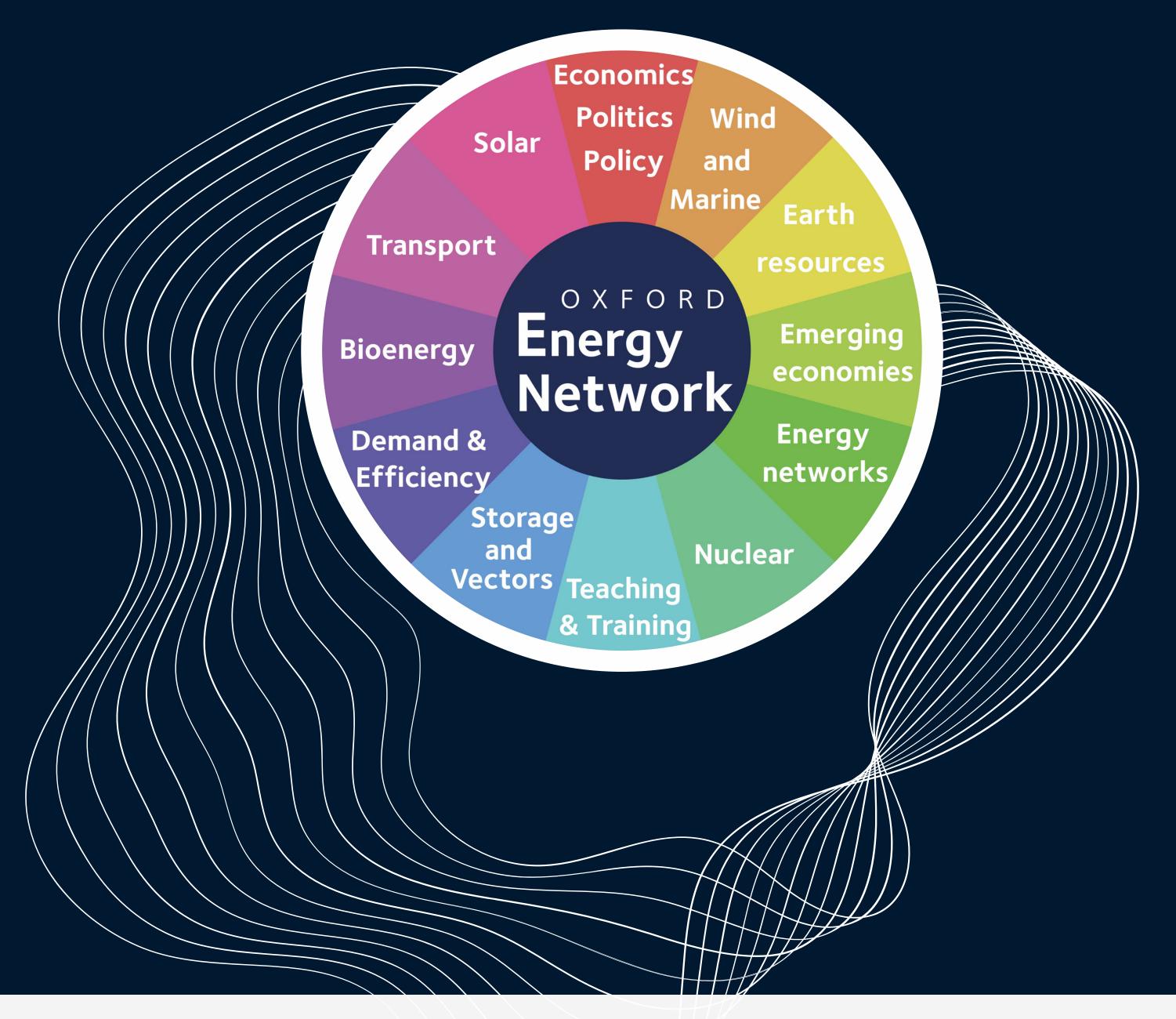
# **10th OXFORD ENERGY DAY** Energy and Net Zero



# Programme

10th Oxford Energy Day

Wednesday, 23 March 2022

9:30am - 6:30pm

Blavatnik School of Government, Oxford

www.energy.ox.ac.uk

# Welcome to the 10th Oxford Energy day

Welcome to the 10th Oxford Energy Day, our annual meeting for the energy research community in the University. We are pleased to welcome friends and colleagues from Oxford and elsewhere back in person to discuss a topic of broad interest.

This year we are looking at the long-term picture: "Energy and Net Zero in the UK". The goal of net-carbon emissions is driven by the imperative of stabilising the climate. And it is clear that, in practice, this will require almost all energy systems to be zero carbon, i.e. fossil free. At the same time, the consequences of the appalling invasion of Ukraine remind us that the other major drivers of energy policy – security and affordability – are as important as ever.

