

Durham Energy Institute

15th Anniversary Magazine



Welcome



A welcome message from Professor Simone Abram, DEI Director and Ørsted Chair in Green Energy Systems.

It is a pleasure to invite you to celebrate the 15th birthday of the Durham Energy Institute, and it is an honour and a privilege to be the Executive Director of such a thriving and exciting organisation. This magazine gives you a glimpse of some of the many activities led or supported by DEI, from student projects to multinational research consortia. Our ambitions are to innovate, have impact and influence, and to be inclusive across all our activities.

We have come a long way since 2009. NASA recorded that 2009 was the second warmest year in the modern record after a cool year in 2008, and 2000-2009 was then the warmest decade on record. COP15 in Copenhagen saw unprecedented public protests and was seen as a failure in the campaign to take forward measure to address climate change. It was clear that addressing climate change would require social and political change as much as technological

development. Colleagues at Durham were aware of how urgent it was to take a new, integrated approach to energy research and to pioneer engagement in energy issues across all faculties at the university, and with a wide range of partners beyond it.

Fifteen years later, the ten most recent years have again been the warmest on record. If energy decarbonisation is moving forward only slowly, the range of routes to lowering greenhouse gas emissions is richer than ever and energy research is racing ahead. At Durham, DEI is now a flagship research institute for the university, which has energy as one of its key strategy areas. The university has signed up to a goal of Net Zero by 2035 and biodiversity net gain by 2032, aiming to be one of the most environmentally sustainable universities in the UK. DEI itself has renewed its foundational relationship with Ørsted, which has followed its own transformation from an oil and gas to a renewable energy company, and we are engaging with other companies following this same trajectory. DEI's aims to bring people together to address multi-faceted energy challenges are clearly having effects.

I came to the Anthropology department at Durham in 2013 to join an emerging Energy Anthropology research group, and to deliver a new Masters programme for DEI on Energy and Society, becoming a DEI co-director in 2014. Designing the Masters curriculum, I found few journal articles about the social issues involved in decarbonisation. In 2014 a new journal on 'Energy Research and Social Science' was founded, which now publishes around thirty articles each month from around the world. The challenge now is to help our students navigate the abundance of interdisciplinary energy research across all manner of issues and to apply this research throughout their careers.

Alumni from DEI's Masters programmes and its Centres for Doctoral Training are now well placed around the world to show how the DEI's approach of working together, thinking

holistically, and taking a more socio-technical approach to energy issues brings results.

DEI now has a dizzying level of funded research, leading national and international networks, research hubs, transnational projects. There are new research specialisms emerging, such as the newly established research hub for Net Zero Health in the North East, with partners from the NHS trusts, Health Innovation Network and Ambulance Service. This also reflects a genuine commitment to regional development, through partnerships and outreach, and engagement with regional bodies such as the North East Combined Authority and Durham County Council.

DEI works because it is inclusive and has broad horizons, because it has proved its worth with external partners, and because it has earned strong backing at the highest levels of the university. We now work with a superb team in the Research and Innovation Office, where our business development managers like Jennie Halliday share our commitment to decarbonisation. We have tremendous support from the Alumni office, such as from Emmanuelle Charbon who helps us to reach Durham alumni around the world. Most importantly, we can rely on a wonderful team of professional staff at DEI, led by Lynn Gibson as institute manager. Our newest recruit is Kate Webb, appointed as an admin apprentice, and already more than indispensable.

Since joining the DEI Executive, a decade ago, I have had the pleasure of working with the most outstanding, cooperative, and effective researchers and colleagues. I have been particularly inspired and supported by Prof Sandra Bell who was one of the founders of the institute, and whose encouragement and determination to keep social science and arts at the heart of energy research enabled truly interdisciplinary research groups to emerge. And I have had the privilege of learning from truly remarkable institute directors, Simon Hogg, and Jon Gluyas.

It is a genuine pleasure now to work with the outstanding DEI executive team, including our co-Directors Tony Roskilly, Joanna Berry and Stuart Jones, Fellows' representative Kim Bouwer.

DEI reaches its fifteen anniversary as a growing institute – growing in the number and range of colleagues working with us, growing in the research activity we generate and income we raise, growing in our public profile and regional influence, and growing in our ambition and scope. In five years, we will be approaching the first key deadline set by governments and intergovernmental organisations for addressing climate change, and I look forward to seeing DEI's research making major contributions to meeting the challenge.

