossil fuel based sources but, at current growth rates, renewable energy production will overtake coal by 2040.

Staying with the USA, the Obama administration protected millions of acres of Atlantic and Arctic Ocean from future offshore oil and gas exploration. Protection of the marine environment is difficult as it requires agreements from multiple countries. It is therefore commendable that Costa Rica, Ecuador and Columbia collaboratively protected 10,000 square miles of ocean wildlife corridors near the Galapagos and, unprecedentedly, 25 countries (including the UK, Brazil, South Africa and Russia) agreed to leave the Ross Sea untouched, forming the world's largest protected marine area.

The long struggle to eradicate hydrofluorocarbons (HFCs), used in refrigerants and air conditioners, continues. As the economies of developing countries improve, the use of these chemicals has grown. Following a meeting in Rwanda, nearly 200 countries announced they would replace HFCs with cleaner alternatives from 2019 to reduce emissions by 90% by mid-century. Furthermore, in 2016, CO₂ emissions rose by less than 0.25%, the third consecutive year for unexpected low growth. With the 2015 Paris Accord gathering enough signatories to allow the global climate pact to take force, 2016 had some notable highlights for environmentalists. Nonetheless, 2016 also had its fair share of

disconcerting news. In the UK, the decision to permit fracking in North Yorkshire was announced, following failed legal challenges by environmentalists on climate change grounds. Friends of the Earth claimed councillors did not have access to the correct total carbon emissions likely to be produced. Third Energy, the company responsible for the project, are determined to allay the fears of the community, with fracking likely to commence sometime during 2017.

No discussion of last year's events would be complete without reference to Brexit. The announcement heralded widespread concern about the impact on our environmental standards and willingness to continue implementing improvements. Environmentalists' uppermost concerns are the loss of European-based nature protection laws relevant to protecting birds and habitats, air and water pollution, GM foods and animal welfare.

The Common Agricultural Policy (CAP) offers EU subsidies to farmers, linked to the amount of land farmed rather than actual farming produce. Only small amounts are given to farmers for upholding strict environmental standards (e.g. making space for wildlife). This has been an area of much concern amongst environmentalists for some time, and Brexit could offer an opportunity for change. However, ahead of the referendum, much was made about farmers receiving financial help in the event of the UK leaving the EU to compensate for lost subsidy funds and, generally, that regulation would be reduced. The worry now is that, in light of tough negotiations, pressure to deregulate might be strong under a 'deals-at-any-cost' approach. Additionally, post-Brexit key trading partners such as the USA

and China have lower animal welfare standards and higher adherence to intensive farming which contributes to failing environmental standards. It is the IES's view is that farming subsidies should be more strongly linked to environmental protection with outcomes designed to benefit public good.

The 2016 legal battles between ClientEarth and the Government raised the profile of poor UK air quality. Government policies have resulted in vast improvement to some pollutants over the last 60 years, but improved understanding of the science and health effects clearly indicates further action is required. The prime target for new measures is vehicle emissions, exacerbated by disappointment over some cars' performances under 'real-world' operating conditions, which manufacturers attempted to hide. A new air quality plan is due shortly, and the Government faces pressure to deliver a diesel scrappage scheme to remove the most polluting cars from our roads. Careful consideration is required to aid those who lack resources to replace older vehicles. Government's message to motor manufacturers must be unified, supporting policies on both climate change and air quality. Recently, it is clear to me that Government have begun addressing this urgent problem. Effort is underway to get Defra working with Department of Transport, something Government Chief Scientific Adviser, Sir Mark Walport, has requested.

Environmental scientists must be alert to various changes in environmental policies, both UK and further afield, and challenge decisions detrimental to the long-term preservation of our environment. This is something we in the IES will continue to champion.

06

Whatever stage you are at in your career, the IES has membership services that will help you gain recognition and progress to the next level. Members come from all areas of the environment sector, wherever jobs are underpinned by science.

