



Climate Co-Lab

Meeting Notes

Energising the Energy Transition

Chaired by Dr Martin Valenti,
Director for Net Zero at South of Scotland Enterprise

Wednesday 10 August 2022, 2.30–6pm. ARUP – 4th Floor, 10 George Street, Edinburgh.



This event was kindly hosted by Arup at their new Edinburgh office, which lives up to Arup's commitment to Net Zero by 2030. It's a modern building, with sustainable furniture; Arup saved 90 tonnes of carbon simply by having a central location reducing the need of staff to use cars to reach their offices.

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Key take-home messages from the discussion

These notes provide a general summary of the meeting. The discourse is an amalgamation of comments made by delegates and speakers and does not necessarily follow a chronological order. As the meeting was held under Chatham House Rule, no statements can be attributed to anyone in particular.

Introduction

- It is not acceptable for everyday people to bear the burden of the energy industry's failure to see the long-term picture – this is what we are seeing now with the energy crisis. However, through collaboration, we can use the energy transition to solve socioeconomic problems.
- Progress happened at COP26, but more can, and needs, to be done.
- In all instances, physics trumps politics, and we need to get back to the discussion of what's happening to the climate and how we can alleviate the harm being caused.
- Whatever your role, YOU have to be the person to make that change, it doesn't just happen.
- It is important to remember that we have gone through an energy transition before - this town [Edinburgh] used to be Auld Reekie. No coal smog now!

What do we need to do?

- UK energy demand is 2000TWH – 1700 oil and gas, 300 electricity with a goal of 1000TWH – 300 oil and gas, of which 200 Hydrogen; 700 electricity.
- By UK law we must double green or total??? energy production while shrinking oil use by $\frac{3}{4}$ by 2050; we must also grow more forests and eliminate high emission technology.
- The energy transition is a huge task but the key thing here is that it is profoundly positive for us to undertake this. And we can – maybe even before 2050 – with the right investment in the right infrastructure. If we don't make the transition, there will be a huge cost. And the payoff if we do it is huge.
- A transition requires a fundamental difference in energy market. One where price is flexible throughout the day, with local, regional and national level plans.

How are we going to do it?

- Emphasise widely the co-benefits of Net Zero – Net Zero doesn't work as a brand so we need to focus on the more immediate human benefits – cleaner cities, jobs, better public health...
- Climate Change Committee published a report last month on UK progress, the most positive areas were 1) Electric Vehicles and 2) Power sector, particularly renewables
- We need energy demand reduction of some sort, and local plans which recognise the nature of different places – population densities, housing stock, weather, natural renewable resources etc.
- Cultivate an appropriate regulatory framework – regulatory success looks like a model which allows us to deliver on time, and in the most economically sustainable way.
- It is key to act with a real sense of urgency, right now. However – making the wrong decisions right now may increase fuel poverty and damage the economy.
- In the late 1800s energy was primarily privatised, with costs being the equivalent of 16x the energy price cap today. There were over 600 energy providers – nationalisation made the energy system more manageable.
- Invest in infrastructure Traditionally, energy supply has been geographically centered around demand – e.g. coal plants near large settlements. Renewables are different as often located far from demand, e.g. offshore wind. This highlights the importance of a good network for transmission to get cheap electricity produced in Scotland to customers in England.

- The electricity network must be centrally controlled and locally planned with a single system operator to deliver improvements and innovation necessary to reach net zero. However, there is the risk that this centralised system becomes top-down: it must optimise what solutions work at a local level, considering for example urban/rural differences.
- Being able to decouple gas price from cost of renewables will be critical to energy transition, in terms of continued public support.
- Highlighting regional economic benefit – regions with renewables should be able to see the economic benefit. This may improve image of renewables and there is opportunity within regulatory reform to achieve that.

