

Shining a light on chemical engineering

At the start of my presidential year, I made three commitments. First, I stressed the need for chemical engineers to stand up and speak out on behalf of our profession and I pledged to lead from the front. Second, I emphasised the importance of building bridges with other stakeholders on the chemical engineering landscape and I promised to build on *Chemical Engineering Matters* as a platform for communication, both inside and outside IChemE. Finally, I stressed the need for the Institution to be more active in emphasising to those outside our profession, not least governments, the role of chemical engineering in securing sustainable energy solutions.

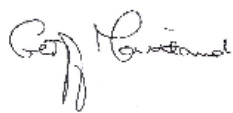
There have been developments on all fronts. In May, I initiated a daily blog with the intention of shining a light on chemical engineering on all 365 days of my presidency. My chemical engineering good news stories have been read and shared by more than 100,000 readers in 160 countries. I trust that this has provided inspiration and encouragement to chemical engineers everywhere.

The partnerships with the South African Institution of Chemical Engineers and the Mary Kay O'Connor Process Safety Center evidence our willingness to collaborate; as does the joint statement on climate change that we signed with the Royal Society of Chemistry in November.

Energy and climate change issues constantly feature as the top priority for our members. In December, Council approved the setting up of an IChemE Energy Centre, which will provide decision makers around the world with expert advice on energy issues.

It's been a fantastic year and a huge privilege to serve as IChemE's president at this exciting time. Council and IChemE staff remain committed to advancing chemical engineering worldwide and this short review shines a light on the progress being made.

Enjoy the read.



Geoff Maitland FREng FIChemE FRSC

IChemE president 2014–2015

Check out the president's chemical engineering good news

<https://ichemepresident.wordpress.com>



A vibrant profession making good progress

Like the chemical engineering profession itself, IChemE is in excellent shape and making good progress against its business plan. Membership has passed 42,000 in almost 120 countries with growing numbers of young people choosing to study chemical engineering.

Highlights of our international development during the year included a collaborative agreement with the South African Institution of Chemical Engineers and accreditation of our first university in Indonesia. The IChemE Safety Centre grew in both membership and impact, aided by our partnership with the Mary Kay O'Connor Process Safety Center. IChemE's first *Human Factors in Process Safety* programme in Australia was completed and our process safety training offer in the Middle East was extended.

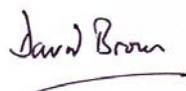
Chemical Engineering Matters served as an effective framework for wider engagement, and the president's *Chem Eng 365* blog highlighted fascinating examples of chemical engineering. Events included the *Chemeca* conference, delivered with our partners at Engineers Australia, successful *Hazards* conferences in three continents and an expanding range of training courses.

Links with industry were strengthened and our Corporate Partner programme, recognising good practice across career stages, embraced over 20 companies. In the UK, we launched a Research Committee to help influence funding bodies, while a review of our medals and prizes programme led to the creation of six new medals to recognise research excellence. We continued to take a strong lead on diversity, with action at corporate and at member group level.

We also successfully implemented a new membership database, a task which I likened to a heart transplant for a membership organisation. I am pleased to report that the new system will allow us to greatly improve our service to our membership and the wider profession.

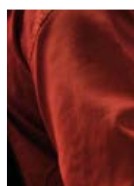
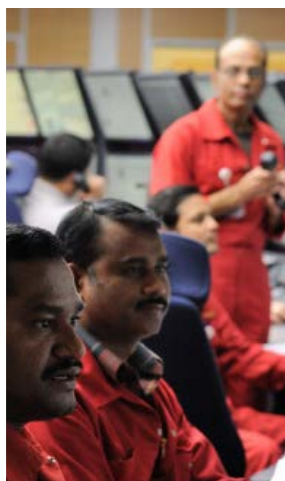
You can read about these achievements and more in the pages that follow. But in conclusion, it's always worth reminding ourselves that most of what IChemE achieves is through the work of its volunteers.

My thanks go out to member volunteers everywhere for their support and commitment to a growing Institution and to a vibrant profession.