07

Growth in IES membership in 2016: **8%**

Growth in IAQM membership in 2016: **15%**

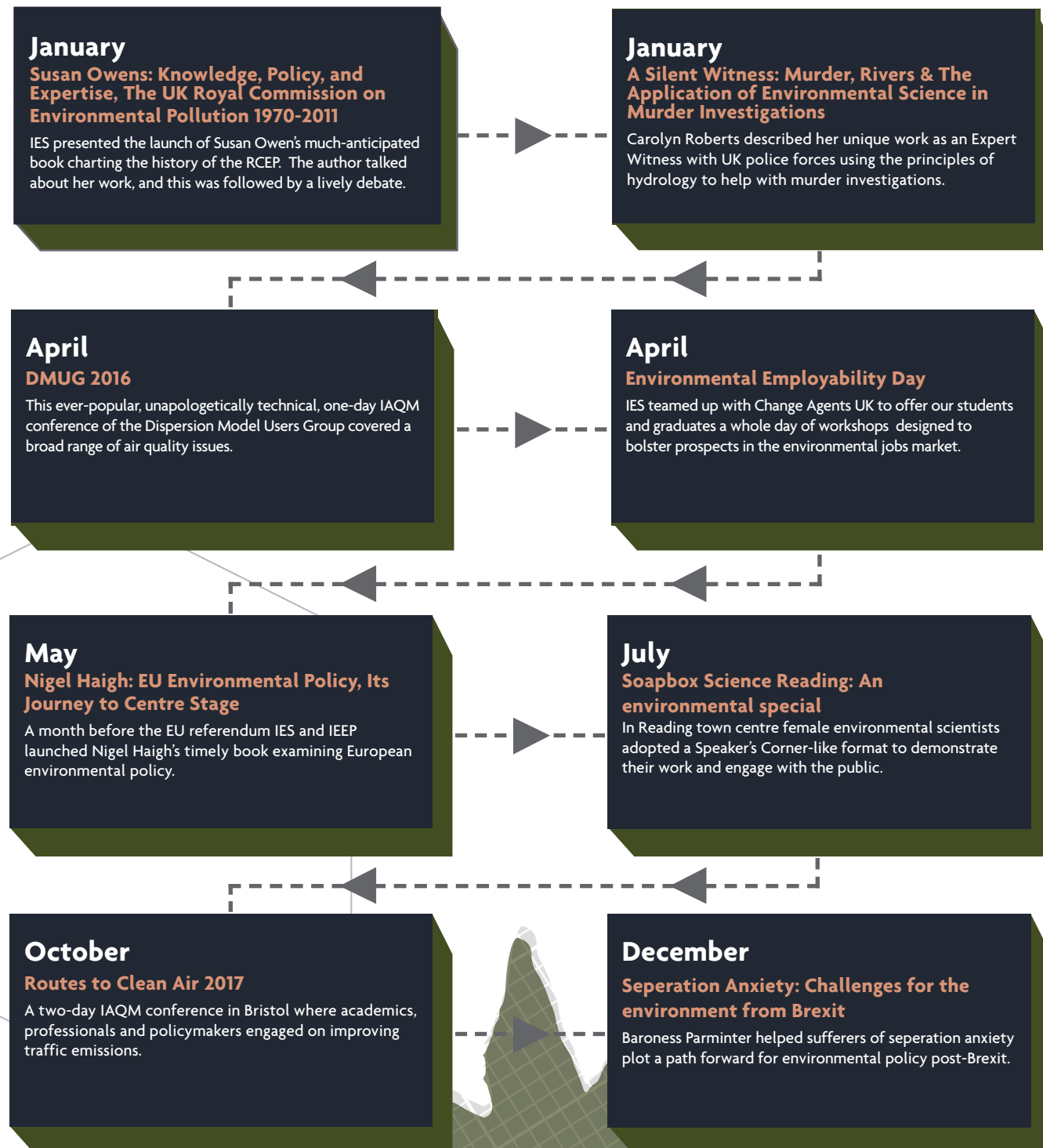
12% growth in number of Chartered Environmentalists

8% growth in number of Chartered Scientists

17 HE/FE degree programmes accredited

Aiding professional development

Event highlights from 2016



environmental SCIENTIST

Growing in Space: Science beyond the biosphere



As space exploration becomes evermore ambitious and far-flung, we are in turn learning more about our own planet. This ambitious edition looked beyond our own biosphere to address complex ethical questions of how our environmental obligations apply to space exploration, and how Earth Observation technology has changed how we study terrestrial environments.

Quadrophilia: How decentralisation has helped the environment



This issue highlighted several devolution success stories in environmental policy, with analyses of how climate change adaptation is being addressed in each of the devolved administrations, and how Brexit may affect devolved environmental policy in the UK. The environmental sector needs to embrace new approaches, and this issue aimed to evaluate options available, highlight best practice, and encourage reflection.