“DEI works because it is inclusive and has broad horizons, because it has proved its worth with external partners, and because it has earned strong backing at the highest levels of the university.”

Our timeline

2019

DEI Co-Director for Engagement, Professor Joanna Berry
Associate Dean, External Engagement for the Faculty of Business
2019 to present

2020

DEI Co-Director for Research and International Profile, Professor Tony Roskilly,
Chair of Energy Systems, Department of Engineering
2020 to present

2022

Business Engagement and Innovation Manager, Katie Daniels
2022 to present

Policy and Communications Manager, Kate Hatton
2022 to present

2023

DEI Fellows' Representative, Dr Kim Bower
Assistant Professor, Durham Law School
2023 to present

DEI Co-director for Education and training, Dr Stuart Jones
Associate Professor, Director of Equality Diversity and Inclusion, Department of Earth Sciences
2023 to present

Institute Manager, Lynn Gibson
2023 to present
Assistant Manager 2014 - 2023

Administrative Apprentice, Kate Webb
2023 to present

DEI Director, Professor Simone Abram,
Ørsted Chair in Green Energy Systems
2023 to present

2024

Senior Business Development Manager, Research and Innovation Services, Dr Jennie Halliday
2024 to present

Our Executive Team and Entrepreneur



Professor Tony Roskilly

I am the DEI co-Director responsible for the institute's research and international profile. I am an energy systems expert with over three decades of distinguished career experience, I serve as the Chair of Energy Systems at Durham University and Director of the UK National Clean Maritime Research Hub, making significant contributions to the design, control, and optimization of energy systems.

My leadership roles span prestigious appointments such as the UK lead for the European Energy Research Alliance Joint Programmes for Energy Efficiency in Industrial Processes and Energy Systems Integration, member of the Department of Transport College of Experts, and the Academic Lead for the Teesside Industrial Cluster appointed by the Tees Valley Combined Authority. Additionally, I am the Principal Investigator for the National Network+ for hydrogen fuelled transportation and co-coordinate the Growing Teesside's Hydrogen Economy and Catalysing a Just Transition to Net Zero project.

I head a prominent research group focused on cutting-edge technologies including high-efficiency power and propulsion systems, oxygen-hydrogen closed power cycles, integrated hydrogen-fuelled energy hubs, thermo-chemical energy recovery, storage and trigeneration systems, and energy system modelling and analysis.



Dr Joanna Berry

I am co-Director responsible for engagement. I am also Associate Dean, Engagement for triple-accredited Durham Business School, and teach Entrepreneurship to our MBA, OMBA and DBA students across the world.

My role is focussed on making sure that the Energy Institute works as closely as possible with our industry, third sector and public sector partners and organisations across the world. My work helps to ensure that we embed our world-class research into day-to-day practice in global communities, to ensure a Just Transition in the race toward Net Zero. I liaise regularly with our experts, Professors in Practice, and our Royal Society Entrepreneur in Residence to make the most of their experience and connections. I created our joint MSc in Energy Engineering Management with Durham's Engineering Department, and with input from our DEI Advisory Board and Directors, helping to create a new generation of students who are equipped to understand both the business and the practice of the essential renewable energy systems needed to help combat climate change.



Dr Stuart Jones

I am the co-director Co-Director for Education and Director of the Energy Centre for Doctoral Training.

I am an expert in the study of sedimentary rocks and their application for subsurface energy storage to ensure the transition to Net Zero.

My research has focused on continental sedimentology, diagenesis, and applied geology. This research is undertaken through the joint application of subsurface and outcrop sedimentological data for improved model development and reducing subsurface risk and uncertainty. It is particularly important for the characterization of the subsurface geology for carbon capture and storage, Hydrogen storage and geothermal energy. Recent research on how subsurface pressure in rocks and early diagenetic cements can maintain high porosities in reservoir sandstones is guiding better reservoir predictions. I lead the GeoPOP industry research consortium investigating the subsurface pressure that is essential for the transition to Net Zero and energy security. I have been widely recognized for my innovative and high-quality teaching of Earth Sciences with several National STEM awards and as director of the Centre for Doctoral Training in Energy. I am passionate about educating future energy leaders.