Managing our current dependency on fossil fuels

- Fossil fuel element is a stubborn 80% of global primary energy demand. If we remain on this trajectory we must invest more in adaptation. And we are not doing this. We are investing €20bn, whereas we need to invest €500bn to account for adaptation if we remain on our current trajectory.
- Is net-zero an achievable goal or a western delusion? The global south is not with us. Oil and gas technology is becoming established and profitable there; any renewables they create will be sold to other countries and O&G used there.
- However, this gives us more reason to refine our path toward net zero in the western world - to pull clean solutions into the mainstream.
- Oil and gas majors have been upping their low-carbon spend – BP are going to invest 50% of total capital into renewables by 2030. O&G have strong balance sheets; willing & required to invest in clean energy. There is a huge opportunity to tap into this, but companies [with funds to invest?] don't want to be associated with oil and gas.
- There is currently a disconnect in discussions about "solutions" to the energy crisis. The focus is on short term resilience, often done by increasing supply of locally produced fossil fuels, but missing the link to the need to be accelerating renewable solutions
- Many oil and gas companies are on the road to decarbonising production – but as for the oil and gas produced, that's still a resource which is very much used by all of us, for transport, energy and making materials. Oil and gas can't necessarily be blamed for our reliance on this, which needs to decrease.
- Investors want returns ASAP and clean tech is often not compatible with this goal. As such investors aren't so interested in sustainable solutions. This is the commercial reality that is currently pushing back on net zero action.
- More onus needs to be put on managers of institutional capital to understand what investors want. What legislation, change of public attitude do we need? Do we need a world that is not driven by ROI?
- O&G remains profitable due to export prices, set up by OPEC countries. It's a global market. Pricing could be something to discuss at COP27.
- O&G decision makers are not moving fast enough to move out of their core business because it is still financially lucrative. However, 3 degrees of warming is not a livable adaptation scenario. As an industry we need to accept the signs and transition.
- More research and development funding is needed – Once we have produced enough renewable energy, then we can say there is no space for oil and gas. However, to do this, traditional oil and gas companies must partner with energy companies to devise solutions with the capital at their disposal to do so.

What can be done?

- More partnerships between those working to develop and scale-up renewable solutions and traditional energy companies who have the capital to see these projects through.
- Apply some focus onto energy efficiency improvements, and how we address the carbon reduction challenges of our existing built environment.

- Investor returns remain the dominant force, so there is a need to shake-up the finance sector to ensure that the low-carbon solutions are the best financial choice as well as the obvious best choice for our planet. This could include:
- A process for assessing economic value over the long term, and the impacts of short-termism.
- Adapting regulatory frameworks to achieve progress

Speaker Bios

Chris Stark

Chris Stark is the Chief Executive of the UK Climate Change Committee (CCC), the independent authority on tackling climate change under the UK's Climate Change Act. Chris leads a team of analysts and specialists, offering expert insight into the challenges of reducing UK emissions and adapting to the changing climate.

Chris led the CCC's work to recommend a 'Net Zero' target for the UK – and has since directed detailed analysis and advice on the UK's path to carbon neutrality. He speaks regularly on the transition to a zero carbon economy and the need to confront climate change with urgency. Chris has wide experience in government. He has designed economic policy in Whitehall, including in HM Treasury and the former Department for Business, Innovation and Skills. He was previously Director of Energy and Climate Change in the Scottish Government, leading the development of the Scottish energy and climate strategies.

Martin Valenti

Dr Martin Valenti is the Director for Net Zero at South of Scotland Enterprise where he leads the economic and community development agency's efforts to help the region to transition to a Net Zero economy. For over 30 years Martin has worked in a variety of senior management roles shaping and delivering inclusive growth initiatives and directing major collaborative projects. He has successfully delivered high profile projects for the Scottish Government on climate change and sustainability.

Dr Valenti worked for SEPA for 17 years where he held a number of senior positions. He played an instrumental role in setting up Scotland's 2020 Climate Group and co-created the award winning 2050 Young Leaders Climate Group.

Martin is also on the Board of Edinburgh Science and was instrumental in the creation of the Climate Opportunity Ideas Factory, encouraging the team to hold the very first event with Christiana Figueres in April 2019. We are delighted to welcome Martin back to Chair this plenary meeting, where he will inspire insight from the delegates and ensure we conclude with meaningful ideas to enable us to move forward to a green economic future.

Clare Lavelle

Clare is a Director who leads Arup's North Energy and Advisory business and is a Non-Executive Director of Scottish Renewables.

She has extensive experience in the UK energy sector and has been central to the development of major energy infrastructure and innovation in Scotland and the UK. Clare's current focus is on the transition of energy systems and developing solutions that cut across industries to enable deep decarbonisation of heat, transport and electricity, with a particular focus on hydrogen and offshore wind.