David Brown

Chief executive officer



Building and sustaining an active community


Membership
42,000





Collaborative agreement with South African Institution of Chemical Engineers signed




201 Accredited chemical engineering courses in 13 countries



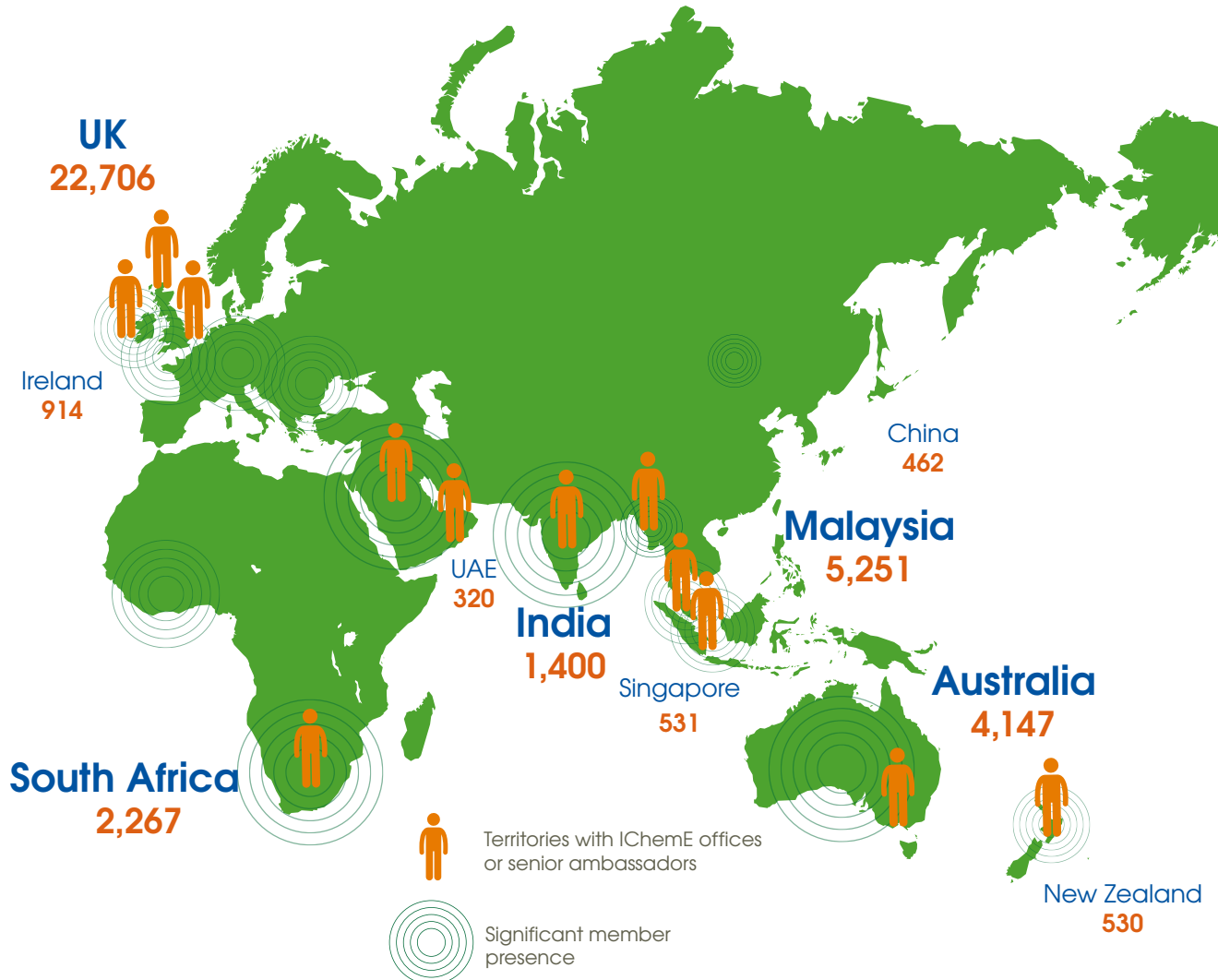
UK student intake hits record high
3,500



Total income
£8.5m



385 new Chartered Engineers
147 new Fellows

IChemE supports qualifications and standards that foster excellence and the delivery of benefits to society

IChemE is committed to advancing chemical engineering worldwide and solid progress was maintained in 2014. At the close of the year, headline global membership grew by 12%, passing 42,000 with members in 120 nations. The UK (56%), Malaysia (12%) and Australia (10%) maintained their top three rankings in the national membership table.