Dr Kim Bower

I have been the Fellows' Representative in the DEI since Summer 2023. The DEI runs on 'Fellow Power' but also provides an invaluable resource and source of support, information and connections for Durham academics and researchers working in the field of energy and climate change.

The purpose of the Representative role is to provide a bridge between the Fellows and the Executive Team. My brief as a new Representative was to try to reinforce this bridge, and to reinvigorate the sense of community, which had disintegrated to some extent during the pandemic. My focus this last year has been about trying to find the balance between creating space for the Fellows to meet - but trying not to be yet another obligation in their busy schedules! - trying to build connections between them and beyond the university, and highlighting the support on offer from members of the Executive. More follows in the coming academic year!



Dr Helen Meese

Sustainable Healthcare - Introducing Our New Entrepreneur in Residence

Dr Helen Meese, an award-winning mechanical engineer, has joined Durham Energy Institute and Durham Business School as a Royal Society Entrepreneur in Residence. She will lead the 'Engineering the Future of Healthcare' project, focusing on sustainable healthcare and innovative technology.

The project aims to enhance knowledge and skills across Durham University to address global healthcare challenges. It will emphasize inclusive design and sustainability, fostering collaborations between students, the university, and external partners.

This initiative aligns with DEI's 'Energy and Health' research focus and complements the 'North East Net Zero Health Systems Research Alliance', partnered with the local NHS Foundation Trust.

Dr Meese brings extensive experience from industry and academia, including leadership roles at the Institution of Mechanical Engineers and her own consultancy, The Care Machine. Her work on healthcare policy, particularly on NHS sustainability, will contribute to innovative research and policy development for a net zero transition in healthcare.

Find out more about Dr Meese's work you can view her lecture 'First, Do No Harm - Creating a Net Zero Healthcare Service' online via the QR code below.



Leadership for a collaborative and inclusive future

DEI has an important role in defining a new agenda for social science research to accelerate inclusive, clean and just energy transitions.



EDI+ A research, innovation and training network for Equality, Diversity and Inclusion in the energy research community.

The EDI+ Fellowship Programme promotes equality, diversity, and inclusion in the energy research community. It offers a unique opportunity for researchers and professionals to make a tangible impact through designing and implementing interventions to advance these important goals within their organizations.

This comprehensive programme provides a well-rounded experience combining training, networking, mentorship, and a hands-on research

project. Participants commit one day per week (0.2 FTE) to the programme, with funding provided for those in educational institutions and free of charge to those outside of higher education. This is a 2-year programme that can be completed synchronously or asynchronously. Fellows can choose to join the 2-year, one day per week track or chose the 6 months intensive training, to complete their project with in the next year and half.

At the heart of the fellowship is a structured curriculum featuring interactive training sessions, seminars, and events guided by our four core principles of appropriate, accessible, active, and supportive. Our training sessions and seminars are built on four key themes of Leading Change, Research-informed Project Design, EDI Issues, and Communication. Experts from various fields contribute their insights, ensuring a multidisciplinary approach.

Fellows become part of a vibrant Professional Learning Network, connecting with mentors, industry leaders, and academics. This

collaborative environment fosters idea-sharing, dialogue, and the growth of a valuable EDI resource base to support fellows' projects and interventions. It's a trusted space for exploring diverse perspectives and reflecting on professional and personal identity.

One of the programme's standout features is the Reciprocal Mentoring component. Fellows are paired with senior leaders from different organizations, facilitating open and respectful discussions across levels and institutions. This cross-pollination of ideas and experiences benefits both parties, enabling fellows to gain insights into leadership challenges while senior leaders better understand the realities faced by those driving change on the ground.

Upon completing their interventions, fellows contribute to the growing body of EDI knowledge by publishing their research project reports in an open-access online library and being guided towards publishing their findings in peer-reviewed journals.

Registration for the EDI+ Fellowship Programme is free of charge. For those in higher education or further education institutions, up to six funded places are available per cohort.

The EDI+ Fellowship Programme offers a comprehensive and transformative experience, join a community of changemakers shaping a more inclusive future for the energy research sector.

To learn more or discuss the programme, contact ediplus@durham.ac.uk or visit our website www.ediplus.ac.uk.

A Fresh Approach to Maritime Decarbonisation

World leading research at Durham Energy Institute is co-creating a cleaner maritime future.