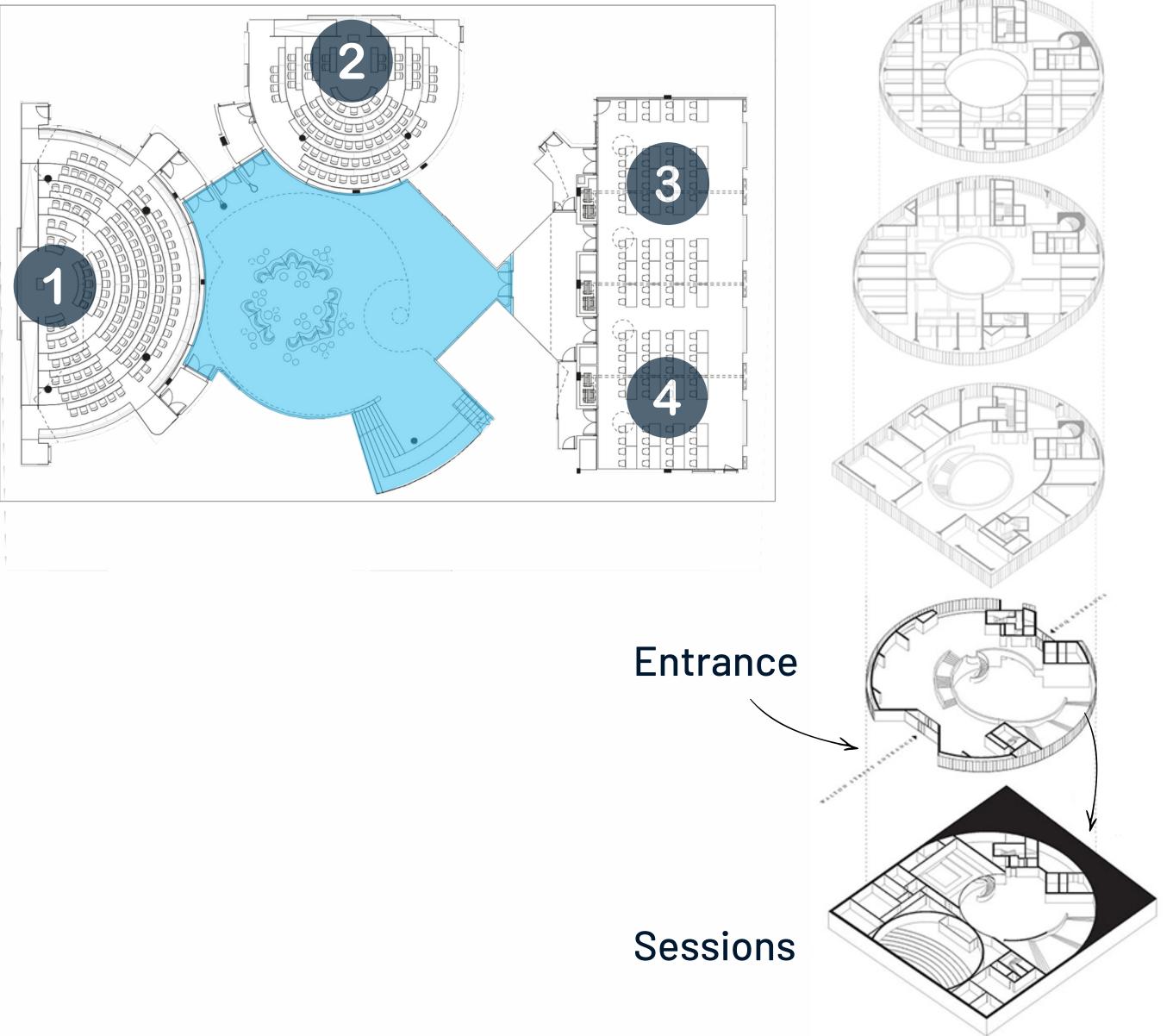


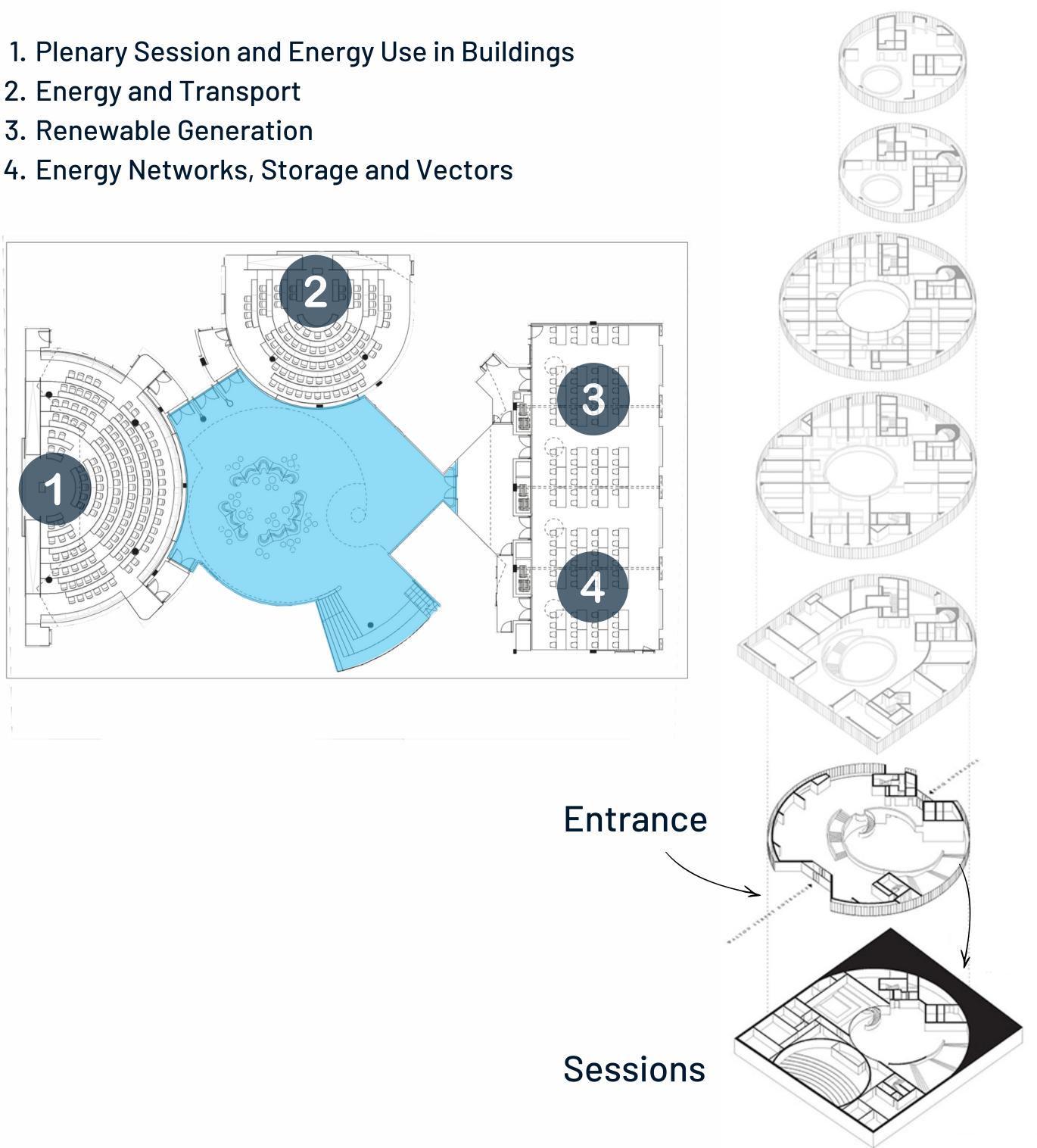
This year, we have a new and more participatory structure for the day, with parallel sessions to allow show-casing and discussion of more of the great diversity of zerocarbon research being undertaken in Oxford. It's a chance to learn and listen, but also to contribute.