A collaborative agreement with the South African Institution of Chemical Engineers (SAIChE) was a major highlight, and one that delivered a substantial tranche of new members. The agreement with SAIChE created a dual membership arrangement and a tremendous opportunity to share collective resources, services and expertise.

UK universities witnessed their largest ever intake, with over 3,500 chemical engineering undergraduates commencing their studies. The 28% year-on-year growth was attributed in large part to the successful *whynotchemeng* careers programme that has delivered a near four-fold increase in the first year intake since its launch in 2001.

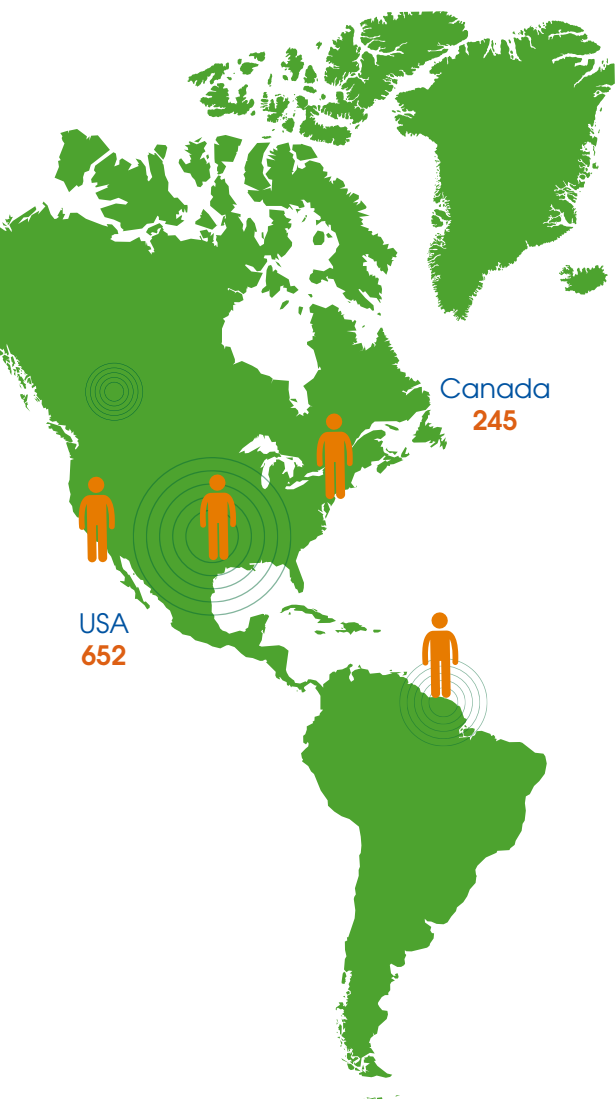
In other major markets, over 1,900 new students were reported to have taken up chemical engineering studies in Malaysia, with nearly 800 in Australia and 130 in New Zealand.

The work of the Qualifications Commission under the leadership of Colin Webb continued.

Outputs included the publication of an exciting set of proposals that will improve IChemE's accreditation and qualification offer. The accreditation programme sets the international benchmark for learning outcomes and for the first time, includes an Indonesian curriculum offered by the Universitas Gadjah Mada (UGM) in Yogyakarta. The course at Newcastle University's Singapore campus also achieved accreditation, joining the list of 53 universities offering IChemE accredited courses worldwide.

Building strong alliances between education and industry is an important part of the Institution's work to maintain a sustainable pipeline of chemical engineering talent. IChemE's Education Special Interest Group launched a publication, *Industrial Placements in Chemical Engineering – Guidance and best practice for industry*. Other initiatives included an industry-hosted design teaching workshop, and the development of a database of industry speakers for university visits.

Eli Lilly agreed to provide free IChemE membership to all chemical engineering undergraduates at leading universities in Ireland. The five-year deal will secure early-career professional support for the next generation of chemical engineers in the country.