Led by Durham University, under the leadership of DEI Director Prof Tony Roskilly, the UK National Clean Maritime Research (UK-MaRes Hub) is a collaboration of 13 universities, supported by 70+ project partners with a united vision to go beyond conventional marine engineering and naval architecture to create a pioneering research hub, providing technically, environmentally, socially and economically informed pathways to decarbonise the maritime sector.

The challenge

The maritime sector is at the heart of global trade but is also a significant contributor of environmental pollution. In 2017, the UK's domestic and international shipping sectors collectively emitted a staggering 19.7 Mt CO₂, accounting for 3.4% of the country's total greenhouse gas emissions. Alongside CO₂, the sector also significantly contributes to air pollution through emissions of nitrogen oxide, sulphur dioxide, and particulate matter, which adversely affect human health and the environment, especially in coastal areas.

The opportunity

By 2050, the global market for maritime emission reduction technologies is projected to reach \$15 billion annually, presenting substantial economic opportunities for the UK. Seizing this potential, the UK-MaRes Hub is harnessing the depth, breadth and diversity of research being undertaken in the UK to foster collaboration, drive forward innovation and transformation, setting a global benchmark for excellence.

The multidisciplinary research consortium which includes the universities of Aston, Birmingham, Brighton, City, Cranfield, Liverpool, Newcastle, Nottingham, Sheffield, Solent Southampton, St Andrews, and Ulster is dedicated to conducting interdisciplinary research aimed at delivering groundbreaking solutions to transform maritime practices and achieve a zero-carbon future by 2050.

Local solutions to inform nationwide decision-making

The UK-MaRes Hub recognises that ports are uniquely placed within the maritime ecosystem and that local initiatives must be customised to address specific port conditions, vessel

support requirements, and supply chain dependencies. This includes decarbonising port facilities, integrating renewable energy, reducing air pollution, and developing local skills.

UK ports manage a variety of vessels and cargoes influenced by geographical location, regional industrial activities, and transport links. The UK-MaRes Hub is supporting decarbonisation plans so that they are adaptable to these place-based challenges, offering targeted technical and socio-economic interventions through a novel Co-Innovation Methodology. This approach concentrates on port-centric scenarios and assesses opportunities for innovation to reduce greenhouse gas emissions by 2030, 2040, and 2050, while sharing best practices across the sector to encourage adoption and scale-up across the UK.

Collaboration + Innovation = Transformation

As the maritime industry navigates the path towards sustainability, the UK stands poised to lead in clean maritime research and innovation. The journey to a zero-carbon maritime sector is complex, and a fresh approach to decarbonisation is needed.

UK-MaRes Hub is funded by the Engineering and Physical Sciences Research Council, the Department for Transport's UK-SHORE programme, industry, and universities.



"By embracing the power of cross-sectoral collaboration and cutting-edge technology, we believe that the vision of a sustainable maritime future is within reach".

Prof. Tony Roskilly

Industrial Partnerships

Collaborative working with industry has been central to Durham Energy Institute's ethos and activities since its inception.



Credit Ørsted

L to R
David Bould (Ørsted),
Professor Simone Abram,
Benj Sykes(Ørsted)

As one of the founding funders of Durham Energy Institute back in 2009, leading renewable energy company Ørsted continues to maintain their successful strategic partnership.

The DEI is an ideal partner for Ørsted, nurturing an effective collaboration between business and academia. The partnership has proved to be mutually beneficial with Ørsted gaining insights from strong academic experts, whilst the DEI has been able to build upon their existing capabilities and enhance their offering to the growing world of renewables.

A substantial number of successful and meaningful studies have been, and continue to be, completed under the management of each DEI Director, directly benefitting the way the company works.

Former Ørsted Chair of Renewable Energy and now the Head of Ørsted Research at Durham University, Professor Simon Hogg built a research programme on the engineering aspects of offshore wind turbines and more widely on clean energy systems.

From 2017 until 2023, the team focussed on a Prosperity Partnership project named, "A New Partnership in Offshore Wind". Working alongside an additional industrial partner, Siemens Gamesa Renewable Energy (SGRE) whilst combining research from the Universities of Durham, Sheffield and Hull. The fundamental research and development programme obtained a total budget of £7.7m and was geared towards the rapid industrial uptake and cost reduction in offshore wind.



