

# KEEPING MOMENTUM AFTER COP 28

PART OF THE EDINBURGH SCIENCE  
CLIMATE CO-LAB SERIES

MEETING REPORT

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# About Edinburgh Science Climate Co-Lab

The Climate Co-Lab is a series of round table events which bring together senior leaders and decision from across all sectors to tackle difficult questions relating to the climate emergency. These events spark collaboration, unlock potential solutions and drive change.

We began delivering these events in April 2019 after awarding the prestigious Edinburgh Medal to Christiana Figueres – the acclaimed Costa Rican Diplomat, instrumental in bringing about the Paris Climate Agreement. On her visit to Edinburgh, we organised a round table with leaders of business, public sector, third sector and higher education present. We were challenged by Christiana to collaborate, to act, to not wait for anyone to give them permission and to use the opportunity that presented itself for positive change. It is this optimistic ethos that has driven these events ever since.

Notes from all previous Climate Co-Lab events can be found at [edinburghscience.co.uk](https://edinburghscience.co.uk).



# Provocations

## RYAN MCLAUGHLIN | GREEN CHOICE: THE ROLE OF THE PUBLIC IN NET ZERO **Where we fit in**

I would like to start with some numbers: 421 parts per million (ppm) carbon dioxide, 0.8m sea level rise. Net zero, over £300bn investment since 2010, investment needs of £50–60bn per year by the end of the decade.

We – policy wonks, engineers and economists are fixated on the big challenges of delivering infrastructure, growing the economy. I've been using a phrase I heard at a conference recently, I think it was from Systemiq, who said that we are creating world 2.0.

We will see transformations to our economy, society and the way we live and work: new low carbon technologies, infrastructure and job opportunities; cleaner air, greener spaces and reduced flooding; and changes to everyday life such as in the way we travel, heat our homes and save our money. But where do we fit in?

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Ryan McLaughlin. Deputy Director, Net Zero Strategy. Department for Energy Security and Net Zero



We have an essential role in delivering net zero. The choices we make about what we buy and use will shape the transition. We will be the demand that creates the markets for products, we will be the people who elect the representatives and we will be the people who have to consent to changes around us

The average household produces 8.5 tonnes of CO2 each year, mostly from travelling, the energy used to create the products we buy and the food we eat and from heating our homes<sup>1</sup>

We are moving towards a net zero society, led by technological innovation. Yet almost half our policies require you and I to act. Other pathways, such as the Climate Change Committee's (CCC's) balanced pathway see an even greater role for behaviour change.

The way we talk about behaviour change is important, as the Prime Minister set out in September, we need to have a transparent approach to net zero or risk losing the public consent needed to deliver the transition.

This is why, in our Net Zero Strategy, we framed taking action at individual level as green choices – the act of choosing the more, or the most, sustainable option from a range of possibilities, such as using an electric vehicle instead of a petrol or diesel vehicle when it is time to change your family car, replacing an old gas boiler with a heat pump or switching to innovative green financial products.

The best way to do this is to go with the grain of existing behaviour and trends.

We recognise that supporting the public and businesses with green choices must address multiple barriers, e.g., cost, convenience, awareness and that everyone – government, industry, businesses and civil society – must work together to achieve net zero to gain the economic benefits and ensure the environment is in a state for future generations.

As well as that direct action, we have a key role to play in consenting to the changes around us. There will be rapid expansion of infrastructure projects that will require community acceptance. We will need a 60% rise in electricity capacity by 2035. This is in addition to needing new nuclear, energy from waste, interconnectors, storage, clean heat, grid reinforcement, a new smarter network and carbon capture

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<sup>1</sup> [https://hotorcool.org/wp-content/uploads/2021/10/Hot\\_or\\_Cool\\_1\\_5\\_lifestyles\\_FULL\\_REPORT\\_AND\\_ANNEX\\_B.pdf](https://hotorcool.org/wp-content/uploads/2021/10/Hot_or_Cool_1_5_lifestyles_FULL_REPORT_AND_ANNEX_B.pdf)

## What is the size of the prize?

The economic benefits of the transition are clear to see:

- **Economy:** McKinsey estimates a global market opportunity of £1 trillion for British businesses by 2030<sup>2</sup>
- **Jobs:** In Powering Up Britain, we set out that up to 480,000 jobs could be supported by Net Zero policies by 2030. The rapid development and deployment of net zero technologies and expansion of environmental sectors over the coming years will continue to drive workforce demand. There are substantial job opportunities arising from the green transition with UK employment in green jobs estimated at over 630,000 in 2022 – an increase of 20% since 2020
- **Co-benefits:** The CCC noted, in their Sixth Carbon Budget report, the improvements to health, air quality, efficient homes and wider environment from adoption of net zero policies

Embedding green choices will be crucial to maximising the benefits to individuals and the country. The Net Zero Foresight Report commissioned by Go Science examined four future scenarios for achieving net zero and found a 65% difference in 2050 energy demand between scenarios.

In scenarios where societal changes reduce energy demand, reliance on carbon removal technologies is reduced, less land is needed for infrastructure and health co-benefits are higher. Modelling from Energy Systems Catapult<sup>3</sup> showed that under all scenarios, green choices could reduce the cost and strengthen net zero delivery. So, if we get this right, it really is a win-win opportunity.

## How do we put on the consumer lens?

Let's start with the good news. 89% of the public are aware of the UK Government's Net Zero by 2050 goal; remaining stable since Winter 2021. Half say they knew at least a fair amount about net zero<sup>4</sup> and 64% of people agree that they have a responsibility to reduce their carbon emissions to help tackle climate change.

This is important as the transition to net zero makes several asks on each of us. Policy must account for this and examine the consumer journey across a range of sectors. How do we create an environment which supports a household opting to install a heat-pump, EV charger and purchase an EV within the same decade?

But the challenge is high. We have seen how quick a public backlash to policy can be (Germany farmer protests over plan to cut subsidies for diesel in farmyard vehicles, Gillet Jaunes – French protests linked to a fuel tax change or the Canadian experience in Alberta and Ontario repealing subnational climate policy)

Research by Stonehaven, commissioned by National Grid ESO, into the acceptability of network infrastructure found that whilst most people are instinctively supportive of a campaign to upgrade network infrastructure (74%) – even without a supportive narrative being used. That number of supporters decreases with proximity – the closer the proposals are to a person's community, the more likely they are to oppose development.

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2 [McKinsey Sustainability \(2021\), 'Opportunities for UK businesses in the net zero transition',  
<https://www.mckinsey.com/capabilities/sustainability/our-insights/opportunities-for-uk-businesses-in-the-net-zero-transition>](https://www.mckinsey.com/capabilities/sustainability/our-insights/opportunities-for-uk-businesses-in-the-net-zero-transition)

3 [Net Zero Societal Change Analysis, 2021](#)

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4 <https://www.gov.uk/government/statistics/desnz-public-attitudes-tracker-winter-2023>

## What are we doing about it?

In the Net Zero Strategy, we published six principles for supporting green choices these were drawn from a large evidence review of significant social transformations in the last 50 years, including telecoms, smoking ban, wearing seat-belts, drink-driving and shift to central heating:

1. Minimise the ask by sending clear regulatory signals
2. Make the green choice the easiest
3. Make the green choice affordable
4. Empower people and businesses to make their own choice
5. Motivate and build public acceptability for major changes
6. Present a clear vision for how we will get to net zero and what the role of people and business will be

Government are already acting:

Created the Net Zero Council, a new partnership to work with business and finance leaders to support the delivery of our net zero target

Launched an online advice tool that provides high-level trusted, impartial and tailored advice to consumers on how to improve home energy performance and information on retrofit recommendations

Run the It All Adds Up campaign with £18 million funding and targeted sister campaign to the consumer energy campaign has supported businesses through a period of record high energy prices.

Announced our intention to require recyclability labelling on packaging and will introduce this as part of new regulations on packaging and packaging waste.

And society is also making greener choices, for instance:

- Sales of new electric cars are continuing to grow ahead of the CCC's 2020 pathway<sup>5</sup>
- New figures show applications for the government heat pump grants are up by 39% compared to January 2023<sup>6</sup>

But there is still a long way to go...

## My provocation

My provocation today asks what actions we can take to strengthen work on green choices. Hopefully I've set out clearly why it is absolutely necessary to support the public to make green choices and to bring the public with us on this journey. If we get this right, we can chart a fair path to net zero and achieve the wider co-benefits the transition offers.