They walk among us: The rise of citizen science



A minor revolution is taking place in research, and the environmental sciences are leading the way. Non-experts ('citizens') are now able to get involved with active research, due to development of new and easy-to-use portable technology such as the smartphone. This issue highlighted examples of exciting and innovative citizen science successes, but also sought to address concerns over participant motivation and data quality.

Issues planned for 2017

March: Feeding the nine billion

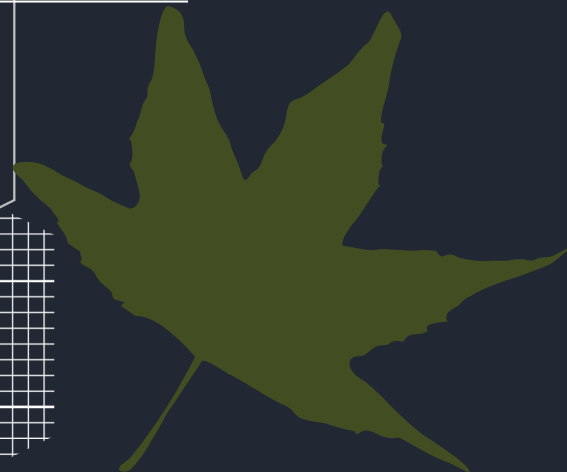
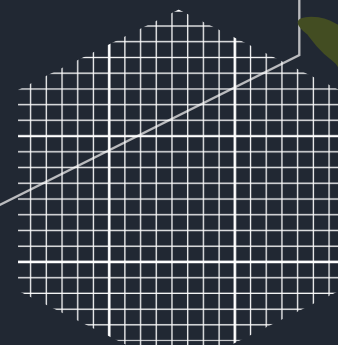
April: Air Quality

July: Sustainable Development Goals

December: Living Labs



**“EVERY YEAR THE STAFF
AT THE IES RAISE THE BAR
OF MEMBERSHIP SERVICES,
EVENTS AND POLICY. THEIR
EFFORTS ARE GREATLY
APPRECIATED BY THE IES
COUNCIL, AS IS THEIR
POSITIVE EFFECT ON THE
SECTOR AND MEMBERS AT
EVERY LEVEL.”**



Being “great”, “the best”, and “winning bigly”, seem to be a popular way of measuring success lately. Luckily for the Institution of Environmental Science and its members, 2016 was a demonstrably fantastic year: greatness and winning abound.

Phil Holmes
Honorary Secretary, March 2017

Honorary Secretary's Report

In our pursuit of greatness, no stone was left unturned in our far-reaching analysis of the sector. From trees in space to microbeads in ecosystems, the IES, through its Analysis webpages, explored topics designed to expose all of us to science at the very boundaries of our everyday work. Closer to home was the subject of Brexit, in which we delved into the potential unravelling of environmental protection, the case for systems thinking, and how issues around air quality are tightly bound to our political and geographical landscape.

Politics inevitably spilled into our events programme, where members and other sector specialists joined Baroness Parminter for our thought-provoking Burntwood Lecture, to hear about the potential challenges for the environment under Brexit. Meanwhile, we continued our virtual member events with several webinars, one discussing EU funding, another an introduction to the circular economy. I encourage members to look out for webinars as a useful tool for CPD, and to

even consider presenting one too – just contact the office for details. My thanks to Emma Fell and the team for organising a myriad of events this year.

Representing our members' interests, their jobs, and the environment was a task taken to great levels in our policy and publication work, led by Robert Ashcroft. Reflecting our members' views on Brexit, we examined its implications for science and research. In addition, position statements were delivered to inform government thinking on air quality issues related to sensitive habitats and NOx emissions. As part of an effort to give members a greater voice, the IES worked in tandem with other professional bodies to deliver a communiqué on lower carbon and cleaner air.

Some of the best editions of the environmental SCIENTIST were produced this year. A journal navigating the consequence of decentralisation reminded us that environmental problems cross borders but often require local action,

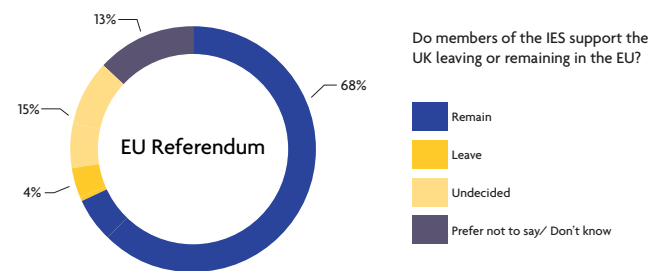
whilst an issue about citizen science illustrated how the scientific method is one in which everyone can partake, no matter specialism or ability. These topics, coupled with a fascinating edition about science in space continually underlined the need for cooperation in environmental science, for the benefit of all.