Credit Ørsted

With direct funding from the industrial partners of the innovative project, £3.9m worth of funding from the Engineering & Physical Sciences Research Council (EPSRC), who invest in projects which help the nation handle the next generation of technological change, was able to be unlocked.

Ørsted supported five PhDs and one post-doctoral researcher to address problems that will help to reduce the levelised cost of electricity from offshore wind and support the UK supply chain.

The partnership between Ørsted and the DEI was once again renewed in August 2023, with anthropologist Professor Simone Abram taking the helm as new Director for the DEI and Ørsted Chair of Green Energy Systems. As the DEI strengthens its focus on the societal aspects of the energy transition, both parties prioritise this work as being key to achieving Net Zero in a way that is fair for all.

With a desire to encompass a multi-disciplinary approach when working towards achieving a just transition, Professor Abram's previous extensive experience in researching the social aspects of current and future energy systems has enabled collaboration between the DEI and the company's social sustainability team.

It is hoped that the research to come from the next round of PhDs funded by the partnership, will help industry better understand the social and economic dimensions of the energy transition, addressing it in ways that work for all members of society.

Ørsted currently has plans to develop, construct and deliver significant infrastructure projects which will deliver clean energy to millions of people in the UK, including the Hornsea 3 and Hornsea 4 offshore wind farms, as well as new locations for the business' offshore market in Scotland and the Isle of Man. It has therefore become even more pertinent to understand how people will engage with the energy transition and improve interactions between communities and the energy transition activities in their area.

With the knowledge that this area is an essential component to a truly sustainable transformation of Britain's energy system, Professor Abram's plans for the partnership will give industry the academic insights it needs to create a more equal, greener future.



The Heat is On for UK Geothermal Energy.

Decarbonising heat remains a significant challenge that the UK faces in the coming decades since approximately half of the UK's energy consumption is used to produce heat. Since the DEI's 10th anniversary, an exciting new wave of momentum around geothermal power is offering a promising solution. Government committees have been convened, white papers published, and extensive investigations into the nation's geothermal potential undertaken by researchers, MPs, geological experts, and key industry stakeholders.

There have been exciting times with cutting-edge geothermal projects have been springing up across the UK. The Lanchester Wines scheme and Gateshead's district heating network are tapping into transformative mine water heat. At the iconic Eden Project, they are producing heat from granite deep below the surface.

On the research front, the British Geological Survey recently completed its state-of-the-art UKGEOS facility in Glasgow Observatory to advance

low-temperature geothermal studies. The Coal Authority has also developed a living lab with publicly accessible data that will observe any interactions between adjacent operational mine heat schemes in Gateshead.

There are several more shallow and deep geothermal city scale projects underway across the UK with growing interest from local authorities and energy companies, rushing to explore this renewable resource with immense potential for the UK.

Growth of the UK geothermal sector presents many opportunities; including reduced carbon emissions, improved energy security and job creation. However, key obstacles remain, such as drilling uncertainties, attracting investment capital, and untangling regulation and licensing. The National Geothermal Centre (NGC), established with support from the Reece Foundation, Net Zero Technology Centre, and Shift Geothermal, is poised to help overcome those hurdles.

The centre launched in Edinburgh on 13th of June 2024 and aspires to become a through funding organisation to help support and promote uptake of geothermal energy in the UK. As an independent, non-profit hub, the NGC aims to accelerate geothermal development hosting through funding opportunities, a hub for knowledge sharing and engagement, coordination of research efforts, and pooling of expertise across academia, industry, and government.



Credit National Geothermal Centre

One of the first tasks for the centre is to produce a geothermal road map that will provide pathways for geothermal development in 2030 and 2050 through the lenses of policy, regulation and investment, technology and innovation, Infrastructure and research and knowledge.

The NGC will be running a series of workshops and consultations in coming months with specific sector groups. The heat is definitely on for UK geothermal and we look forward to the next DEI anniversary to report more progress.



Regional Decarbonisation: People, Place and Planning.

Local and regional governance plays a crucial role in achieving climate goals. Although their direct control over carbon emissions is limited, they have significant influence over citizen and business activities. This has led to the development of tools and approaches to assist local and regional authorities in creating Local Energy Plans (LEP) for their areas.