She works closely with government and regulators to shape policy. Clare supported Scottish Government in establishing their hydrogen policy, through developing the evidence base that underpins the Hydrogen Policy Statement and its ambitious 5GW 2030 target. She also led a team supporting Crown Estates Scotland on the ScotWind leasing round

assessment of applications resulting in leasing of 25GW of offshore wind development. She supports the private sector on developing and delivering critical energy transition projects. This includes leading the design and development of SGN's H100 project in Levenmouth Fife. This world first demonstration of hydrogen production and distribution will supply 100% green hydrogen to circa 300 homes for domestic use.

Clare has won several awards including the Top 50 women engineers in sustainability, the Karen Burt Memorial Award, and she has an honorary doctorate from the University of Vaasa.

Valentina Kretschmar

Dr Valentina Kretschmar has over 25 years of experience in the energy sector. She is an expert on the energy transition of the oil and gas sector into clean energies. In her current role as Energy Transition Director at Capricorn Energy, she is responsible for the development of Capricorn's sustainability strategy aimed at delivering the company's net-zero target by 2040.

Valentina joined Capricorn in 2021, after 18 years at Wood Mackenzie, where she served as Vice President of Corporate Research, leading the development of Corporate New Energy Research. Previously, Valentina worked as a Petroleum Engineer with Edinburgh Petroleum Services Ltd and Research Fellow in the Energy Group at the University of Edinburgh. She is an Advisory Board Member at CauswayGT – a geothermal company. She also held a non-executive director role on the board of NHST Global Media (Norway).

Valentina has a BEng Honours Degree in Engineering from the University of Edinburgh, MSc in Advanced Mechanical Engineering from Imperial College, London, a PhD in Clean Coal Technology from the University of Edinburgh and an MBA (Finance) from Durham University. Valentina is a Chartered Engineer (C.Eng. MIMechE) and holds a Non-executive Director Diploma.

Delegates

Name	Surname	Job title	Organisation
Paul	Atkinson	Partner	Par Equity LLB
Adrian	Barnes	Head of Green Analytics	Green Investment Group
Gemma	Bone Dodds	Director of Insights & Policy	Scottish National Investment Bank
Alex	Borland	Environment & Climate Manager	Royal Bank of Scotland
Janet	Brown	Trustee	Edinburgh Science
Anna	Clark	Sustainability Strategy Coordinator	Heriot Watt University
Jon	Clipsham	Chief Commercial Officer	Protium
Susan	Daish	Director for Climate Response Growth	Jacobs
Gordon	Dewar	Chief Executive	Edinburgh Airport
Charlie	Drysdale	Project Development Manager	SSE Group
Diane	Emerson	UKIMEA Leader - Climate & Sustainability	Arup
Darren	Flynn	Regional Head of Scotland, Corporate & Institutional Banking	Lloyds Banking Group
Simon	Gage	CEO	Edinburgh Science
Hazel	Gulliver	Director of Engagement	Scottish Power
Eleanor	Harris	Environmental Manager	Galbraith
Ben	Hart	ESG Analyst	Baillie Gifford
Alan	Hendry	Director of Sustainability	Mott MacDonald

Charlie	Hogg	Head of Policy Team FM Policy & Delivery Unit	Scottish Government
Nigel	Holmes	CEO	Scottish Hydrogen & Fuel Cell Assoc.
Bill	Ireland	CEO	Logan Energy
Valentina	Kretzschmar	Energy Transition Director	Capricorn Energy
Clare	Lavelle	Director – Energy & Advisory Leader North	Arup
Kirsty	Lieberthal	Customer Strategy	M & G
Susie	Lind	Executive Director Nuclear Decommissioning	EDF Energy
Duncan	Macadie	Manager, Product Marketing	Cirrus Logic
Ross	Martin	Adviser on Regional Economies	ScotIncGrowth
Andy	McDonald	Former Head of Low Carbon Transition - Scottish Enterprise	
Mark	Neller	Director	Arup
Stefanie	O'Gorman	Director Sustainable Economics	Ramboll
Ash	Penley	Net Zero Project Manager	Sealand Projects
Dave	Reay	Executive Director	Edinburgh Climate Change Institute
David	Reid	Chief Executive	Fuel Change
Iain	Russell	Partner	Galbraith
Hannah	Schlesinger	Director of Development and Marketing	Edinburgh Science
Andrew	Scott	CEO	Orbital Marine
Stephen	Sheal	External Relationships Director	Net Zero Technology Centre
Gary	Smith	Chief Creative Officer	M & G
Chris	Stark	CEO	The CCC
Paul	Steen	Head of Region Scotland & Northern England	Vattenfall
Emily	Stone	Climate Business Development Manager	Edinburgh Science
Martin	Valenti	Director for Net Zero	South of Scotland Enterprise
Paul	Wheelhouse	Net Zero Lead (Energy Transition)	South of Scotland Enterprise
Barbara	Whiting	SHFCA Chair; Head of Stakeholder Engagemt.	SGN
Sian	Wilson	Head of Offshore Development	Crown Estate Scotland