For the discussion I'd like to leave you with the Centre for Climate Change and Social Transformations<sup>7</sup> recommendations for building support for net zero policies and proposal:

- People must perceive net zero policies as fair. Fairness means different things to different people, related to trust and how we see our role in the world
- Everyday grievances should not be dismissed. What feels like small 'fires' can quickly engulf overall ambitions. Listening is essential and swift action is needed to amend policy or communications
- Care is needed not to stoke this new front in the 'culture war'. Communicators should understand when they may not be trusted and when wading into a heated debate may not help
- Public engagement is critical. This means trusted communications that resonate with people's values and aspirations, gives them hope and agency, and to feel it's normal to care about and act on climate

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5 [CCC Progress Report to Parliament 2023](#)

6 <https://www.gov.uk/government/news/demand-for-heat-pumps-surges-as-grant-application-increase-by-39>

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7 [Powell, D. & James, E. \(2023\) How can politicians avoid a net-zero backlash? The role of public engagement: a briefing for policy makers and communicators. CAST Briefing 20.](#)

## SUSIE LIND | WHAT'S THE CATCH?

Asides the longer-term cost savings, energy independence, improved health & wellbeing and the related job creation and economic growth – is this really an era defining opportunity or is there a catch?

Eight years ago, world leaders assembled in Paris for COP21 and agreed to the foundations of what would become the Paris Agreement and a long-term commitment to limit global temperature rise to well below 2°C. It was dubbed the North Star for the global economy – where financial risk was replaced with economic opportunity. It sparked a global movement to demand faster action on tackling climate change with governments falling over themselves to declare a climate emergency.

But are we still treating the threat to our home as an emergency? Have we gone far and fast enough to accelerate the transition away from fossil fuels? Can we still avert the predicted damage to our natural environment and that of future generations?

December's COP28 signalled the beginning of the end for the fossil fuel era – but isn't that what COP21 did eight years ago?

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Susie Lind, Managing Director UK, Bluefloat Energy | Renantis Partnership



In the UK, our net zero ambitions have already seen carbon emissions fall by nearly 50% since 1990, with our strong progress to date coming from the power and manufacturing sectors and the transition to renewable energy.

We now have the second largest offshore wind market in the world, with 14GW in operation and a pipeline of roughly 77GW across 80 projects as we work towards a 50GW by 2030 target as part of our energy security strategy. Now, with the advent of commercial scale floating offshore wind, we can not only minimise carbon emissions – but actually enhance our environment and ensure prosperity for all.

The opportunities from the mass deployment of floating offshore wind cannot be overstated. Investment in the UK's offshore wind supply chain could add £92billion of Gross Value Added (GVA) to the economy by 2040.

At the end of 2021, the number of employees working in UK offshore wind stood at just over 31,000 with around 30% of that figure in Scotland. It is estimated that by 2030, the industry could employ close to 100,000 people.

Once again, Scotland is taking centre stage, building on a rich heritage of innovation and engineering influence on the world, with an unparalleled opportunity to pioneer new floating offshore wind technology through ScotWind.

For our BlueFloat Energy & Renantis Partnership, we secured five seabed leases across ScotWind & Innovation and Targeted Oil & Gas (INTOG) with a total capacity of more than 3GW and a further two projects in development in the Celtic Sea. We are also exploring a fresh approach to community ownership of offshore wind projects, ensuring as many people as possible can benefit from the energy transition in Scotland.

We believe this work could create a blueprint, shaping the future of community ownership from floating offshore wind throughout the whole of Scotland and builds on Renantis' successful track record of deploying similar schemes via its onshore wind farms across Scotland.

Communities must be at the heart of our work to tackle climate and nature emergencies – only then will our net zero future be truly fair and sustainable. Our Bellrock and Broadshore projects could see more than £2.5bn invested in the Scottish economy, creating thousands of jobs throughout the construction period and sustaining long-term high paid jobs over the operational lifetime of the projects. The opportunity from large scale deployment of floating offshore wind signals Scotland as a place to do business and a country that prioritises collective wellbeing.

But what's the catch?

We will only win the prize if we deliver the projects. Any delay or uncertainty risks losing our market foothold to any other country with a coastline that's looking to replicate our success. There are still many barriers to overcome, through planning, grid connectivity, port enhancements, vessel shortages and the required infrastructure to support manufacturing.