This report examines Local Energy Plans (LEPs) for opportunities in the North East of England. It stems from the long-standing partnership between the Durham Energy Institute (DEI) and the North East Local Enterprise Partnership (NELEP), focused on regional economic planning and strategy. The two organizations have collaborated on clean energy initiatives and recognized the potential for research to address regional net zero challenges.

The report focuses on two primary approaches for Local Energy Plans (LEPs): Local Area Energy Planning (LAEP) and Energy Master Planning (EMP). Both emphasize gathering local data and appraising technology options to achieve objectives. However, they differ in scope. LAEP takes a

comprehensive, data-driven approach for the whole energy system within a defined area, while EMP has a more flexible scope, not necessarily covering the entire energy system, and can target specific entities, locations, or communities.

Regardless of the spatial scale and approach, undertaking a Local Energy Plan (LEP) can realize numerous benefits. The process can stimulate creativity, improve resource efficiency, and increase feasibility of timely decarbonization. Additionally, an LEP approach enables identifying complementary objectives across projects, facilitating integration and coordination to maximize overall impact and effectiveness.

Decarbonization interventions tailored to local needs provide co-benefits like economic prosperity and improved wellbeing. Planning frameworks guide business investment and foster economic confidence, stimulating stakeholder collaboration for more effective transitions.

Our research found an inclusive planning process engaging diverse stakeholders, including citizens, can realize a more equitable net zero transition. Adopting a collaborative ethos from the outset by involving citizens, energy operators, businesses, and institutions can lead to improved outcomes and a more rapid, effective transition. Genuine collaboration minimizes resistance, sparks creativity, and allows incorporating new

Our research found an inclusive planning process engaging diverse stakeholders, including citizens, can realize a more equitable net zero transition.

knowledge and evolving aspirations through periodic review.

This report's insights highlight important considerations for local and regional policymakers and stakeholders in the North East of England and beyond. A collaborative ethos, strategic vision, and decarbonization measures beyond energy efficiency to reduce demand are needed. The aim is a fair, equitable, rapid, effective, and enduring transition.

Regional Decarbonisation: People, Place and Planning
 Claire Copeland, Neil Heckels, Simone Abram
 21.03.2024

Find out more at evidencehub.northeast-ca.gov.uk/report/regional-decarbonisation-people-place-and-planning

Innovative Energy Education and Training

An important impact from DEIs work is the students that we have trained, supported, and collaborated with on research. Inspiring and encouraging early career researchers has been a key focus for DEI from our inception.

Postgraduate training for Net Zero: The Energy CDT.



To deliver Net Zero by 2050 requires highly trained and skilled practitioners who appreciate the scale of the problem and associated risks including the uncertainty around the implementation of climate policies and the public support they rely on, as well as the speed and scope of potential technological breakthroughs. Since 2009 the multidisciplinary Centre for Doctoral Training (CDT) in Energy led by Durham Energy Institute (DEI) has helped to train over 71 PhD students with many now working in industry to make a difference. The DEI has worked hard to sustain the Energy CDT beyond the original funding recognising that the training and research delivered very much addresses the key challenges and risks facing this green transition to reduce emissions and enable Net Zero targets to be met.

Since 2023 the Energy CDT has been led by Stuart Jones who through his



extensive experience of supervising over forty postgraduate students at Durham University wants to build upon the success of the and develop new wide-ranging, stimulating, and effective training programmes in all aspects of energy. Stuart has already introduced several new initiatives including the new 'E-mission Zero' field trip across North East England exemplifying the regions renowned and extraordinary geology that provides an excellent test bed for developing critical and creative thinking necessary for the energy transition, as well as important entrepreneurial skill sets.

Looking forward, the Energy CDT still very much presents a unique opportunity at a critical time in the energy transition to train the next generation of 'energisers' who appreciate the problems in moving to Net Zero, whilst ensuring the transition is appropriate and just. It is important to build upon the success where multiple research disciplines at Durham University are combined to deliver high calibre, specialised trained postgraduate research students equipped with skill sets to help make the future green!

Find out more at durham.ac.uk/research/institutes-and-centres/doctoral-training-in-energy

Durham University Student Energy Society.