Thanks

We are indebted to the organisations shown below. Their support enables us to connect organisations who would not normally sit around the same table, seed innovative ideas and catalyse a greener future for our planet.

To find out how your logo could appear here, please contact:

hannah.schlesinger@scifest.co.uk

PROGRAMME SUPPORTERS



Actual Investors

FUNDING PARTNERS



Appendix

(i) About Edinburgh Science

Edinburgh Science Foundation is an educational charity, founded in 1989, which operates Edinburgh Science's Education and Festival programmes. We are best known for organising Edinburgh's annual Science Festival – the world's first public celebration of science and technology and still one of Europe's largest – our science education outreach programmes, Generation Science and Careers Hive and our community engagement work.

Our mission is to inspire, encourage and challenge people of all ages and backgrounds to explore and understand the world around them. As leaders in our field of Science Communication, we work year-round to create and deliver dynamic hands-on workshops and exhibitions and inspirational shows, discussions, debates and performances that continually push the boundaries of public engagement with science. Communication and engagement are at the core of all our work and we strive to ensure that this is embedded in all aspects of our organisation.

Edinburgh Science also operates a large-scale commercial international programme of work under our Worldwide arm with any profit directed into our Foundation to enable charitable work. Edinburgh Science regularly presents events overseas and has been the Major Programming Partner of the annual Abu Dhabi Science Festival since 2011, helping to curate, produce and deliver the event. For international partners, the team at Edinburgh Science provide engaging content, curatorial advice on programming and business planning support, along with expert staff and training for local science communicators.

Edinburgh Science's UK and international projects reach a combined audience of over half a million people each year, in a normal year.

Climate Co-Lab Meetings

Edinburgh Science coordinates and runs Climate Co-Labs – a series of round table meetings for senior Scottish leaders to discuss ideas for action to enable Scottish enterprises to respond to the climate emergency. It was initiated in April 2019 when Edinburgh Science Festival awarded the Edinburgh Medal to Christiana Figueres, the Costa Rican Diplomat who was instrumental in bringing about the Paris Climate Agreement. We organised a round table on that day, with leaders of business, public sector, third sector and higher education present. They were challenged by Christiana to collaborate, to act, to not wait for anyone to give them permission and to use the Climate Opportunity that presented itself for positive change.

Christiana was coming back to Edinburgh in two months and asked to meet again for an update on what this group had decided to do. Two months later, Baillie Gifford hosted a larger group of senior leaders who presented a number of ideas for discussion in this forum, with Christina Figueres and Roseanna Cunningham, the then Cabinet Secretary for Environment, Climate Change and Land Reform. Many of the ideas have been picked up by attending businesses and organisations to make an impact, and the attendees have told us that this group is of immense value to them, due to the diverse invite list and the facilitated discussions.

The purpose of the meetings is to generate new ideas that are then acted upon by those present to achieve steps towards reduced carbon emissions and greater environmental sustainability.

Edinburgh Science is in an exceptional position to bring together cross-sectoral leaders to gather views to identify new ways to work collaboratively to unlock ideas and create opportunities. Climate Co-Labs provide a unique safe space for collaboration, resulting in major ideas, for example a national carbon reserve for offsetting which we know excited many organisations. With connections across industries and many sectors, and no agenda other than to share the science and to see a solution to the climate emergency, Edinburgh Science strongly believes that the time is right to harness the collective power of organisations and minds and to put Scotland at the forefront of this Climate Opportunity.