Every year the staff at the IES raise the bar of membership services, events and policy. Their efforts are greatly appreciated by the IES Council, as is their positive effect on the sector and members at every level. Whether joining the Institution, getting involved in webinars, publications or regional groups, the team is always there to offer support. My thanks go to all staff members for their dedication, and to all those on Council for the direction and input they give to the team.

With a “winning” 2016 behind us, the IES is in *the best* position as we head into an uncertain 2017.

“ In our pursuit of greatness, no stone was left unturned in our far-reaching analysis of the sector.”

The Question of Brexit



In a year of political upheaval, the IES ensured that we were engaging with both our members and decision-makers on the EU referendum, a decision with the potential to have a huge impact on the environment.

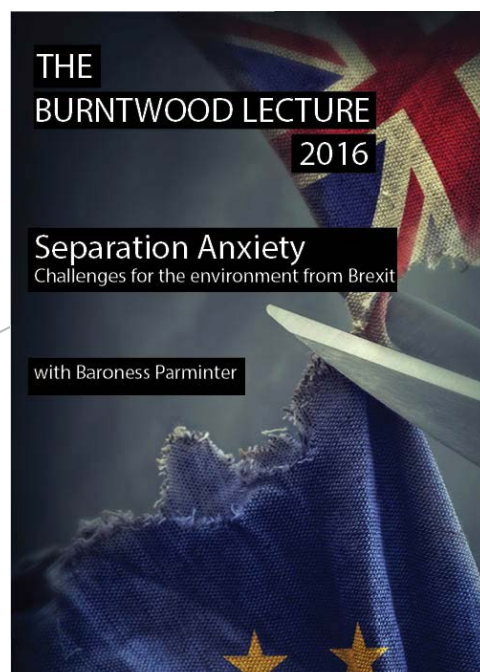
In our survey before the referendum, it was clear that the majority of IES members felt we would be better off inside the European Union; only 4 per cent of respondents supported leaving.

Before the referendum, our submission to a select committee inquiry highlighted that as a profession our work has been significantly shaped and influenced by EU Regulations and Directives. We also emphasised the importance of interdisciplinary and cross-boundary environmental research.

We also published several discussion pieces online, seeking to draw attention to the facts around EU membership and environmental science in the UK, and sharing the views of our members.

Post-referendum it quickly became clear that the Government now has a huge task negotiating a path forwards, and reviewing a substantial body of EU and transposed legislation. Our work since the 23rd June has focused on ensuring scientific evidence is used to inform policy decisions about environmental matters post-Brexit. We have responded to several parliamentary select committee inquiries, maintained regular contact with officials across government, and been working collaboratively with other professional bodies and learned societies to present our shared vision for the natural environment.

In 2017, as the consequences of the decision to exit the EU still reverberate, we continue our collaborative efforts to engage with government, and work towards a positive future for science, scientists and the natural environment.

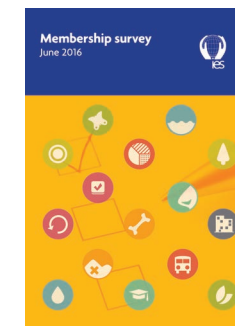


Website

- ▶ **75% increase in the number of Twitter followers (@IAQM_UK) in 2015**
- ▶ **33% increase in Salary Survey respondents compared to previous survey (2014)**
- ▶ **50,913 hours of CPD recorded on our online tool**

Reports & Guidance

Membership Survey



The IES surveys its members each year to get an understanding of how they received the services provided that year, which services are particularly valued and what they might like to see in coming years. The 2016 survey saw a positive response to our increased policy activities, with 83% of members thinking it is important that the IES represent them in policy issues. The journal also rated highly in importance.

Salary Survey



Our biennial salary survey report which explores trends in the environmental science sector. It looks at differences in pay across sectors, job positions, membership grades, ages and gender. Results showed that of our respondents, there was a 16% wage gap between genders, more senior positions were held by a larger proportion of males, and those with doctorates earned a higher average salary.