Supply chain commitments from ScotWind projects can only be realised once projects have secured grid connections, are fully consented (with dischargeable conditions) and Financial Investment Decisions are then taken.

Scotland's transmission system was designed and built around coal, hydro and nuclear generator stations like Longannet, Cruachan and Hunterston which have all ceased operations in the last decade.

If we take one thing from The Winsor Report<sup>8</sup>, it's that we need to halve the time it takes to build new transmission infrastructure to connect close to 30GW of new floating offshore wind projects. We've seen good progress and lots of positives that shouldn't be overshadowed by delays.

Timely (and uncontested) consenting decisions and grid certainty are therefore key to secure investor confidence and in turn, maximise economic success.

Ms Mairi McAllan MSP, our Cabinet Secretary for Wellbeing Economy, Net Zero and Energy launched her vision for Scotland just a few weeks ago from the building next door to here and called it the era defining opportunity. Yesterday, I watched our First Minister open of the Floating Wind Innovation Centre (FLOWIC) site – the world's first ever test and demonstrator site for floating offshore wind in Aberdeen and in a short round table with developers, ports and supply chain our discussion really showed that we're already in pole position but we need to be totally committed to keep it that way by moving at pace.

Today, we see National Grid calling for swift and coordinated progress to invest £58bn to upgrade the UK's transmission capacity, without which the country's climate ambitions might be at risk.

Above all, we need to ensure that investment is brought forward to identify, design and deliver the network necessary to connect and transport low carbon power to consumers as early as possible. That certainty will signal Scotland as a place to do business – and we've seen this through international interest like Sumitomo's cable factory plans at the Port of Nigg and turbine manufacturers also waiting in the wings.

We must embrace this once in a generation opportunity to not only revolutionise Scotland's energy landscape but also to champion a flourishing well-being economy.

But are we at risk of going back on our word?

With plans for new gas-fired power plants to be built into the 2030s, potentially watering down our net zero targets and last year's petrol and diesel car sales ban pushed back to 2035. Are we at risk of missing the greatest opportunity of our time?

Offshore Wind is still one of the cheapest, low carbon technologies that can be deployed at scale. It's a sustainable solution in the truest sense, that will drive enhancement in the environment and deliver economic prosperity for future generations.

Recent polling suggests that public support for renewable energy is at a record high, with 85% supporting offshore wind<sup>8</sup>. This coincides with continued heightened concerns around the impacts of climate change.

So how do we leverage that groundswell of public support and maintain momentum on the climate emergency and the need to safeguard our energy security going forward?

There is no shortage of investment, no shortage of projects and no shortage of ambition.

However, the one thing we are short of is time. Can we achieve sustainable growth and increased productivity in Scotland, increase living standards, enable new value to be created in the economy and protect the planet? All at the same time!!?

Absolutely!

But let's not just build turbines; let's build a brighter, more prosperous future for all.

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<sup>8</sup> <https://www.gov.uk/government/publications/accelerating-electricity-transmission-network-deployment-electricity-network-commissioners-recommendations>

But do you see a catch?

- What role can your business play in advocating for supportive policies that will accelerate the transition to a cleaner economy, whilst balancing the needs of various stakeholders, including consumers, investors and the environment?
- In what ways can your business leverage the energy transition as an opportunity for innovation and market differentiation, exploring new revenue streams and business models that prioritise sustainability whilst driving profitability?
- And what more can you do to collaborate across industries to ensure a just transition for everyone while simultaneously capitalizing on the opportunities presented by the shift towards a sustainable energy future?



# GEMMA JONES | WALKING THE TIGHTROPE

## THE COMPLEXITIES OF PEOPLE, PURPOSE AND PLANET

My provocation is about bringing it back down to that individual person level because when we talk about the consumer or person on the street and how we bring them on this journey we have to understand that where they're coming from is a very different place. Rarely is this on their minds as a daily ask, in their discussions or on their to-do list.

Consumers, customers, policy makers, industry workers, government officials, colleagues, investors, actors... are the terms that I hear in all of these discussions and I always ask myself, when did we stop being people?

I ask that because in no arena is it more vital that we lean into our instincts simply as people as it is in sustainability. We feel climate change more than we understand it across society. It is, in its broadest sense, often both significantly complicated and common sense.