Eli Lilly supports IChemE membership at leading Irish universities



Influencing and engaging on behalf of the profession

IChemE promotes the development, understanding and appreciation of chemical engineering

Appointing Trish Kerin to lead the IChemE Safety Centre (ISC) reinforced the importance of the Institution's process safety work. ISC membership totalled 12 Operating Partners plus three additional Industry Partners. The centre is committed to collaboration with other centres of excellence; a stance reinforced during negotiation of a formal alliance with the European Process Safety Centre and the signing of a new memorandum of understanding with the Mary Kay O'Connor Process Safety Center based at Texas A&M University.

Interest in the new international benchmark for process safety professionals – Professional Process Safety Engineer – continued to grow, with new registrations in Australia, Kazakhstan, Malaysia, New Zealand, Singapore, South Africa, the UK and the US.

PETRONAS became the first organisation in Malaysia to secure an IChemE Accredited Company Training Scheme (ACTS). The list of companies recognised by the Institution for their commitment to professionalism and career development also expanded with Fluor and Shell becoming Gold Corporate Partners. Other organisations joining the ACTS and Corporate Partner lists are shown on the right.

The Gulf States continued to be a focus for growth. Links were forged with Dubai Oil, Worley Parsons and Petroleum Development Oman during the year. Qatargas and Maersk Oil Qatar hosted a visiting delegation of senior members, including IChemE president Geoff Maitland. Carbon capture and storage featured prominently in the discussions.

The *Chemical Engineering Matters* initiative is the main driver for IChemE's policy, public and media engagement activity. This work was given new impetus following a successful leadership workshop in London. Additional discussions were held in Australia, Malaysia, Singapore and the US. Maitland led from the front with a pledge to highlight chemical engineering good news on a daily basis. His *ChemEng365* blog attracted a wide international following with social media reach driving 100,000 page views by year end.

IChemE signed *the Trillion Tonne Communiqué*. The initiative is a way for businesses and organisations to put public pressure on policy makers to make the shift towards a low carbon future by transitioning away from fossil fuels. Also, proposals for a new IChemE Energy Centre were agreed by Council. The centre will provide a coherent and legitimate voice on energy issues.

Diversity issues took on a new prominence with the signing of several concordats in the UK and a formal affiliation to the Women in Science and Engineering (WISE) campaign.

New Corporate Partners



Fluor and Shell



Aker, Costain, Cristal, Genesis, Johnson Matthey Process Technologies, LaFarge Tarmac, Murco Petroleum, Optimus Services, SNC Lavalin, Syngenta, United Utilities, and VWS Westgarth.

New IChemE Accredited Company Training Schemes



Essar Oil, Environmental Resources Management, Lloyd's Register Group, PETRONAS, RDS, and Syngenta

IChemE signs the Trillion Tonne Communiqué



PETRONAS training scheme accredited



New alliance with Mary Kay O'Connor Process Safety Center



Safety Centre director appointed

Providing support and services to members and employers

IChemE advances the practice and application of chemical engineering

A robust database is the beating heart of any membership organisation. The year brought significant capital investment in a new system – Integra NG. The project proved to be a major undertaking and the new fully-integrated database will support continued membership growth and improved customer service for members across the full scope of IChemE's activities.

IChemE membership provides access to a diverse range of tools and publications with *The Chemical Engineer* magazine (*tce*) consistently ranked as one of the most popular member benefits. Feedback from the 2014 Member satisfaction survey reconfirmed *tce*'s status as the preferred means of keeping in touch with developments in the profession.


Other notable achievements in the publications sphere during the year include the launch of a fully updated suite of IChemE's Forms of Contract and the launch of the *BP Process Safety books* in electronic format.


IChemE also published its first technical policy 'green paper'. Written for a non-expert audience, *Water Management in the Food and Drink Industry* described the role of the chemical engineer in improving water efficiency in food and drink manufacturing. More papers are planned in 2015 and beyond. These will highlight the role of the profession in delivering and improving quality of life.