# Nick Eyre Chair, Oxford Energy Network Steering Group

# **Blavatnik School of Goverment map**

- 3. Renewable Generation
- 4. Energy Networks, Storage and Vectors





# **10th Oxford Energy Day** Energy and net zero in the UK

# MORNING PLENARY SESSION LECTURE THEATRE

9:00 am	Registration and coffee		
9:30 am	Introduction	Nick Eyre and Malcolm McCulloch, University of Oxford	
9:40 am	UK net zero plans	Mike Thompson, Committee on Climate Change	
10:10 am	The county's plans	Pete Sudbury, Oxfordshire County Council	
10:40 am	Headlines from key energy programmes led by Oxford	Malcolm McCulloch, INTEGRATE programme	
		Cameron Hepburn, Post-carbon Transition	
		Peter Bruce, Faraday Institution projects	
		Radhika Khosla, Future of Cooling	
		Nick Eyre, CREDS	
12:00 pm	Move to parallel sessions		



# Programme overview

# AFTERNOON PARALLEL SESSIONS

	Seminar Rooms 1+2	Semina	r Rooms 3+4	Lecture Theatre 1	Lecture Theatre 2
	Energy Use in Buildings		nergy & ansport	Energy networks, storage & vectors	Renewable Generation
Chair	Charlie Wilson & Tina Fawcett	Christian Brand		Malcolm McCulloch	Andrew Watt
12:10 pm	Overview, policy including product regulation, Tina Fawcett	Overview, Siobhan Campbell		Local networks, Melanie Bryce	Integration of renewables, Sarah Darby
12.20 pm	Demand reduction, Marina Topouzi	People and travel, Debbie Hopkins		Policy and reguations for smart local energy systems, <b>Tedd Mose</b>	Tidal energy, Thomas Adcock
12:40pm	Panel Q&A	Panel Q&A		Panel Q&A	Panel Q&A
1:00pm	Lunch, posters and networking				
2:30pm	Local trials, Sam Hampton	Integration of e-mobility, Katherine Collett		Batteries for vehicles, Saiful Islam	Offshore wind, Byron Byrne
2:45pm	Barriers to residential solutions, <b>Gavin Killip</b>	Policy and regulation, Hannah Budnitz		Battery modelling and control, <b>Dave Howey</b>	Solar PV, Henry Snaith
3:00pm	Panel Q&A	Panel Q&A		Panel Q&A	Panel Q&A
3:20pm	Tea, posters and networking				
3:50pm	Infrastructure, Jesus Lizana	Heavy-duty vehicle power, Luke Marion		Large-scale storage, Chris Llewellyn-Smith	Bioenergy, Alison Smith
4.00pm	Digitalisation to enable changes in practice and energy reduction, <b>Charlie Wilson</b>	Shipping decarbonisation, Bill David		Hydrogen and carriers, Kylie Vincent	Economics of energy system decarbonisation, Sam Loni
4:20pm	Panel Q&A	Panel Q&A	<b>L</b>	Panel Q&A	Panel Q&A
4:40pm	Move back to plenary session (Lecture Theatre 1)				
4:45pm	Facilitated feedback and discussion Philipp Grunewa			vald	
	Closing remarks Nick Eyre and Malcolm McCulloch				
5:20pm	Closing remarks				
5:20pm 5:25pm	Closing remarks		Announc	ements	
	Closing remarks		-		

# Speakers, chairs and panel members

# MORNING PLENARY SESSION **SPEAKERS**



#### NICK EYRE

Professor of Energy and Climate Policy, Environmental Change Institute, University of Oxford Nick Eyre is Professor of Energy and Climate Policy in the Environmental Change Institute of the University of Oxford. He is currently Director of the Centre for Research into Energy Demand Solutions (CREDS), which is UK Research and Innovation's major centre for research on energy use. He is a Supernumerary Fellow of Oriel College and scientific advisor on climate change to Oxford City Council. From 2007 to 2017, he was a Co-Director of the UK Energy Research Centre, and before that Director of Strategy at the Energy Saving Trust.