You can't use more than exists and at the moment we're using natural resources at a rate that we just can't sustain. That's logic.

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Image Caption Gemma Jones. Director, Enterprises Sustainability. PwC



You only need to learn a little to know that to be true as an end consumer. We need to frame it in logic as well as science. But calling ourselves something other than people I believe desensitises us from our responsibility and can blinker us from the obvious at times. I think that can be dangerous.

We need to focus sometimes less on the enormity of the big numbers, to the points we've made here today. It is overwhelming. How do we begin to tackle that? How can we think about the importance of consistent, everyday informed choices for the masses?

Every waterfall starts with a drop of rain, to use a cliché. As we all point fingers at whose problem it is to fix, I think we've lost sight of the answer – and that answer is people. I appreciate I'm being very simplistic in this but I do fundamentally believe it is about that.

Those with the ability to shape infrastructure, policy and law – whether it's government or business etc. must do more and be braver in doing so. But, as we've heard already through this discussion, that does rely on the consent and the informed choices of the consumer. Whether that's government or business – what you'll buy, what you'll advocate and what you'll accept in your own backyard.

In a world where we have more information than we've ever had before, I think the casualty has been insight. It's so overwhelming and plentiful, we've lost sight of the wood for the trees.

For me, the truth is, it's all of us. Individually and collectively but more importantly consistently. It feels as though we swing back and forth often in this debate, wasting energy and time. We are the solution, regardless of our occupation. Our collaborative power centres on our willingness to really learn from each other and act. That gives me tremendous cause for hope because I think that people, when confronted with two choices and we take out the financial price or we make it comparable, will make the better one. Because they want to.

Business, including financial services, lives somewhere between the minimum that society, the regulator, legislation and their stakeholders expect and the maximum that their customers will pay. Sustainability lives somewhere inside that in a very practical sense of 'how do you balance this?' as a business.

In a world where inequalities are deepening, it's easy to see why this feels like a luxury that only the rich can afford. Creating even more division in an already divisive world. But that's not true and we know that that's not true, so like we've heard today, this is also a huge opportunity to reshape and lead the world on a just transition.

Of course, if the 'bad' activity pays your wages and it's what sustains your livelihood you're going to be nervous about change. We have to step into that debate and really shape and paint a vision of the future that people can understand in their own community.

The transition will require new skills, new jobs and create new prosperity. It's not a like-for-like comparison but if we equate this to an example like mining – we need to demonstrate how the transition will replace the jobs that will be lost, or what the alternatives will be and learn from the past.

For Scotland, we have a genuine opportunity to understand that, mobilise it and export it.

From my point of view, how can we change the case to talk about Scotland's waters and winds in the same way we talk about Scotland's oil, but recognise the role that oil plays in part of that transition as well?

We need to collaborate across government, businesses and customers and my provocation is that the easiest way to do that is to learn, talk to and challenge each other as people. We've talked a lot today about who people trust in this debate.

How often is it that the people in this room have conversations with their neighbours, their friends and their family about the choices that they might need to take. That's a hard conversation. I have it a lot. It can be awkward to avoid people feeling that you're trying to guilt them but I do think it's important because we can share direct experiences and they'll trust that perspective.

Learning as people first and professionals second will also help us to deal with some of the complex trade-offs that we need to do or need to make. Fundamentally, we are going to have to unpick the last few decades and confront some uncomfortable truths.

Purpose is often used to describe sustainability. In my mind they are not the same thing, there are a lot of parallels and in the personal context often it is a lot about values-driven behaviour, but in a business context it's not the same.

The traditional purpose of finance is to make, save or lend capital. If we're to change we need to understand that element of fiduciary duty and challenge it. It's evolving but to scale it needs both customer consent and customer push in a visionary framework.

Arguably the climate crisis is the biggest market failure of all time, which leads to the question, if we are focusing so much on finance being the answer – are we trying to fix the problem with the problem itself?

We do not price the externalities of climate change and that means that those who cause it rarely pay the price. While this is understood in the financial services market, who are collectively calling for more policy intervention to correct it, I fear consumers are broadly in the dark.

For its part finance has done a remarkable job in trying to upscale itself in recent years. It has employed incredibly bright, talented scientists to help steer the ship. Invested in people, resources and strategies to ensure that it can progress ambitions. It recognises both the need for change and that that change has to be the right change.