In Europe, the Energy Savings Opportunity Scheme (ESOS) requires EU member states to introduce a mandatory programme of energy audits for larger companies. IChemE was designated as an ESOS approved, 'competent authority', providing a new route for chemical engineers to take a lead in the drive for greater energy efficiency.

Looking forwards, a major work programme was commissioned by the qualifications team. IChemE's Professional Learning Community will bring together a fully-updated training and accreditation offer providing internationally-accessible professional support for members. Meanwhile, IChemE's *mycareerpath* CPD reporting tool gained popularity, and was used by members of all grades in 23 countries.



 **BP Process safety books launch in e-format**


 **online CPD tool used in over 20 countries**



First policy green paper produced



New member database



New Forms of Contract



Creating new interactions for chemical engineers



20 Special interest groups with 12,750 members

Top three groups by membership

1. Oil & Natural Gas (SONG)
2. Safety & Loss Prevention
3. Consultancy



New member groups in Houston, US and Trinidad and Tobago



60 webinars hosted (up 15% year-on-year)

4,940 participants in

70 countries



Training and events

110 events with **1,700** delegates in **60** countries



IChemE supports a global professional community

IChemE's training and events programme supports professional development in the process industries worldwide. A record number of training courses were staged during the year, with over 1,700 delegates participating in 100 courses across 60 countries. New markets included Abu Dhabi, Ghana, Egypt, Kazakhstan and Qatar.

The first cohort of delegates completed the *Human Factors in Health and Safety* training programme in Australia and the *Fundamentals of Process Safety* was delivered in the Middle East for the first time. The flagship *Hazards* convened for the 24th time in Edinburgh, Scotland. Other successful conferences included *Sustainable Nuclear Energy Conference* in Manchester, UK and *New Horizons in Gasification* in Rotterdam, The Netherlands.

IChemE took on the role of principal organiser for *Chemeca 2014* conference, working in partnership with Engineers Australia. The new arrangement proved a success and over 300 delegates gathered in Perth, Australia. The partnership continues and planning is

well underway for *Chemeca 2015*, which will be co-located with the *Asian Pacific Confederation of Chemical Engineering Congress (APCCChE)* in Melbourne, Australia.

The Institution's 20 technical special interest groups (SIGs) continued to play a central role in providing thought leadership and taking forward the *Chemical Engineering Matters* agenda. The Oil and Natural Gas SIG – better known as 'SONG' – is both the largest and the most active SIG, with a busy programme of technical meetings in the UK, Malaysia and online. The Particle Technology, Process Control, Safety and Loss Prevention and Consultancy SIGs also featured strongly.

Location-based networks are also important. New groups were established to support members in Trinidad and Tobago and on the US Gulf Coast. Social gatherings proved popular, with the London and South East England Member Group and the All Ireland Member Group staging well attended dinners for the first time during the year.

Virtual knowledge transfer and networking also accelerated during the year with around 5,000 members from 70 countries joining 60 webinars on a broad range of topics.

IChemE medal winners

Council medal

Ken Morison, University of Canterbury, New Zealand

Arnold Greene Medal

Stephen Richardson Imperial College London, UK and Ron Dalton, UK

Nicklin Medal

Niall Mac Dowell, Imperial College London, UK

Macnab Lacey Prize

Richard Arthur, Jimmy Nguyen, Trang Truong, Kirilly Wagstaff, Daniel Wielechowski and Makarios Wong, Monash University, Australia

Hanson Medal

Andrew McCartor, The Blacksmith Institute, US

Hutchinson Medal

J. Sacher (Pontificia Universidad Católica de Chile, Chile), L. Garcia-Llobodanin, F. Lopez (Universtatat Rovira i Virgili, Spain), H. Segura (Universidad de Concepción, Chile) and J.R. Perez-Correa (Pontificia Universidad Católica de Chile, Chile)

Senior Moulton Medal

Y.F. Khalil, S.M. Opalka and B.L. Laube, United Technologies Research Center (UTRC), US