# MALCOLM McCULLOCH

#### Professor in Engineering Science, University of Oxford

Malcolm McCulloch is Professor in Engineering Science and Group Leader of the Energy and Power Group at the University of Oxford. His interests are in the area related to the domestic energy sector, development of user centric demand side management technologies, useful information to enable behaviour change. Previous work lead the spin-out Intelligent Sustainable Energy, of which Malcolm is both a founder and non-executive director. This has merged to form Navetas Energy Management. He has spun out four for-profit companies and two not-for-profit enterprises. He has over 200 publications and over 25 patent and patent applications. He is a 2018 Laurate of the Gusi Peace Prize.



# MIKE THOMPSON

#### Chief Economist, Climate Change Committee

Mike Thompson is Chief Economist at the Committee on Climate Change, the UK's independent statutory advisor on climate change. The Climate Change Committee provides evidence-based advice on the UK's climate targets, plans and progress in delivering them. Mike directs the CCC's analysis, focusing on reducing UK greenhouse gas emissions as well as work on preparing for the impacts of climate change. He led the CCC's ground-breaking 2019 report that recommended a 2050 Net Zero target for the UK – requiring a 100% reduction in greenhouse gas emissions as a necessary, feasible and cost-effective contribution to stopping global warming. Mike has been part of the CCC's senior team since its creation in 2007.



# PETE SUDBURY

Green Party Councillor, Oxfordshire County Council, Cabinet Member for Climate Change and Environment

Pete Sudbury has degrees in Natural Sciences, Medicine, Psychiatry and MBA. He is a former NHS Medical Director, and has worked at Health IT with Hewlett-Packard and Silvopasture, a carbon sequestration start up in Scotland. He is an early adopter of GreenTech, including: Solar H/W, PV, battery storage, rainwater recycling, superinsulation and triple glazing, heat exchange ventilation, hybrid (Prius), partial hybrid (Audi e-Tron) and full EV (Tesla).



# PETER BRUCE FRS

#### Professor of Materials, University of Oxford

Peter Bruce is Wolfson Professor of Materials at the University of Oxford. He is a founder and Chief Scientist of the Faraday Institution, the UK centre for research on electrochemical energy storage. In 2018 he was appointed as Physical Secretary to the Royal Society. His research interests embrace materials chemistry and electrochemistry, with a particular emphasis on energy storage, especially lithium and sodium batteries.



# RADHIKA KHOSLA

#### Associate Professor at the Smith School of Enterprise and Environment

Radhika Khosla is an Associate Professor at the Smith School of Enterprise and Environment, and Research Director of the Oxford India Centre for Sustainable Development at the University of Oxford. She works on examining the productive tensions between urban transitions, energy services consumption and climate change with a focus on developing country cities. She leads the Future of Cooling Programme at the Oxford Martin School, and is a Co-I at Oxford Net Zero. She has contributed to the UNEP Gap Report and the IPCC. Radhika has an MPhys in Physics (Oxon) and a PhD in the Geophysical

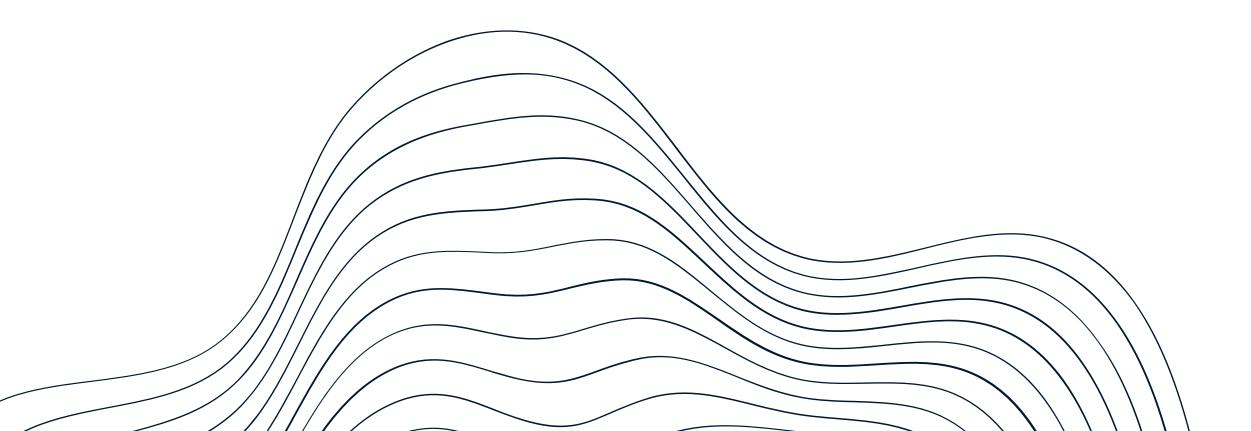
Sciences (UChicago).



## **CAMERON HEPBURN**

#### Director of the Smith School of Enterprise and the Environment

Cameron Hepburn is Professor of Environmental Economics at the University of Oxford, and Director of the Smith School of Enterprise and the Environment. He also serves as the Director of the Economics of Sustainability Programme, based at the Institute for New Economic Thinking at the Oxford Martin School. Cameron has published widely on energy, resources and environmental challenges across disciplines including engineering, biology, philosophy, economics, public policy and law, drawing on degrees in law and engineering (Melbourne University) and masters and doctorate in economics (Oxford as a Rhodes Scholar). He has co-founded three successful businesses and provides advice on energy and environmental policy to government ministers (e.g. China, India, UK and Australia) and international institutions (e.g. OECD, UN).



# AFTERNOON PARALLEL SESSION SPEAKERS

# **Energy Use in Buildings**



# CHARLIE WILSON

Professor of Energy and Climate Change, Energy Group, Environmental Change Institute, University of Oxford

Charlie Wilson leads the Energy programme in the Environmental Change Institute and is a Jackson Senior Research Fellow at Oriel College. He is also a visiting research scholar at the International Institute for Applied Systems Analysis (IIASA) in Austria. Charlie's research interests lie at the intersection between innovation, people, and policy in the field of energy and climate change mitigation.