To scale, it now needs policy makers to implement stronger incentives – policy and taxation to tighten the tightrope. It needs customers to accept more trade-offs and the market to accept fewer short-term returns but have a better understanding of the opportunity. But all of this does need the consent of the people it serves – its customers.

Financial services have made ambitious net zero goals and while they recognise there must be some fluidity, I see no appetite to roll back on these. That means that they will need solutions to meet those goals.

While politics and people are becoming more local, capital remains global. It will find the solutions and policies that the communities support for infrastructure change and the money will go there. Which, particularly in Scotland, would be criminal. Where we have all the right ingredients, we will miss the opportunity of a lifetime to adapt for a new world and export that learning and those skills.

## So how do we make that case?

In a world where people have limited understanding of their finances already – a survey conducted by Standard Life showed that 75% of UK adults don't know how much money is in their pension pot<sup>9</sup>, previous studies have shown that nearly 2/3 of people are unaware their pension is invested in the stock market – getting people to engage in a conversation about what their money is doing in climate change is very, very hard.

A census report from the Office for National Statistics showed that there was £2.5tn invested in UK occupational pension schemes in the UK and over £50tn worldwide. By any measure that could make a good indent into the solutions we need. Pensions can provide the patient capital that's needed for long-term investment but in a world where patient capital is the answer, immediate returns are the thorn in the side.

Our constant need to not compromise on financial returns and continued growth has made this an untenable tightrope. I do not think we can swap one set of growth for another. We have to have some honest conversations about what we're not going to do anymore.

Much has been made of the fact that you can have commercial returns that are sustainable, in some cases that is true. But I also believe that we have to accept that we might also need to get a little bit more comfortable with a little less convenience in our lives.

<sup>9</sup> <https://www.standardlife.co.uk/about/press-releases/75-percent-of-uk-adults-dont-know-how-much-is-in-their-pension-pot>

How do we unwind commercialisation and convenience which often causes a lot of this complexity and understand and challenge ourselves on the uncomfortable truth? I get it. I live it. I have two small children, a full-time job and a husband who works full time as well. Ordering online and convenience food is part of daily life now. And when you try to make more sustainable choices, it is hard, it takes more time and it costs more money. How do we deal with that? How do we take that audience with us? How do we redefine value in a world where the world has never been richer in a financial sense but I think we're arguably poorer than we've ever been.

While consumption is increased nearly all surveys show us that we're not happier. Inequalities have grown, anxiety has risen and we're often unhealthier despite brilliant advancements in medicine.

My provocation, at the end of the day, is how do we incorporate a new measurement of cost? Defining it only in financial terms is not working.

However, based on our discussion today I'd like to change my question for you. Which is, how often are you sharing what you know with your family and friends? How often do we step into that uncomfortable conversation because those coffee sessions in your own front room are the ones that can be the most powerful, increasing knowledge and expectations. Resulting in more people holding governments and financial services companies to account about what they're doing with their money.