Guidance on the Assessment of Mineral Dust Impacts for Planning



Air quality professionals are frequently required to assess dust impacts from mineral sites, particularly as part of the planning process. Currently there is little government guidance on how a dust assessment should be undertaken. This document was prepared by the IAQM to assist practitioners undertake dust assessments for mineral sites. It aims to provide advice on robust and consistent good-practice approaches.

73% of members rated our reports as very or moderately interesting in the 2017 membership survey.

Analysis pieces in 2016

- CCS in the UK: has it gone up in smoke?
- The REF and institutional sustainability: making a difference at home?
- Trees in Space: no longer the forbidden fruit
- What is an ecosystem and why is it important?
- The Government's 25 year plan for the environment
- Air Quality inside the European Union
- Science and the EU: systems thinking for our shared environment
- Brexit is no mandate to unravel environmental protection
- Making sense of the new political landscape
- Why your CPD reflection has to improve
- Space Weather
- The motivations of volunteers in citizen science
- 5th carbon budget: we have the vision to drive change, now we need the policies
- Mixed picture for environmental scientists in last Autumn Statement
- Banning the bead: What is the likely impact of banning microbeads in cosmetics?

Past & Present

2016 2017

Marking contribution

Our Fellowship Committee made substantial changes to our Fellowship application process and began a target campaign to recruit more female Fellows.

Recognising Experience

Our number of Chartered Environmentalists grew by 12% in 2016, the largest increase for five years.

Virtual CPD

Towards the end of 2016 the IES started its new webinar programme with lunchtime CPD on issues including the circular economy and EU funding.

Strong start

The IAQM's new Early Career Group will help those at the start of their career journey in air quality, with their first event to be held in June.

Chartership support

To support our members going for Chartership we will soon be launching a mentoring scheme, and increasing our capacity to deliver more frequent Chartership workshops.

Digital strategy

The IES has some big plans to ensure that learning can be delivered at a time that is convenient to you, wherever you are in the world.

Unfolding Issues

The environmental SCIENTIST covered issues around environmental science in space, citizen science and devolution.

The EU referendum

As the debate over the UK's future in Europe raged, the IES ensured the evidence over what a Brexit would mean for the environment was heard amongst the clamour.

Salary survey

The IES Salary Survey - the definitive guide to salaries in the sector - broke down average salaries and ranges by gender, age, sector and membership type.

New Starts

The 2016 AGM saw an unprecedented nine new members elected to our governance committee. We also split our Publication and Policy roles, welcoming Michelle Reeve to the team as our new Publication Officer.

New ventures

Four journals will be delivered to your door this year on food, air quality, the Sustainable Development Goals (SDGs) and Living Labs.

The SDGs


We will be continuing to focus on outcomes for the EU negotiation, but to maintain a positive international outlook, we will also be focusing efforts on the SDGs.

Employability focus

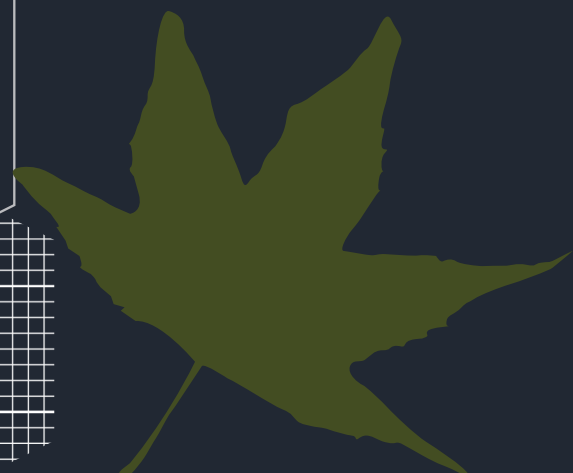
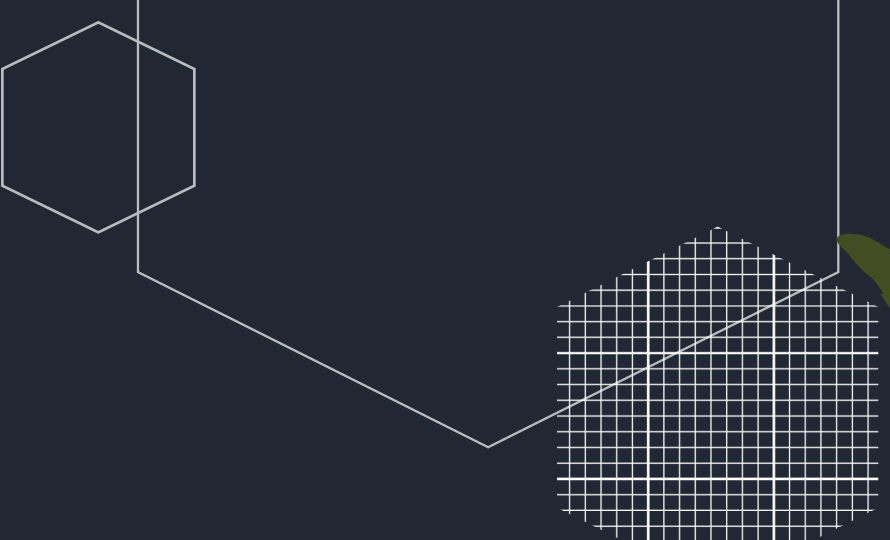
The Wakeham Review highlighted some challenges for the sector to ensure that graduates can build fulfilling careers in the sector. The IES and CHES will be putting together a programme to address this.