## **TINA FAWCETT**

#### Senior Researcher, Energy Group, Environmental Change Institute, University of Oxford

Tina Fawcett is a Senior Researcher and Deputy Leader of the Energy Group at the Environmental Change Institute, University of Oxford. Her 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. Tina leads the 'policy and governance' theme in the Centre for Research on Energy Demand Solutions (CREDS). She also works on Energy Superhub Oxford and is Co-I of the EPSRC Network for the Decarbonisation of Heating and Cooling. Other interests include climate change education research and outreach.



# **MARINA TOPOUZI**

#### Researcher, Energy Group, Environmental Change Institute, University of Oxford

Marina is an interdisciplinary researcher at the Environmental Change Institute's Energy Programme. She has a strong background in building energy use and demand focusing on the 'building/user' system and factors that affect buildings' energy performance from construction to in-use. Her research for the Centre for Research into Energy Demand Solutions is on deep renovation policy initiatives and policy mixes across the world including both technology-focused and people-focused policies. Alongside she is member of the BSI steering task group for the UK retrofit standards for domestic and non-domestic buildings (BSI PAS 2035: 2019 and PAS 2038) sponsored by the Department for Business, Energy and Industrial Strategy (BEIS). Prior to her academic role, she worked for a decade as a professional architect in a wide range of projects for the public and the private sector.



### SAM HAMPTON

#### Researcher, Energy Group, Environmental Change Institute, University of Oxford

Sam Hampton is a Researcher in the Environmental Change Institute at the University of Oxford, Research Fellow at the University of Bath, and freelance sustainability consultant. His research focuses on the governance of the zero-carbon transition, particularly with respect to social, technical and business innovation. In his role at Oxford, Sam works on Energy Superhub Oxford, a national energy innovation demonstrator project involving a grid connected battery, electric vehicle infrastructure, and ground source heat pumps in social housing. At Bath University, Sam is conducting research on the capabilities of different people across society to adopt low carbon lifestyles.



# **GAVIN KILLIP**

#### Researcher, Energy Group, Environmental Change Institute, University of Oxford

Gavin Killip has a BA in Linguistics from York University and an MSc in Architecture: Advanced Environmental and Energy Studies from the University of East London, in association with the Centre for Alternative Technology. He is interested in finding solutions for a more sustainable built environment. He joined the University of Oxford at ECI in 2004 after working for 10 years on energy efficiency and building-integrated renewable energy projects in the voluntary and public sectors.



# JESUS LIZANA

#### Postdoctoral Researcher, Engineering Science, University of Oxford

Jesus Lizana is an architect and a Marie Curie Fellow at the University of Oxford. He specialises in thermal engineering in buildings and is an expert on zero carbon buildings and nearly Zero Energy Buildings. He earned his PhD at the University of Seville after completing a BSc in Architecture and MSc in Building Engineering. At Oxford, he is the leader of the RESCOOL project, an H2020 Marie Curie Project to support the climate-resilient design of cities under ever more frequent heatwaves. He also supports the interdisciplinary collaboration in the Future of Cooling Programme of the Oxford Martin School.

# Energy & Transport



# **CHRISTIAN BRAND**

Senior Research Fellow and Associate Professor, Environmental Change Institute, Transport Studies Unit, University of Oxford

Christian Brand is a Senior Research Fellow and Associate Professor at the Environmental Change

Institute (ECI) and the Ttransport Studies Unit. Since 2012 he has also been the Assad Kotaite Senior Research Fellow in Transport Studies at Linacre College Oxford. Before coming to Oxford he worked as a consultant at AEA Technology (now Ricardo Energy & Environment).



# SIOBHAN CAMPBELL

#### Deputy Chief Scientific Adviser, Department for Transport

Siobhan Campbell is Deputy Chief Scientific Adviser and Head of the Science, Innovation and Technology division in the Department for Transport (DfT). Prior to this Siobhan was also head of social and behavioural science and evaluation in DfT, and retains a strong interest in these areas. She is the deputy head of the UK government's Social Research profession (GSR), helping provide leadership and direction to its 1,500 GSR members. Siobhan has worked in a number of government departments including the Department of Energy and Climate Change, HM Treasury, the Scottish Government and the Home Office on a wide range of policy and research areas.



# **DEBBIE HOPKINS**

# Associate Professor in Human Geography, Department for Continuing Education's Sustainable Urban Development, University of Oxford

Debbie is an Associate Professor in Human Geography, jointly appointed between the Department for Continuing Education's Sustainable Urban Development programme and the School of Geography and the Environment at the University of Oxford. Her research focuses on decarbonising transport, particularly as it relates to questions of justice and equity. She currently leads projects on road freight, aviation and the hypermobile minority.



# **KATHERINE COLLETT**

#### Senior Postdoctoral Researcher, Energy and Power Group, University of Oxford

Katherine Collett is a Senior Postdoctoral Researcher in the Energy and Power Group of the Engineering Department at Oxford and a Fellow of Integrate at the Oxford Martin School. Katherine's research addresses the cross-disciplinary challenges associated with the transition to a zero-carbon energy system and the technical advances that make this economically appealing. Her recent research has focused on the adoption of electric vehicles in different contexts globally.



# HANNAH BUDNITZ

#### Transport Studies Unit, Department of Geography, University of Oxford

Hannah Budnitz is a Research Associate in Urban Mobility at the Transport Studies Unit. Her research concentrates on the interactions between land use, activity patterns, and travel behaviour, as well as transport's role in tackling climate change mitigation and adaptation. She has a background in transport policy and planning, working in both the public and private sectors.