# Discussion

## Effective Communication and Reaching the Public

- Bring it back to a core push, what people want. They aspire to have a good life, comfortable house, to not worry if they can afford to feed the family, to be able to enjoy their local environment. We've got this green goal, we've got this climate change thing to challenge but it has to be communicated in a way that the aspiration is a better future. That vision of prosperity, safety and better community must be brought out, not some technical hurdle like "can I fit a heat pump?". If you immediately bring in all the steps you've got to do you're holding things up – you've got to bring in a bigger view of how we can make this place better.
- Nobody in business would want to go back to the Victorian era of steam power and child labour. It's just the idea of a clean future, a better future and it's just going to involve these cleaner technologies and it's going to be better. We get stuck in the weeds sometimes.
- We need to do this through positive story telling rather than a challenge. A big part of this is arts and culture. This is a hugely important part of us as people and as individuals, what motivates you more? Yes, the people you know but you can probably all point to something – a book, a movie, a celebrity – that has done something and it has power behind it. I think sometimes that's overlooked. It doesn't mean that that's the solution but it is an important part of how you bring all aspects of society. Sometimes you have to go back to the point that as a person, you're not interested in the technical challenge of it but being inspired and humans go back to stories. Hearing other people's stories from around the world is a massive motivation. What can Scotland, or your organisation, bring to that story?
- I heard a panel with indigenous speakers talking about the imagery, very visceral imagery, of how their land is being destroyed and plays reimagining The Jungle Book and for a mass audience these things are really powerful to really take people on that journey and also to paint a more positive picture rather than the traditional doomsday hurricanes etc.
- We have to step away from talking about climate as an 'issue', we talk about a 'green job' – in the future all jobs will be green. We talk about a 'climate issue' now or 'decarbonisation' or 'renewable' – it just has to become normal. We have to get away from thinking green is one thing – green is everything. At some point we have to start losing the label.
- There is a lot of research about spill-over effect and questionable research about how one positive action can lead to another – half of the studies say it's reasonable and half say it's noise. What you do see is negative spill-over effects. If somebody's had a bad experience in one area that makes them less likely to try it somewhere else. To incentivise people, think about the consumer and the consumer journey first. It's easy to talk about demand shifting and load shifting but if it's a smart metre and my nest thermostat solving all of that for me, happy days – if I have to act on it then it's maybe less likely to happen.
- Climate change fatigue is going to come in. It's telling all these people what you can't do and how you must stop this and reuse that and it's just too much. What we need to do is learn how to do things differently. It all goes back to our dependence on oil. Oil is incredible, it's one of the most amazing things man has manipulated. We can make cleaning products, healthcare equipment, pharmaceuticals, there would be no covid vaccine. Oil is amazing and unless we can learn to do the same things different we will continue to use oil. People aren't going to instantly change their lives. If my wife got sick or my son got sick – I want them treated. Your instant coffee? Your mobile phone screen – everything you do it all comes from oil and there's plenty of carbon that exists above the ground. There is loads of carbon above ground, we don't need to dig up the stuff below. But until we figure out how to use the carbon that's above the ground we will continue to dig it up and that's a fact and that's a problem
- On housing and retrofitting it's a big challenge because people are not as rational as businesses. What you see with s-curve deployment in business is that if one company makes a move and makes things more efficient other companies have to come along or face their market share eroding. With individuals we don't behave like economic rational actors, we need to put more behavioural science and evidence into our policy making to account for that.
- This shouldn't be political at all. One of the great values that we've seen in the UK is that there has been political consensus and that's meant that the UK government is able to make the Climate Change Act and to have a long-term target, a pathway and monitoring. They can use the full repertoire of government action, regulation as well as tax as well as spend to try to deliver net zero which is a much more holistic and sensible way to do it. It's important to maintain this political acceptability so that it remains important and something that electorate wants to happen, it shouldn't become political with dividing lines

## Innovation

- A small investment in innovation can lead to great things, when we hear that there is a wall of cash in finance waiting for somewhere to go, I don't believe it because there is so much out there to be invested in.
- I'm currently working around airline fuel and a key problem that they have is getting investment and they're a big company that we probably all use. One of the reasons the investors don't put big funds into them is that the quality of data that they're able to gather at the moment isn't sufficient for the investors to take the risk. It's interesting when you talk about small projects – £30k, £100k – but when the big money comes to the table, £30m, they're nervous about their return on investment (ROI). Somewhere we've gone wrong with the expectation on returns.
- Whilst we absolutely do need to be investing in innovation, technology and new materials, we must not forget to invest in nature-based solutions. Nature is a powerful force for bringing people and communities together.
- There's an element of us vs. them vs. them inside the technology world but it should be all of us. There isn't one type of technology that's going to save us. We need to all work together.
- There's a big funding gap in our innovation landscape, we can fund some of those early ideas and industry can pick up those early ideas. But I've heard it mentioned many times – the valley of death – what are we going to do about that? It's a real issue in Scotland. We need to be accelerating these novel ideas coming out of universities. How do we get those ideas accelerated up because there's no funding there.
- We are one of those companies at risk of the valley of death working in both the UK and in Denmark. I've found is that the UK loves an intellectual and academic debate about how 2050 will work and academic system's level modelling. In Denmark it is so pragmatic they say "let's give this village this district heating system and whilst we're there install this form of carbon capture – will it work? We'll work that out". For a small business where the innovation is done and it's now about scaling up – Denmark is better because we can work on little pragmatic stuff that doesn't get held up by national systems level modelling. That's a very frustrating part of the UK.
- When incentivising rapid innovation and adaption of new products, a big communications campaign won't solve it. What are we trying to ask people to do? When we think about the world in 2050, people will be making thousands of individual choices every day

and every week that are slightly different to what they do now. They'll be making some choices every couple of years that cost a reasonable amount of money e.g., a new car. They'll be doing some choices once or twice in their lifetime e.g., renovating their home. They'll be doing those choices at different points in their lives so you need to work out where those trigger points are, when is the plasticity of choice for individuals and how do you target that?