Increased capacity

This year we have recruited Rhianna Jarvis as our new Events Manager and have plans to expand the office team further later this year.



**“THE PRIMARY AIM OF
THIS NEW STRATEGY IS
TO CREATE A BIGGER,
BROADER AND MORE
ENGAGED MEMBERSHIP,
PARTICIPATING IN THE
RUNNING OF THE
INSTITUTION AND THE
PRODUCTION OF SERVICES.”**



Environmental challenges are complex, multi-faceted and cross-professional. Our institutions need to mirror this if we are to fulfil our aim of creating a professional and empowered environmental sector.

Adam Donnan,
CEO, March 2017

Redefining environmental science

In a series of workshops held during 2016, the IES Council and staff came up with a new overarching mission statement for the organisation. This new vision for the Institution has shaped a new strategy which will be published later this year.

Environmental science is as diverse as the environment itself. Our previous definition of environmental science - “an academic field that integrates physical and biological sciences” - no longer adequately captures the range of scientists who contribute to the field. As the science of sustainability becomes more sophisticated, it pulls more scientific disciplines into its orbit. As a result, the environmental sector has grown substantially in numbers and in the range of specialisms that it encompasses.

Tasked with developing a more modern definition of environmental science, in January 2017, an IES working group came up with the following:

“Environmental science is an integrative academic field, unifying the physical, chemical, biological, engineering and social sciences in the study of the environment and in finding sustainable solutions to environmental challenges.”

This new definition poses a challenge to our current membership criteria, which must be modernised to reflect changing circumstances in the sector. To this end, our ‘Boundaries of Membership’ working group are developing a new set of membership criteria for our future membership base.

The new definition of environmental science is just one part of a much broader re-examination of the role of the IES. The primary aim of this new strategy in this area is to create a bigger, broader and more engaged membership, participating in the running of the Institution and the production of services. Members themselves will generate dialogue, develop

solutions and follow their own learning paths through the resources provided by the Institution. The role of the Project Office is to act as the facilitator, project manager, communications hub and loudspeaker for members’ expertise. Participation and co-creation lies at the heart of this strategy.

Legislative environmental gains may be under threat from Britain’s decision to leave the EU. The devolution of power from Westminster means environmental decision and policy making is dispersed. Environmental professional bodies have a role in ensuring that environmental protections survive Brexit, and that UK-wide and devolved legislation and regulations work effectively for the economy, nature and society.

Our new strategy will guarantee that the IES continues to exceed the expectations of its members and ensures that evidence is at the heart of decision making.

“This new definition poses a challenge to our current membership criteria, which must be modernised to reflect changing circumstances in the sector.”



Statement of financial activities

July 2015 - June 2016

	2016 £	2015 £
<i>Incoming resources</i>		
Voluntary income	289,243	209,415
Investment income	57	81
Total incoming resources	289,243	209,415
<i>Resources expended</i>		
Total resources expended	265,399	216,775
Net movement in funds	23,901	(7,279)
Fund balances at 1 July	86,691	93,970
Fund balances at 30 July	110,592	86,691

The statement of financial activities also complies with the requirements for an income and expenditure account under the Companies Act 2006.