Durham University Student Energy Society (DUSES) is a branch of the global organization 'Student Energy,' dedicated to educating and inspiring the next generation of energy leaders for a sustainable, equitable future. As the only UK branch, DUSES plays a crucial role in representing British higher education within a network of 50,000 people from over 120 countries.

The society is run by a small group of students who work together to offer members two main opportunities:

- a monthly newsletter, and
- events.

Participation in DUSES is completely free, with no annual fees, to remove barriers to participation. Members are not seen as 'in' or 'out' of the society but are encouraged to choose which projects or events they wish to participate in.

STUDENT ENERGY
— at Durham —



Fostering the Next Generation of Energy Systems Researchers.

In August 2023, the Network+ Heating and Cooling welcomed thirty early career researchers and PhD students from twelve universities across the UK to Durham for a 2.5-day Summer School. The event covered all five of the Network's core research themes through lectures and activities.

"Beyond the knowledge, the event was a fantastic platform for fostering connections, sparking discussions, and collaboratively envisioning the path ahead," said one attendee. "Grateful for the opportunity to engage with fellow thought leaders and looking forward to more such enlightening experiences."

With travel costs covered for those without access to funding, the Summer School facilitated cross-pollination of ideas from students at universities like Cardiff, Surrey, Birmingham, Newcastle,

York, and Warwick. The Network also partnered with C-DICE to support participation from students in their networks.

Building on this successful inaugural event, the Network is organizing another Summer School in August 2024 with support from Arup, DESNZ, Energy Systems Catapult, and C-DICE. The program aims to further develop the knowledge community while supporting the career growth of early career researchers through thought-provoking sessions.

"We were delighted by the positive feedback and engagement from last year's Summer School," said a Network representative. "Providing a platform for the next generation to connect, collaborate, and envision the future of energy systems research is crucial. We look forward to an even more impactful event in 2024."

Find out more at net-zero-research.co.uk/network-hc

DUSES Newsletter

The primary aim is to help students finish university with the knowledge and skills needed for a meaningful and exciting career in the energy sector. With a focus on the energy trilemma - achieving decarbonized, secure, and affordable energy for all, DUSES runs a monthly newsletter that solicits contributions from talented writers across various disciplines. Each writer delves deep into a topic that fascinates them. This not only results in a highly engaging monthly publication with up to eight articles from different writers, but it also develops students' ability to research, simplify complex topics, think critically, and meet deadlines - vital skills for the job market or academia. This academic year, the team of editors, designers, and writers has published six newsletters focusing on themes such as flagship infrastructure projects and future energy production sources, with twelve different writers receiving over five hundred unique readers.

DUSES Events

A crucial aspect of DUSES's member engagement is its partnership with the Durham Energy Institute, which kindly opens its lectures by world-leading experts to students and extends invitations to functions such as the annual DEI Energy Day, providing opportunities for networking and debating the future of the UK's energy system.

In addition, DUSES also hosts its own career-based events featuring Durham University alumni with highly successful careers in energy. These events focus on in-depth Q&A sessions, allowing students to understand the skills employers seek and gain insights into careers in areas like supply chain decarbonization, home energy decarbonization, and climate change consulting. This enables DUSES members to better understand their potential career paths as they finish their studies.

Find out more at durhamsu.com/groups/durham-student-energy-society

Regional Collaboration

Durham Energy Institute's connection with our Mining Heritage.

Durham Energy Institute does not just focus on a sustainable and balanced energy future; but as an interdisciplinary research institute, we also examine our energy past. The university science site is located on top of the site of the former Elvet Colliery in Durham City, and there is ongoing research around the history of the coalfield as well as the opportunity for innovative technologies, using geothermal minewater, to provide heat for local mining communities.

Longstanding Partnership with Durham Miners' Association.

Since 2014, Durham Energy Institute has had a longstanding relationship with the Durham Miners' Association (DMA) based at Redhills – the stunning Durham Miners Hall in Durham City. From 2016 to 2021, DEI members Emeritus Professor Sandra Bell and DEI Manager Lynn Gibson supported the association on their Advisory Board and aiding the newly created 'Redhills' charity to securing a successful National Lottery Heritage Fund application.

This grant will enable the full restoration of the Grade II-listed Pitman's Parliament Hall, due to re-open in early 2025. The addition of new buildings with modern facilities will allow Redhills to improve accessibility and offer a wide-ranging programme of activities and community resources. The renewed Redhills will use cutting-edge audio-visual technology to bring to life the rich history of the DMA, the people, and the communities of the Durham coalfield.

Find out more at durhamminers.org



Historic Significance of the Pitman's Parliament.



In 2018, the Pitman's Parliament in the Durham Miners' Hall at Redhills was recognised by Historic England as one of the top one hundred places that brings to life the country's "rich and extraordinary history." In the 'Power, Protest and Progress' category, it ranks alongside the Palace of Westminster in the top ten places. It has been a centre of working-class and trade union democracy and culture for more than a century, opening in 1915 and paid for by the subscriptions of the 200,000 members who were then members of the DMA.

Redhills is one of the world's finest trade union buildings. Known as The Pitman's Parliament, it contains a Grade II-listed council chamber where almost three hundred elected delegates from the Durham Coalfield collieries would take their seat. The collective decisions made in The Pitman's Parliament resulted in the delivery of a range of welfare services and facilities for the people of County Durham, including medical provision, libraries, community centres, retirement homes, and sports fields in the first half of the 20th century.

Find out more at redhillsdurham.org

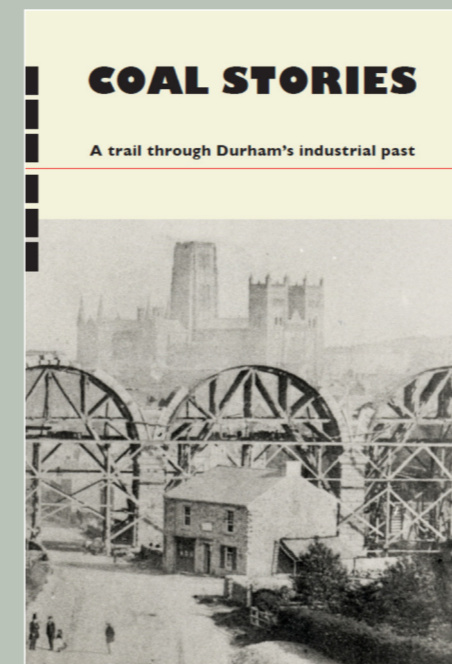
Durham Energy Institute Events 2024/2025



Upcoming Conference: 'From the Carbon Past We Inherit, A Green, Just Future We Build'.

In February 2025, DEI and Redhills will host a two-day conference - 'From the Carbon Past We Inherit, A Green, Just Future We Build.' The first day will focus on our carbon history, heritage, arts, and culture, whilst the second day will concentrate on the technologies that will provide our just, green future and examine the societal benefits and impacts of such technologies.

If you would like to join this event or be kept up-to-date with all DEI events, please email dei.events@durham.ac.uk to request addition to our mailing list.



Coal Stories - A Trail Through Durham's Industrial Past.

In 2020, DEI's Emeritus Professor Sandra Bell (Anthropology) with Dr. Adrian Green (History) co-wrote 'Coal Stories - A Trail Through Durham's Industrial Past,' an illustrated trail pocket book to guide people through Durham City's mining past.

The guide's easy to follow map highlights important landmarks that provide insights into the culture and experiences of the past. Across two miles, taking in some little-known corners, the walk takes an hour to complete. Where sections of the route are difficult or impassable for people with restricted mobility, the guide provides alternative directions.

From the earliest period of the Industrial Revolution, developments in Durham City played a significant part in the economic and political transformation of North East England. Major changes in Durham occurred that dramatically altered its environment, social composition, and the preoccupations of its inhabitants.

'Coal Stories' reprises this story through a walking tour designed to reflect the lives of Durham's expanding population, and the altered character of their city. The trail takes visitors around Durham City's historic landmarks, such as the Miners Association's Pitman's Parliament, as well as lesser-known sites such as St Margaret's Allotments and nearby alleyways.

You can find the guide at the following shops:


- Durham Cathedral Bookshop
- Palace Green Library shop
- Discovering Durham, Prince Bishops shopping centre
- Durham Museum and Heritage Centre, South Bailey
- The Durham Mining Museum at Spennymoor Town Hall


Or email durhamminingmuseumsecretary@gmail.com to request a copy of the book.

Find out more at durham.ac.uk/research/institutes-and-centres/durham-energy-institute/about-us/news/coal-stories

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