Junior Moulton Medal

J.A. Barish and J.M. Goddard, University of Massachusetts, US

Warner Medal

Camille Petit, Imperial College London, UK

IChemE Ambassador Prize

Paul Fennell, Imperial College London, UK

Chemeca Medal

Tam Sridhar, Monash University, Australia

Sargent Medal*

Ignacio Grossmann, Carnegie Mellon University, US

Underwood Medal*

(Neal) Tai-Shung Chung, National University of Singapore, Singapore

Guggenheim Medal*

George Jackson, Imperial College London, UK

Geldart Medal*

Colin Thornton, University of Birmingham, UK

Frank Morton Medal*

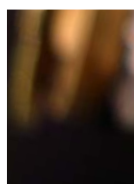
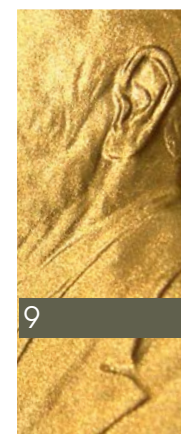
Redhouane Henda, Laurentian University, Canada

Donald Medal*

Crawford Brown, Actavis Biologics, UK

*New medals introduced in 2014 to recognise the achievements of researchers and academics in a selection of chemical engineering fields including separations, thermodynamics and particle science

For more information visit www.icheme.org/about_us/medals



IChemE Global Awards

Award for Outstanding Achievement in Chemical and Process Engineering

Australia's Synergen Met and the University of Queensland took top honours for their new technology that enables the on-site production of cyanide in the mining industry.

Visit: www.icheme.org/global-award-winners-2014 to view the full round-up and winners list.

IChemE Singapore Awards

Shell Eastern Petroleum scooped two awards – including first prize in the Process Safety Award category – for initiatives to improve process safety culture at the Pulau Bukom refinery.

Visit: www.icheme.org/singapore-award-winners-2014 to view the full round-up and winners list

IChemE Malaysian Awards

Universiti Teknologi Malaysia (UTM) was the big winner in the Process Safety Award category for its NAT-WAVEPRO microwave technology.

Visit www.icheme.org/malaysia-award-winners-2014 to view the full round-up and winners list

Honorary Fellowship:

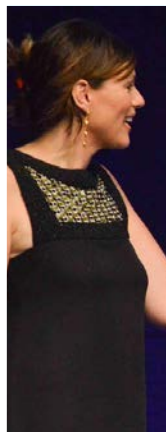
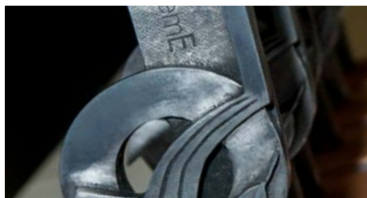
- Her Royal Highness Tuanku Zara Salim, Raja Puan Besar of Perak, Malaysia
- Dr Marlene Kanga, Engineers Australia, Australia

Ashok Kumar Fellowships:

The Ashok Kumar Fellowship, which provides funding for a three-month posting in the UK parliament, was awarded to Wendy Carr, Newcastle University, UK

National Honours:

Former IChemE council member and chemistry professor at the University of Nottingham, UK, Martyn Poliakoff, received a Knighthood in the Queen's New Year Honours list.



Financial results

Total income for the year from unrestricted funds was £8.2m (2013: £7.4m) and IChemE closed the year ahead of budget generating net incoming resources of £440,000 (2013: £463,000).

Membership exceeded 42,000 in 2014 with membership income and accreditation fees seeing a modest increase to £3.4m (2013: £3.1m).

The training activity saw a further year of significant growth with income up to £2.5m (2013: £2.1m).

The Institution's wholly-owned trading subsidiary IChemE Ltd achieved an operating surplus of £206,000 (2013: £439,000) which has been gift aided to the Institution.

	Unrestricted funds £000	Restricted funds £000	Total 2014 £000	Unrestricted funds £000	Restricted funds £000	Total 2013 £000
INCOMING RESOURCES						
Incoming resources from generated funds:						
Donations & legacies	69	-	69	69	66	135
Activities for generating funds						
Trading income	408	-	408	641	-	641
Other operating income	10	-	10	-	-	-
Investment income	106	27	133	110	27	137
Incoming resources from charitable activities:						
Build & sustain an active international community	3,351	-	3,351	3,087	-	3,087
Engage with others to promote chemical engineering	267	-	267	248	-	248
Provide support & services to others	2,498	-	2,498	2,095	-	2,095
Enable chemical engineers to interact & communicate	1,522	-	1,522	1,109	-	1,109
Technical centres	-	284	284	-	229	229
Total incoming resources	8,231	311	8,542	7,359	322	7,681
RESOURCES EXPENDED						
Costs of generating funds:						
Trading activities	(212)	-	(212)	(162)	-	(162)
Charitable activities:						
Build & sustain an active international community	(2,106)	-	(2,106)	(2,048)	-	(2,048)
Engage with others to promote chemical engineering	(1,008)	-	(1,008)	(843)	-	(843)
Provide support & services to others	(2,196)	-	(2,196)	(2,006)	-	(2,006)
Enable chemical engineers to interact & communicate	(2,238)	-	(2,238)	(1,802)	-	(1,802)
Technical centres	-	(255)	(255)	-	(260)	(260)
Andrew Legacy	-	-	-	-	(2)	(2)
Governance costs:	(31)	-	(31)	(35)	-	(35)
	(7,579)	(255)	(7,834)	(6,734)	(262)	(6,996)
Total resources expended	(7,791)	(255)	(8,046)	(6,896)	(262)	(7,158)
Net incoming resources	440	56	496	463	60	523
Net gains on investment assets	25	8	33	271	65	336
Pension scheme actuarial gains / (losses)	(1,251)	-	(1,251)	110	-	110
Net movement in funds	(786)	64	(722)	844	125	969
Fund balances brought forward at 1 January	4,978	1,927	6,905	4,134	1,802	5,936
Fund balances carried forward at 31 December	4,192	1,991	6,183	4,978	1,927	6,905

The results relate to the continuing activities of the Institution

	Group		Institution	
	2014 £000	2013 £000	2014 £000	2013 £000
Fixed assets				
Tangible assets	1,450	1,478	1,450	1,478
Investments	6,541	6,375	6,541	6,375
	7,990	7,853	7,990	7,853
Current assets				
Debtors	1,533	1,474	1,500	1,460
Short term cash investment	-	-	-	-
Cash at bank and in hand	2,253	2,731	2,249	2,688
	3,786	4,205	3,749	4,148
Creditors: amounts falling due within one year	(2,485)	(3,069)	(2,448)	(3,023)
Net current assets	1,301	1,136	1,301	1,125
Total net assets before pension deficit	9,292	8,989	9,292	8,978
Pension scheme funding deficit	(3,109)	(2,084)	(3,109)	(2,084)
Total net assets after pension deficit	6,183	6,905	6,183	6,894
Income funds				
Fixed asset reserves	1,450	1,478	1,450	1,478
Free reserves	5,851	5,584	5,851	5,573
Pension reserves	(3,109)	(2,084)	(3,109)	(2,084)
Unrestricted funds	4,192	4,978	4,192	4,967
Restricted income funds	1,991	1,927	1,991	1,927
	6,183	6,905	6,183	6,894

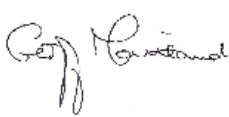
Council's statement on the summarised financial statements

These summarised financial statements are a summary of information extracted from the statutory Council's report and consolidated financial statements. They may not contain sufficient information to allow for a full understanding of the financial affairs of the Institution. For further information, the full consolidated financial statements, the auditors' report on those consolidated financial statements, and the Council's report should be consulted.

Copies of these can be obtained from the finance department at Rugby by email: jdownham@icheme.org

The consolidated financial statements were approved on 9 April 2015 and will be delivered in due course to the Charity Commission. The consolidated financial statements have been audited by a qualified auditor, BDO LLP, which gave an audit opinion that was unqualified and did not include a statement required under regulation 6(2)(f) of the Charities (Accounts and Reports) Regulations 1995.

On behalf of the Council



Prof Geoff C Maitland
President



Mr Ken J Rivers
Honorary treasurer

Independent Auditors' statement to the Trustees of the Institution of Chemical Engineers.

We have examined the summary financial statement for the year ended 31 December 2014 set out on pages 11 to 12.