Sister organisations

IAQM

The European Commission designated 2013 the 'Year of Air'. They chose the wrong year. It should have been last year. Not because concentrations were particularly high or the problems have been solved, but because of the degree of interest in air pollution shown by policy makers, the media, and of particular importance, the medical profession. It almost seemed like everyone (with some notable exceptions) wanted to get in on the act in 2016.

Our two conferences (DMUG and RTCA) are now established events in the air quality calendar. In 2016 we supplemented these two major events with our usual series of discussion meetings and launch/review events for our guidance.

In May we published new Guidance on the Assessment of Mineral Dust Impacts for Planning. This IAQM document has been prepared to assist practitioners undertake such dust assessments for mineral sites. It provides advice on robust and consistent good-practice approaches that can be used to assess the operational phase dust impacts.

After publication, we keep our guidance under review, talking feedback from our members about how it is working 'in practice'. In this vein, we made some minor changes to our Construction Guidance and initiated a review of the Land-use Planning and Development Control Guidance.

GROWTH OF IAQM ASSOCIATE MEMBERSHIP IN 2016: 27%

Our guidance was supplemented with the publication of two position statements on determining the AQ impacts on sensitive habitats and dealing with uncertainty in NOx emissions.

Our membership grew by 15% last year, the largest percentage increase since 2011. In 2017 we should reach 400 members, a significant milestone in the development of

the Institute.

In 2017 we are resolved to broaden the geographical reach of our services, with events planned in Birmingham and Manchester.

CHES

2016 was an incredibly busy year for our accreditation programme. CHES accredited an unprecedented seventeen degrees in six institutes. Ten of these were at Bachelor-level and seven were Masters-level programmes. The CHES/IES accreditation scheme continues to be the accreditation programme of choice for environmental science and related programmes. During the year we updated our accreditation process to ensure we were collecting the right information from applicants

83 PROGRAMMES ACCREDITED ACROSS 33 UNIVERSITIES AND COLLEGES

Substantial work has been done on integrating our accreditation scheme into the IES database in preparation for creating online student membership signups.

Big changes are afoot within education with the new TEF initiative. To ensure that this system meets the needs of our university departments and students, CHES led on the IES response to the TEF consultation.

The Wakeham Review made a number of recommendations about accreditation and employability within the sector that will affect our accreditation scheme in future years. We will be running a workshop to decide our response to this in 2017.

In 2017 we will be guest editing an edition of the environmental SCIENTIST looking at how universities use their campus and communities as living laboratories. We will also be launching our new branding to ensure that our public image reflects the modernity of the organisation.

Council Officers & Staff Members

Senior Vice President: John Baines MBE
Vice Presidents: Heather Barrett-Mold, Jenny Blumhof, Mark Everard, Jim Longhurst, William Pope, Carolyn Roberts

The Honorary Officers of Council, who are also Council Members, from the 2016 AGM were:

Chair: Noel Nelson MEnvSc MIAQM
Vice Chair: Gary Kass FEnvSc Csci
Honorary Secretary: Phil Holmes MEnvSc
Honorary Treasurer: Jim Whelan MEnvSc CEnv CSci
Company Secretary: Eleni Antoniadis Snell MEnvSc CEnv

The other members of Council from the 2016 AGM were:

Mr Jonathan Atkinson MEnvSc MIAQM CSci
 Mrs Linsey Cottrell MEnvSc
 Mrs Julie Hill MEnvSc
 Dr Claire Holman FEnvSc FIAQM CEnv
 Mr David Holmes MEnvSc
 Dr Iain Hossack MEnvSc CEnv

Professor Carolyn Roberts FEnvSc CEnv CSci
 Dr Lesley Sloss FEnvSc
 Mr Nick Walton FEnvSc CEnv
 Professor Phil Wheeler FEnvSc CSci
 Dr Jim Whelan MEnvSc CEnv CSci

Staff members and contractors on 31st December 2016 consisted of:

Chief Executive Officer: Adam Donnan
Policy & Communities Officer: Robert Ashcroft
Publications Officer: Michelle Reeve
Membership & Projects Officer: Chloe Fletcher
Office Administrator: Lisa Abbott
Marketing & Events Manager: Emma Fell
Graphic Designer: Kate Saker
Journal Sub Editor: Paula Gilfillan

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IES is a member of the following organisations:

