

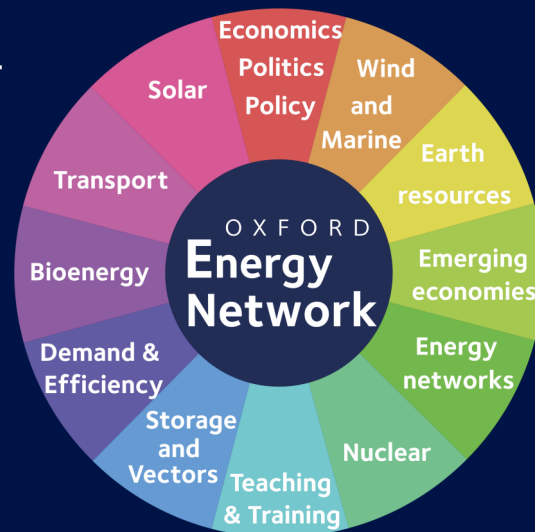


Oxford Energy Network 12th Energy Day

Equity for the Energy Transition

17 September 2024

Martin Wood
Lecture Theatre
Department of
Physics



Oxford Energy Network

The **Oxford Energy Network** at the University of Oxford has been established for more than a decade. It provides visibility for energy research at Oxford, and offers an internal forum for connecting energy researchers across disciplines.

Supported by the MPLS Division under the umbrella of Oxford Networks for the Environment, the network brings together researchers across the University of Oxford who are working to address the major technical, social, economic and policy challenges of providing secure, affordable and sustainable energy for all. The Network engages with industrial partners, policy specialists, non-governmental and third-sector organisations.

The energy network organises term-time seminars, with topical speakers examining energy research and practice.

Register to receive the network newsletter at
energy.ox.ac.uk/contact/

The ZERO Institute

The **ZERO Institute** is multi-disciplinary hub for zero-carbon energy research, education and innovation at The University of Oxford.

The transition to a zero-carbon economy is amongst the greatest challenges humanity has ever faced: our goal is to support the transition to a zero-carbon energy future, working closely with policy and practice. We use a broad energy lens, spanning energy generation, conversion, storage, distribution and use, and explore technologies including renewable generation alongside strategies to improve energy efficiency and reduce energy demand. We are tackling technical, economic and social challenges to enable a just energy transition and use the outcomes of our research to inform teaching and policymaking from a local to a global level. Our partnerships with industry, and our entrepreneurial activities are translating our work to real world impact. Collectively, we are shaping the future zero-carbon energy system.

Welcome

Robin Morris

Convenor, Oxford Energy Network



Welcome to the 12th Oxford Energy Day, *Equity for the Energy Transition*.

Our focus this year brings us together to discuss relevant innovation and research from the UK and further afield. I hope will take this opportunity to connect, across disciplines and work settings.

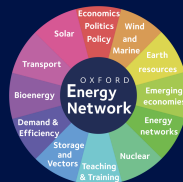
We are grateful for MPLS Division support for the network. Thanks are due to the ZERO Institute for making this Energy Day possible, and to the Department of Physics for hosting us. Please join me in thanking all the speakers.

I look forward to seeing you at future Oxford Energy Network seminars (sign up at the link opposite if you don't receive the newsletter), and at future ZERO Institute events.

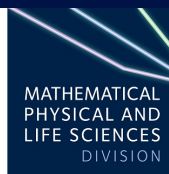
Enjoy the day!

Robin

Robin is the Henry Royce Institute Research and Business Engagement Lead for Electrochemical Systems in the Department of Materials. He has been Convenor of the Oxford Energy Network since 2021.



University of Oxford
**MATHEMATICAL, PHYSICAL
AND LIFE SCIENCES DIVISION**



Agenda: Morning

PLENARY SESSION

09:00 Registration opens

09:30 Welcome

09:35 Olivia Coldrey, IIASA

Addressing cooking poverty for an equitable energy transition

10:10 Michael Baker, SSEN

Strategic development plans for a just transition

10:45 David Howey

Real-world performance of small off-grid solar systems in Africa

11:15–11:45 COFFEE BREAK

11:50 Juliet Davenport, Energy Institute

12:25 Sarah Hassenpflug, Oxfordshire County Council

Programme may be subject to change

LUNCH

13:00 – 13:55

Programme may be subject to change

Agenda: Early afternoon

GLOBAL STREAM 1

14:00 Mark Spratt, Swansea University
TEA at Sunrise, the Strategic university network to revolutionise Indian solar energy

14:30 Anupama Sen
Trilemma or Trinity? The nexus of economic growth, circular economy, and net zero

15:00 Nikita Sud
The unjust energy transition

Martin Wood

Parallel sessions

COFFEE BREAK
15:30 - 16:00

UK STREAM 1

14:00 Thomas Morstyn
Making Resource Adequacy a Private Good

14:30 Mairi Brookes, Low Carbon Hub
The role of community energy and how Low Carbon Hub can enable decarbonisation at the grid edge

15:00 Tina Fawcett
Energy and equity: UK perspectives

Lindemann Lecture Theatre

COFFEE BREAK
15:30 - 16:00

Agenda: Late afternoon

GLOBAL STREAM 2

16:05 Sugandha Srivastav
Contracts and corruption evidence from Pakistan's power sector

16:35 Yael Parag, Reichman University
Community and Distributed Energy: benefits and concerns

Martin Wood

Parallel sessions

UK STREAM 2

16:05 Nick Banks and Eleanor Watts (RHILC)
Place-based approaches in the energy transition: the Clean Heat Streets project

16:35 Mary Gillie, Energy Local
Benefits of cooperation in local energy communities

Lindemann

Programme may be subject to change

CLOSING PLENARY SESSION

17:05 Panel discussion on The ZERO Institute
Led by **Malcolm McCulloch**

In conversation with **Paul Shearing**, **Radhika Khosla**, **Jack Umenberger**, **Katharina Tinka Marquardt**.

Martin Wood

17:40 DRINKS RECEPTION
18:50 CONFERENCE CLOSES

Olivia Coldrey

IIASA

Olivia has 25 years' experience in international energy markets, gained in legal, finance and strategy roles. Past executive roles include Head of Energy Finance and Clean Cooking at Sustainable Energy for All, where she led the flagship Energising Finance research; Director, Sustainable Finance at REEEP and Investment Director of the Australian government's Australian Solar Institute.

Olivia is a board member of Energy Peace Partners and a member of the Australian Renewable Energy Agency's Advisory Panel. Her research interests lie in financing the energy transition in emerging markets, with a focus on clean fuels and technology for cooking.



Michael Baker

SSEN

Michael Baker is the Strategic Network Development Lead at Scottish and Southern Electricity Networks.



Michael graduated from the University of Glasgow with a Master's in Electrical and Electronic Engineering in 2017.

Michael's work is dedicated to planning the future distribution network to achieve net zero by 2050. With a strong background in engineering and a passion for sustainable energy solutions, he plays a crucial role in shaping the energy landscape for a greener future.

David Howey

Department of Engineering Science

David Howey is a Professor of Engineering Science at the University of Oxford, with a focus on energy storage engineering, where he has co-authored over 120 articles, and several patents, and is the recipient of grant funding from UKRI, the EU, Faraday Institution, and industry.

David currently leads a £1M EPSRC project on grid integration of energy storage, and workstreams within the Faraday Institution's £6M Multiscale Modelling project and two €5M+ EU projects ('IntelLiGent' and 'DigiBatt'). He is organiser of the award-winning Oxford Battery Modelling Symposium, and a member of the editorial boards of IEEE Transactions on Industrial Informatics and Oxford Open Energy, plus the Strategic Leadership Group for the Ayrtton Challenge on Energy Storage. He is also academic co-founder of Oxford-based spin-out company, Brill Power Ltd.



Juliet Davenport

Energy Institute

Juliet Davenport currently sits on the board of the Crown Estate, Connected Kerb, the Energy Ombudsman and Atrato Onsite Energy, and is President of the Energy Institute



Juliet has been an innovator in energy for over 20 years, working on ideas to fight climate change and transform the sector for the better. In 2013, she was awarded an OBE for services to renewables. As the first female CEO of a UK energy supplier, Juliet knows first-hand the challenges women face in the sector and the value that greater diversity in business can bring. She was a founding member of the energy sector's POWERful Women's Energy Leaders Coalition.

Sarah Hassenpflug

Oxfordshire County Council

Sarah is Energy Systems Lead at Oxfordshire County Council

Sarah is helping to move Oxfordshire to a dynamic Local Area Energy Planning (LAEP) approach with the Energy Systems and Investment team.

Working with key partners across energy networks, academia, community, local authority and commercial on projects and programmes progressing the LAEP framework to enable the scale up of renewable energy, zero carbon heat, energy storage and demand reduction programmes to meet net zero, secure economic development and a fairer, more flexible energy system.



Mark Spratt

University of Swansea

Mark is the TEA at Sunrise Lead

Mark is a solar energy specialist. Attracted to solar energy by its simplicity in his youth, a quarter century experience of working with solar technologies leaves Mark as enthusiastic as ever about its ability to transform people's lives.

From roles in academia and industry, testing to product development, and laboratory to field he understands the impact that a poorly-selected part or incorrect installation can have on the uptake of solar energy. Mark works to ensure solar energy is delivered sustainably, reliably and with maximum benefit to those who use it.



Anupama Sen

Smith School of Enterprise and the Environment

Anupama Sen is Head of Policy Engagement for the Smith School of Enterprise and the Environment, where her role is to contribute to the School's mission and strategy by helping to increase the impact of its work.

Prior to the Smith School, Anupama spent over 10 years as a Senior Research Fellow at the Oxford Institute for Energy Studies. She is interested in the socioeconomic implications of the energy transition, its implications for energy consumers, producers and governments, and in the circular economy in relation to energy.



Nikita Sud

Department of International Development

Nikita is Professor of the Politics of Development in the Department of International Development

Nikita Sud is an interdisciplinary social scientist. She is researching the flows and contests around energy that shape the Global South. Her book 'Energy, Extraction and Assertion in the Majority World' is under contract with Princeton University Press. She has also published extensively on global land deals and land grab, and on democracy, authoritarianism, and the Indian state. At Oxford, she teaches on the MPhil and DPhil in Development Studies, and convenes the paper: Climate Questions from the Global South.



Thomas Morstyn

Engineering Science

Thomas Morstyn is Associate Professor in Power Systems with the Department of Engineering Science



Thomas leads a research group focused on power system control and energy market design. He is an associate editor of IEEE Transactions on Power Systems and co-chairs the IEEE Power & Energy Society Taskforce on Quantum Computing for Power System Operations. His research focuses on the design of control systems and markets to enable the large-scale integration of distributed power system flexibility.

Mairi Brookes

Low Carbon Hub

Mairi is Smart Energy Systems Director



Mairi has 16 years of policy development, project delivery and strategy experience in the world of sustainability including non-domestic energy efficiency, electricity market reform, community energy and electric vehicle infrastructure. Mairi was the Sustainable City Manager at Oxford City Council and worked closely with Low Carbon Hub when it was starting up.

She is motivated by tackling big challenges and enabling others to achieve things they never thought possible.

Tina Fawcett

Environmental Change Institute

Tina Fawcett is a Senior Researcher and Deputy Leader of the Energy Group at the Environmental Change Institute.



Tina leads social research in the Energy Demand Observatory and Laboratory (EDOL) programme and is Co-I of the EPSRC Network for the Decarbonisation of Heating and Cooling, amongst other projects. Tina's research concerns energy use by households and organisations, and uses a multi-disciplinary approach to understand current usage patterns and explore policies for reducing energy use/carbon emissions. Her other interests include the Museum of Climate Hope (climatehope.uk) and climate change education research and outreach.

Sugandha Srivastav

Smith School of Enterprise and the Environment

Sugandha Srivastav is Lecturer and Postdoctoral Fellow in Environmental Economics



Sugandha is an economist specialising in the energy transition. She has worked as an environmental economist at Vivid Economics where she advised governments on energy policy, carbon pricing, and renewable auctions. Her research explores how to bring novel clean energy technologies to market, focusing on aspects such as contract design, risk reduction and climate finance. Her work has been featured in outlets such as the Financial Times and The Guardian. She has also given a TEDx talk on solar innovation. Sugandha was an invited judge for UChicago's market shaping accelerator led by Nobel Laureate, Michael Kramer, which aims to use advanced market commitments to bring early-stage clean tech to market.

Yael Parag

Reichmann University

Yael Parag is Head of the Energy Programme at Reichman University, Israel.

Yael's research is at the forefront of addressing critical energy challenges, with a primary focus on future and decarbonised electricity systems, energy security, and innovation at the grid's edge. She studies prosumer markets, peer-to-peer energy trading, community energy, microgrids and electricity islands, demand flexibility and EV charging management, consumer behaviour and consumer engagement with smart energy technologies.



Mary Gillie

Energy Local

Mary is Founder and Director of Energy Local

Mary is an applied physicist by training but her career has been as an engineer. Her main area of expertise is the development of smart grids for the electricity distribution system to increase efficiency and to easily integrate renewable generation. She loves new ideas and has run numerous field trials and feasibility studies to make our energy systems more efficient and to connect more renewables. She enjoys working with science and people to make our society and environment better for everyone. She has been bringing together the different components for Energy Local for a number of years.



Nick Banks

Environmental Change Institute

Researcher in Local Energy Systems

Nick is a social researcher with over 25 years of experience in the sustainable energy field, specialising in social dimensions of the energy transition. He currently works on engagement strategy and evaluation of the Clean Heat Streets project and is interested in theoretical and practical retrofit.



Malcolm McCulloch

Engineering Science

Malcolm McCulloch is Professor in Engineering Science and Group Leader of the Energy and Power Group

Malcolm's interests are in the area related to the domestic energy sector, development of user-centric demand side management technologies, to enable behaviour change. He has been associated with a number of spin outs, including Intelligent Sustainable Energy, Kepler Energy, and Oxford Yasa Motors. The group develops intelligent, cost-effective nano- and micro-grid solutions that provide a scalable pathway to distributed electrification in energy for development.



Eleanor Watts

Director, Rose Hill and Iffley Low Carbon

A community group in south-east Oxford, RHILC seeks to engage residents who are outside the green bubble in cutting carbon. Equity is at its core. Founded in 2012, it has run thermal imaging and insulation advice campaigns, enabled solar PV installations and more.



Paul Shearing

Engineering Science

Paul Shearing is Professor of Sustainable Energy Engineering at the Department of Engineering Science and Director of the ZERO Institute. He holds the Royal Academy of Engineering Chair in Emerging Battery Technologies.



Radhika Khosla

Smith School of Enterprise and Environment

Radhika Khosla is Associate Professor at the Smith School of Enterprise and Environment, School of Geography and the Environment, and Research Director of the Oxford India Centre for Sustainable Development. Radhika is co-Investigator of Oxford Net Zero and co-Investigator of the ZERO Institute.



Jack Umenberger

Engineering Science

Jack Umenberger is a Senior Research Fellow with the Department of Engineering Science and the ZERO Institute for zero-carbon energy research.



Katharina (Tinka) Marquardt

Department of Materials

Tinka is Associate Professor of Materials Microscopy and Microstructure Evolution and is Research Associate as part of the ZERO Institute.



Attendees

Aaron Anstey

Adrian Arbib

Alex Zhang

Amelia Griffiths

Amy Radford

Anca Mihalache

Andrew Mackenzie

Andris Simeon

Anna Railton

Anupama Sen*

Arthur Lovell

Arthur Lovell

Arup Chakraborty

Ben Armstrong

Brenda Boardman

Brendan Devlin

Brendon Tankwa

Bryony Parrish

Charlie Kniebe-Evans

Chris Jacques

Chris Jardine

Christopher Hull

Daniel Tate

David Howey*

David Pyle

David Wallom

Dawn Gordon

Denis Gross

Dimitra Apostolopoulou

Ed Nemeshanyi

Efe RIZVANOĞLU

Eleanor Hamilton Clark

Eleanor Watts*

Emre Eren Korkmaz

Evrin RIZVANOĞLU

OUI

Chemistry

School of Geography and the Environment

Department of Engineering Science

School of Geography and the Environment

Materials Department

MPLS - Development

Environmental Change Institute

St Anthony's European Centre

Geography and the environment

School of Geography and the Environment

Chemistry

ECI

Engineering Science

Politics and International Relations (DPIR)

Engineering Science

Earth Sciences

Eng Sci

OUI

DAE Office

AOPP

RHILC

Compas

Turkish Grand National Assembly

Attendees – continued

Felippa Amanta	ECI
Francis Akpata	Majlis Energy
Francois Sennesael	Politics and International Relations
Geoff Sutton	
George Smith	Materials
George Tebbutt	Materials
George Todd	OSE
Gian Melloni	Engineering Science
Gill Kelleher	
Gulcin Avul	Chemistry Department
Hank Wu	Physics
Harriet Waters	Estates Services
Helen Smith	Physics
Helen Watts	Oxford Brookes
Ian Byrne	
Ievgeniia Kopytsia	Faculty of Law
Ioannis Papakonstantinou	University College London
Isaac Holmes-Gentle	Chemistry
Jack Bruford	Engineering
Jack Umenberger*	Engineering Science
Jane Grindey	
Jesus Lizana	Engineering Science
Joy Bhattacharjee	
Juliet Davenport*	
Jun Chen	Materials
Junfu Bu	Materials
Kai Ling Ng	Engineering science
Karan Mukhi	Computer Science
Katerina Korotkova	
Katharina Marquardt*	Materials
Katya Soegiharto	Department of Engineering Science
Kingsmill Bond	RMI
Kirsty Lloyd-Jukes	
Laurence Haar	Brighton
Lucy Field	

Attendees – continued

Mairi Brookes*	Low Carbon Hub
Malcolm McCulloch *	Engineering Science
Marina Topouzi	SoGE/ECI
Mark Spratt	Swansea
Mary Gillie*	Energy Local
Meric Sevgi Eren	Continuing Education
Michael Baker*	SSEN
Michele Attisani	
Mim Saxl	Low Carbon Hub
Neil Simons	
Nicholas Mitsos	
Nick Banks*	ECI
Nick Jelley	Physics
Nicola Courtier	Engineering Science
Nikita Sud*	International Development
Noël Hallemans	Department of Engineering Science
Olivia Coldrey*	
Paul Shearing*	ZERO Institute
Paul Spencer	Oxford Brookes
Pete Barbrook-Johnson*	ECI / SoGE / INET
Phil Grunewald	Engineering Science
Philippa Lockwood	Smith School
Poornima Kumar	ECI, SoGE
Radhika Khosla*	Smith School, SOGE
Rajat Gupta	Oxford Brookes
Rebecca Perriment	Engineering Science
Robert Weatherup	Materials
Robin Morris	Materials
Saiful Islam	Materials Science
Sam Hampton	Geography
Sami Walter	OSE
Sarah Ball	
Sarah Hassenpflug*	Oxfordshire County Council
Sarah J Darby	Environmental Change Institute
Saskya Huggins	

Attendees – continued

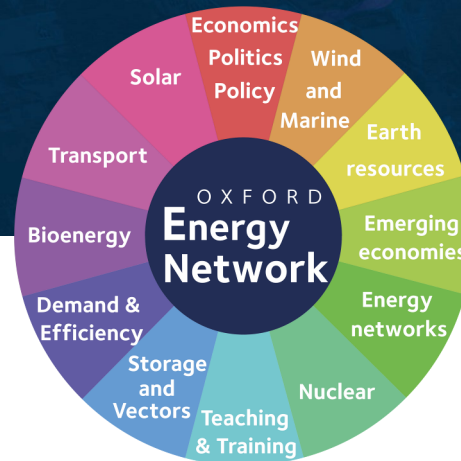
Scot Wheeler	Engineering Science
Snigdha Lal	Physics
Stephan Gaiser-Porter	
Steve Smith	Smith School, SoGE
Stuart Jenkins	Geography
Sugandha Srivastav*	Geography
Suk Nyan Ng	School of Geography and the Environment
Sunny Tiwari	Department of Physics
Theo Hobson	Department of Materials
Thomas Bryden	Engineering Sciences
Thomas Gibson	Saïd business school
Thomas Morstyn*	Department of Engineering Science
Timothy Soanes	
Tina Fawcett*	ECI
Tobias Huzarski	
Weijia Yang	Department of Engineering Science
Weiqi Hua	University of Birmingham
Weixin Song	materials
Xiangjie Chen	Loughborough University
Xiyu Ren	Geography
Yael Parag*	Reichman University
Yekatherina Bobrova	ECI, SoGE
Yihong Zhou	Department of Engineering Science
Yongyueheng Xiong	Chemistry
Zeynep Tekler	Department of Engineering
Zhan Xu	Birmingham
Zsuzsa Mayer	Ecosynch

* Denotes Speaker: Attendees wishing to be listed as of 12 Sep 2024

Oxford Energy Network Coordinator

Karen Parry

Environmental Change Institute



The Oxford Energy Network
connects energy researchers across
the University, building on multiple
disciplines to address the major
challenges and opportunities to enable
and accelerate the transition to a zero
carbon energy system.

info@energy.ox.ac.uk

www.energy.ox.ac.uk

+44(0)1865 285181