Respective responsibilities of trustees and auditor

The trustees are responsible for preparing the summarised annual report in accordance with applicable United Kingdom law.

Our responsibility is to report to you our opinion on the consistency of the summary financial statement within the summarised annual report with the full annual financial statement and the Trustees' Report.

We also read the other information contained in the summarised annual report and consider the implications for our report if we become aware of any apparent misstatements or material inconsistencies with the summary financial statement. The other information comprises only the chief executive's statement and the Review of Activities.

Our report has been prepared pursuant to the requirements of the Charities SORP and for no other purpose. No person is entitled to rely on this report unless such a person is a person entitled to rely upon this report by virtue of and for the purpose of the terms of our engagement letter dated 28 January 2015 or has been expressly authorised to do so by our prior written consent. Save as above, we do not accept responsibility for this report to any other person or for any other purpose and we hereby expressly disclaim any and all such liability.

Basis of opinion

We conducted our work in accordance with Bulletin 2008/3 'The auditors' statement on summary financial statement in the United Kingdom' issued by the Financial Reporting Council. Our report on the charity's full annual financial statements describes the basis of our opinion on those financial statements and on the Trustees' Report.

Opinion

In our opinion the summary financial statement is consistent with the full annual financial statements and the Trustees' Report of the Institution of Chemical Engineers for the year ended 31 December 2014.

BDO LLP, Statutory Auditor, Gatwick, United Kingdom

Date: 9 April 2015

BDO LLP is a limited liability partnership registered in England and Wales (with registered number OC305127)

Governance and leadership

IChemE Council members

Geoff Maitland President	Professor of energy engineering, Imperial College London, UK
Judith Hackitt CBE Immediate past president	Chair, Health and Safety Executive, GB
Andrew Jamieson OBE Deputy president	Director, Woodside Energy, Australia
Ken Rivers Honorary treasurer	Chair, Midstream Oil Sector Government & Industry Task Force, UK
Colin Webb Vice president (qualifications)	Professor of chemical engineering, University of Manchester, UK
Ross McCann Vice president (international)	Chair, Qenos, Australia
Jon-Paul Sherlock Vice president (technical)	Director, product development UK/US, AstraZeneca, UK
John McGagh (Vice president, Australia)	Former head of innovation, Rio Tinto, Australia
Jarka Glassey	Reader of chemical engineering education, Newcastle University, UK
Bill Harper	Operating unit engineering manager & design authority, Sellafield Ltd, UK
Steve Harrow	Manager process engineering, Amec Foster Wheeler, UK
Iain Martin	Divisional technology director Process Technologies Division, Johnson Matthey, UK
Paul Ellis Chair of IChemE in Malaysia	Managing director, Schaefer Kalk, Malaysia
Max Kennedy	National manager biological industries, Ministry of Business & Employment, New Zealand
Moses Tadé	Deputy pro-vice chancellor, Faculty of science and engineering, Curtin University, Australia

IChemE senior management team

David Brown	Chief executive officer
Justin Blades	Deputy chief executive & chief operating officer
Neil Atkinson	Director of qualifications and international development
Jo Downham	Director of finance and business
Claudia Flavell-White	Director of publications
Andrew Furlong	Director of policy and communications
Peter Slane	Director, Australasia

IChemE offices

Global headquarters

UK – Rugby

Tel: +44 (0)1788 578214

Email: info@icheme.org

Australia

Tel: +61 (0)3 9642 4494

Email: austmembers@icheme.org

Malaysia

Tel: +603 2283 1381

Email: malaysianmembers@icheme.org

New Zealand

Tel: +64 (4)473 4398

Email: nzmembers@icheme.org

Singapore

Tel: +65 6471 5043

Email: singaporemembers@icheme.org

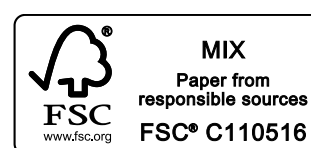
UK – London

Tel: +44 (0)20 7927 8200

Email: info@icheme.org



www.icheme.org



IChemE is a registered charity in England and Wales, and a charity registered in Scotland (SC 039661)

Editorial by Trish Dwyer. Design by Shelley Lander.