# LUKE MARION

#### Finance & Commercial Director for the Oxford Bus Company

Luke is a chartered accountant and has spent the past decade working to develop and improve Oxfordshire's public transport. Over the past year Luke has been working with partners including Oxfordshire County Council and Pivot Power on a £54m project to deliver more than 100 electric buses to Oxford's streets from 2023. Luke has been a non-executive director of the Low Carbon Hub since 2015 and has enjoyed keeping pace with the energy transition through his work with that organisation!



# **BILL DAVID FRS**

Professor of Energy Materials Chemistry, Inorganic Chemistry Laboratory, University of Oxford

Bill David FRS is Professor of Energy Materials Chemistry in the Inorganic Chemistry Laboratory at the University of Oxford and STFC Senior Fellow at the Rutherford Appleton Laboratory. His research interests are based around sustainable and scalable zero-carbon chemical and electrochemical energy storage and power provision, focussing on high-power sodium-ion batteries and exploring the options for developing ammonia as a green fuel.

# **Renewable Generation**



### **ANDREW WATT**

#### Associate Professor of Materials, University of Oxford

Andrew Watt leads a group of 14 scientists on energy materials research from the synthesis of new nanomaterials through to the fabrication, characterization and application of devices. The group has considerable experience in the synthesis of nanomaterials, thin film device fabrication, optoelectronic materials characterisation and advanced transmission electron microscopy techniques. Recent highlights include, the demonstration of vacuum thermal evaporation of conducting polymers for solar cells, high resolution TEM imaging of polymer lamellae in bulk heterojunction photovoltaic devices, and the initial demonstration of a SnS nanocrystal heterojunction thin film photovoltaic devices.



# SARAH DARBY

#### Associate Professor, Energy Group, Environmental Change Institute, University of Oxford

Sarah researches human dimensions of energy systems, including relationships between activities/ processes and energy use, social learning, and the role of ICT. She describes and analyses how systems change through human and technological interactions; her work has included evaluating the early stages of the British smart metering rollout, analysing community energy and smart local energy projects, and assessing the potential for 'active demand' in electricity systems. She holds a BSc in Ecological Science from Edinburgh, a Diploma in Planning from Oxford Polytechnic and a doctorate from Oxford University.



# **THOMAS ADCOCK**

#### Associate Professor, Department of Engineering Science, University of Oxford

Tom Adcock is an Associate Professor in the Department of Engineering Science and a Tutorial Fellow at St Peter's College. He is a metocean engineer and as such seeks to understand the ocean environment for engineering applications. The main application of his work is offshore wind although he also has an interest in other marine renewable.



# **BYRON BYRNE**

#### Ørsted / Royal Academy of Engineering Research Chair in Advanced Geotechnical Design, Department of Engineering Science, University of Oxford

Byron Byrne focuses on geotechnical engineering for offshore wind. He was Principal Investigator for the Carbon Trust / Ørsted / Industry funded PISA project which delivered new design methods for large diameter offshore wind turbine monopiles. He leads the Oxford-Ørsted Framework research project on cyclic loading for offshore wind foundations and is Co-Investigator on the EPSRC / Industry ALPACA Project. He is the Oxford Director of the EPSRC CDT for Renewable Energy Marine Structures and Co-Investigator on the EPSRC CDT for Wind and Marine Energy Systems and Structures. He is a Fellow of the Royal Academy of Engineering and a consultant to the industry.



## **HENRY SNAITH**

#### Binks Professor of Renewable Energy, University of Oxford

Henry Snaith is the Binks Professor of Renewable Energy in the Physics Department of the University of Oxford and a co-founder and Chief Scientific Officer at Oxford PV Ltd. His research focuses on developing and understanding new materials and device concepts for photovoltaic solar energy conversion. His election as a Fellow of the Royal Society (FRS) credits his discovery of the use of perovskites in efficient solar cells, which has started a new field of research gaining both academic and industrial following.



# **ALISON SMITH**

#### Senior Research Associate, Environmental Change Institute, University of Oxford

Alison Smith is a Senior Research Associate at the Environmental Change Institute and works with the Nature-based Solutions Initiative at the department of Biology. Using interdisciplinary research to develop solutions that tackle multiple environmental, economic and social problems, her current work focuses on natural capital, ecosystem services, green infrastructure, nature-based solutions, land use planning and multiple benefits of climate adaptation and mitigation actions. One of the authors of Pathways to a zero carbon Oxfordshire, Alison is currently working with stakeholders in Oxfordshire and beyond to support land use planning and nature recovery using natural capital mapping and assessment tools. She is also leading development of a decision-support tool is working to help improve development outcomes.



# SAM LONI

Researcher, Smith School of Enterprise and the Environment, University of Oxford

Sam is a political economist working at the intersection of research and policy in the area of sustainable development. He is currently a Program Director at the UN Sustainable Development Solutions Network (SDSN) - a research and policy think tank working under the auspices of the United Nations Secretary-General. He also works with the Oxford Smith School of Enterprise and the Environment (SSEE) and conducts research on the economics of the net-zero transition with a specific focus on climate-economy models. He has been recognised by Forbes Magazine as 30-under-30, by the Nobel Peace Prize Forum as a young peacebuilder, and by the NAAEA as a young environmental leader.

# Energy Networks, Storage & Vectors



## **MELANIE BRYCE**

#### Oxfordshire Programme Director, Scottish and Southern Energy Networks

Melanie Bryce is the Oxfordshire Programme Director at Scottish and Southern Energy Networks (SSEN), and has worked across SSE since joining the company as a Graduate Engineer in 1996. She has wide ranging energy sector experience gained from roles that have spanned Wholesale Risk Management, Networks Regulation and Asset Management. This has most recently included leading Engineering and Investment teams, focussing on the Asset Management of the Distribution Network. Melanie has a Bachelor's Degree in Mechanical Engineering from Birmingham University.



# TEDD MOSE

#### Researcher, Energy Group, Environmental Change Institute, University of Oxford

Tedd Moss is a qualified lawyer, academic, and international consultant in energy, environment, climate change, technology, and sustainable development. As an Oxford Martin Fellow at the Programme on

Integrating Renewable Energy, his research focus is on the role of law in the transition to low carbon energy systems and the legal challenges of multi-scalar energy systems in developing countries. He also advises diverse teams on global energy law, policy, and regulation. He has held various multidisciplinary positions at Queen Mary University of London as well as the Universities of St. Andrews, Cape Town, Michigan, Dundee, and the London School of Economics.



# SAIFUL ISLAM

#### Statutory Chair in Materials Modelling, University of Oxford

Saiful Islam is the Statutory Chair in Materials Modelling at the University of Oxford. He grew up in London and obtained his Chemistry degree and PhD from University College London followed by a Postdoctoral Fellowship at the Eastman Kodak Labs, New York, USA. He returned to the UK to the University of Surrey and was appointed Professor of Materials Chemistry at the University of Bath in 2006, before joining Oxford in 2022. His research encompasses new materials for lithium batteries and perovskite solar cells with around 235 publications. He leads the Faraday Institution CATMAT project on lithium cathode materials and has received several awards including the 2020 ACS Award in Energy Chemistry and 2017 RSC Peter Day Award for Materials Chemistry.



# **DAVID HOWEY**

#### Professor of Engineering Science, University of Oxford

David Howey is a Professor of Engineering Science at the University of Oxford where he leads a group researching modelling and control of energy storage systems, with a particular focus on Li-ion batteries for electric vehicles and grid/off-grid storage, funded by Faraday Institution, EPSRC, EU and industry. He received an MEng degree in Electrical and Information Sciences from the University of Cambridge in 2002 and a PhD from Imperial College London in 2010. He is also co-founder of Brill Power Ltd., a company spun-out of his lab in 2016 focused on advanced battery management systems.



# CHRIS LLEWELLYN SMITH FRS

#### Emeritus Professor of Physics, University of Oxford

Professor Sir Chris Llewellyn Smith, who is a theoretical physicist, is currently leading a Royal Society study of energy storage. He has served as Director of Energy Research, Oxford University (2011-17), President of the Council of Synchrotron-light for Experimental Science and Applications in the Middle East (2008-17), and Director General of CERN (1994-1998, when the Large Hadron Collider was approved and construction started). He has written and spoken widely on science funding, international scientific collaboration and energy issues, and served on many advisory bodies nationally and internationally, including the UK Prime Minister's Advisory Council on Science and Technology (1989-92).



# **KYLIE VINCENT**

#### Professor of Inorganic Chemistry, University of Oxford

Kylie Vincent is Professor of Inorganic Chemistry, and Fellow of Jesus College at University of Oxford. She graduated from the University of Melbourne, Australia (BA/ BSc(Hons), Ph.D. (2004)), before carrying out postdoctoral research at the University of Oxford from 2002-2007. She then took up a Royal Society University Research Fellowship and RCUK Academic Fellowship in Oxford. She was appointed Associate Professor in 2013 and Professor in 2017. In 2021 she co-founded the spin-out HydRegen, aiming to decarbonise biocatalysis for chemical manufacturing. She is the University's Academic Champion for Women in Entrepreneurship. Her research interests include small molecule activation in biology, bio hydrogen, and biocatalysis for cleaner chemical manufacturing.

# Oxford Energy Network



# **ROBIN MORRIS**

#### Convenor, Oxford Energy Network

Robin's career started in materials research at the Johnson Matthey Technology Centre. Moving to a new technology venture, he led an international collaboration to develop integrated optics products, winning exports to Europe, Japan and USA. As a consultant he supported startup companies in lighting, energy storage, transport refrigeration and hydrogen storage. He worked with local authorities on fuel poverty mapping, thermal imaging and energy signatures. As co-founder of social enterprise Energy Local, Robin managed technical delivery of local energy pilots. Since 2019, he has been Henry Royce Institute research and engagement lead for electrochemical systems in the Department of Materials.



# ANNE L RYAN

#### Co-ordinator, Oxford Energy Network

Anne has a BA in Law and Spanish from Anglia Ruskin University, Cambridge where she specialised in Planning and Environmental Law. She was employed by the Environmental Law Foundation, London as Outreach Co-ordinator, leading the Advice and Referral Service, and to providing advice, stakeholder dialogues, workshops and seminars to local communities across the UK. She has been member of the Planning Inspectorates' Programme Officer Group delivering Local Plan Inquiries in East Anglia. Anne has been working in the Environmental Change Institute for the last 8 years, working first in the Climate, and Energy Group research, taking her current OE role in 2017.

# Delegates

Abate, Alessandro	Computer Science
Abdelaziz, Sara	Engineering Science
Abena Darkowaa Amankwa, Josephine	KNUST
Adams, Bethan	School of Geography and the Environment
Adcock, Thomas	Engineering Science
Adeleye, Tolulope	Engineering Science
Alotaiq, Abdullah	Engineering Science
Austen, Nichola	Oxford Martin School
Banares-Alcantara, Rene	Engineering Science
Barnes, Jacob	Energy group, ECI
Barzin, Samira	Mathematical Institute
Basu, Sumedha	University of Leeds
Bator, Julia	University of Oxford
Boardman, Brenda	Energy Group, ECI
Bobrova, Yekatherina	Energy Group, ECI CREDS
Bond, Kingsmill	Rocky Mountain Institute
Bonilla, Sebastian	Materials
Brand, Christian	Energy Group, ECI CREDS
Bratt, Harry	Low Carbon Hub
Bristow, Mark	University Estates
Brown, Mostyn	AFRY Management Consulting
Bruce, Peter	Materials
Bryce, Melanie	SSEN
Buckley, Eleanor	Energy Group, ECI Integrate
Budnitz, Hannah	Transport Studies Unit
Byrne, Byron	Engineering Science
Campbell, Siobhan	Department for Transport
Cashmore, Roger	Physics
Cattermull, John	Materials
Cesaro, Zachary	Engineering Science
Charbonnier, Flora	Engineering Science
Chen, Jun	Materials
Chopra, Amit	Said Business School
Chung, Natalie	DFI Retail Group
Cohen, Martin	Earth Science
Collett, Katherine	Engineering Science
Cosmidis, Julie	Earth Sciences
Darby, Sarah	Energy Group, ECI
Dave, Seema	Oxfordshire County Council
David, Bill	Inorganic Chemistry
Davis, Giles	Science and Technology Facilities Council
Dennis, Liam	MSc Energy Systems
Devlin, Alexandra	Engineering Science
Ding, Yifu	University of Oxford
Djukanovic, Nina	Linacre College

Downing, Clare	Energy Group, ECI CREDS
Du, Yufan	The Chinese University of Hong Kong
Eyre, Nick	Energy Group, ECI CREDS
Fahr, Patrick	Nuffield Department of Primary Care Health Science
Fallon, Maurice	Oxford Robotics Institute
Fawcett, Tina	Energy Group, ECI CREDS
Gilchrist, Andy	MPLS
Gross, Denis	Countryside Renewables Capital
Grunewald, Philipp	Oriel College
Guven, Muslum	Materials
Halloran, Claire	Engineering Science
Hampton, Samuel	Energy Group, ECI
Harris, Hannah	Energy Group, ECI CREDS
Henry, Grace	Blavatnik School of Government
Hopkins, Debbie	School of Geography and the Environment
House, Robert	Materials
Howey, David	Engineering Science
Hua, Weiqi	Engineering Science
Huang, Yongchao	Computer Science
Hulett, Kate	St Peter's College
Hull, Christopher	Engineering Science
Islam, Saiful	Materials
Jelley, Nicholas	Physics
Junfu, Bu	Materials
Junjie, Chang	School of Geography and the Environment
Khanna, Shefali	Imperial College London
Khanna, Vikaran	Physics
Khosla, Radhika	SSEE
Killip, Gavin	Energy Group, ECI CREDS
Kruglikova, Nina	School of Geography and the Environment
Kundi, Brayshna	School of Geography and the Environment
Leach, Felix	Engineering Science
Leonard, Alycia	Engineering Science
Lezaun, Javier	School of Anthropology
Liu, Yingqi	RBC Capital Markets
Lizana Moral, Jesus	Engineering Science
Llewellyn Smith, Chris	Physics
Loni, Sam	ECI - Said Business School
Malik, Ihsan	ISA Energy
Mangal, Jan	Gavin & Doherty Geo-solutions
Marion, Luke	Oxford Bus Company
Matsuda, Haruhiko	PW Ltd
Matsuda, Satoko	PW Ltd
Mcculloch, Malcolm	Engineering Science
Mihalache, Anca	Environmental Change Institute
Miranda, Nicole	Engineering Science
Mirza Baig, Aimon	Imperial college London
Snaith, Henry	Physics
Mon Oo, Ye	Victoria University of Wellington
Moorcroft, Hettie	School of Geography and the Environment
Morris, Robin	Oxford Energy Network

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Morstyn, Thomas Morwesi, Electione	University of Edinburgh
Moruzzi, Floriana Moros Todd	Chemistry
Mose, Tedd	Energy Group, ECI
Nair, Venugopal	Department of Zoology
Narvaez-Torres, Rene	ENGIE
Nellist, Peter	Materials
Nicholls, Rebecca	Materials
Nie, Binjian	Engineering Science
Nolden, Colin	Energy Group, ECI
Obersteiner, Michael	Environmental Change Institute
Palafox-Alcantar, Giovani	The Future of Cooling programme
Pantaleo, Antonio Marco	Imperial college london
Pettifor, Hazel	Energy Group, ECI Matariala
Pi, Liquan	Materials
Pinidiya, Nick	Saïd Business School
Renaldi, Renaldi	Cranfield University
Reza, Mohamed	Engineering Science
Rhys, John	Environmental Change Institute
Rimmer, Nick	Telegraph Materials
Roberts, Mike	UNSW Sydney
Robinson, Paul	Oxford City Council
Rouda, Jennifer	7Skyline, LLC
Ryan, Anne L	Oxford Energy Network, Energy Group, ECI
Hepburn, Cameron	Smith School of Enterprise and the Environment
Schwanen, Tim	Transport Studies Unit
Seger, Marcel	Technical University of Munich (TUM)
Sen, Anupama Okankan Manup	Smith School
Shankar, Varun	Engineering Science
Sharp, John	Cranfield University Meteriale
Song, Weixin	Materials
Spencer, Paul	Oxford City Council
Stecca Douek, Carolina	Said business school
Steier, Ludmilla	Chemistry Oxfordobiro County Council
Sudbury, Pete	Oxfordshire County Council Chamiatry
Sudmeier, Tim	Chemistry Imporial Callaga Landon
Sunny, Nixon Taylor, Martin	Imperial College London Oxford University Estatos Services
Taylor, Martin Thind, Puninda	Oxford University Estates Services
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