- How many vaccines did we make for covid, did we just put all of the money into one? No, we didn't, we threw money at it right left and centre it came good, saved the world. We've got to the same thing here, throw money at technologies and some will fail for sure, but there are plenty of better ideas than just mine out there and they need a change to come to technology and we can do it.

## Finance and Investment

- This goes back to the complexity of purpose and profit. Fundamentally, when you give your money over to a financial manager you are expecting a financial return. We need to redefine what that means. If you're reinvesting a pot of money you have to have a reasonable view.
- I am personally invested in climate funds, they are losing money at the minute but I'm OK with that, I know I can wait and I know I don't need that return next week, next month, next year, next five years. Most people, when they look at their pensions or their investments and the money is going down they panic. How do we take customers who don't even know how much money is in their pension on that journey?
- It's easy to say but ultimately we need to find a way where purpose and profit coexist. We need to find a way where we can share business objectives and potentially swap them so that ultimately we can all make money and make the right decision.
- Yes, finance can be a solution, of course it can, but only if we redirect that intelligence and energy and put it back into that sense of purpose. I think there are a lot of people in finance who are putting their hands up and saying "We need more policy intervention here. This is not working out the way it ought to". Some elements of our financial systems e.g., hedge funds and expectations on return on investment are fundamentally broken and we need to redefine what value really looks like in our society.

## Business and the Individual

- It's like nobody really knows what their job is. We need to regather this information and understand whose role is which. There is that business environment with an element of competitiveness. I'm not worried about the world imploding, I worry about the sort of world that we're creating. The hope in this room is that we're all the right people, how do we galvanise that and find out whose role is whose?
- As individuals it is up to us to ask questions but we vote for people because we expect them to know more and think more long term than us and we buy stuff from businesses because we expect them to think more about the long-term impact of their product and that is a responsibility.
- There is a phrase I heard that I loved which was 'being the CEO now is considered a prize rather than a responsibility'. Somehow as a society we've moved away from the CEO as a responsibility a little bit. Businesses do have the power to change things, my worry is that within companies there is a very small group who are championing that drive and they need help to help inform their broader base of colleagues. How do we create that momentum to encourage more promotion from that group. It's not a get out of jail free card, those big companies, those governments – they should be doing more.
- A common theme in many workplaces is 'You're the sustainability guy/ESG guy' whereas it should be that we're all the sustainability person or the ESG person. I'd love to know if anyone has got past that in their business. Of course there should be a head of, but everybody should be working on it.
- Can we really distinguish joe public from business? Ultimately a business is made up of a collection of people, it's all hearts and minds in the end. We have talked about decision-making at boardroom level, how much, or little, or that is based around the right choice for the planet.

## Climate Justice

- A lot of the time we get stuck in discussions around conflicts of interest around land use and so on. A lot of those debates are held in the terms of preferences and the best to come out of it is an agreement to differ and nothing happens. The common denominator behind a lot of what we've been discussing this afternoon is risk. Your preferences and my preferences lead to different choices on how we use the land and sea and natural resources. Associated with that there's either extractive processes going on for short-term profit over long-term costs or costs to someone else on the planet not near here and not near me.
- Thinking about these issues through the environmental justice lens of distribution of costs and benefits, participatory or procedural justice and who has a say in those decisions, might help to expose the fairness in the choices that we are currently making which is largely hidden through looking at aggregate costs and benefits and profit to a very small number of people. That could be one tool that we use to find our way through this maze.
- There aren't many examples of where that's happened it requires a much more participatory, democratic system rather than a centralised government making decisions on our behalf. Some more participatory processes and more sophisticated and nuanced debate that recognises complexity. Discussions like this can help to bring out issues and how costs and risks and benefits are unevenly distributed.
- Coming from a commercial bank perspective, we work with large corporates, SMEs which are a central part of the Scottish economy and also with consumers when we think about retail banking and all the levers that we can pull and then justice. Even when you think about what an SME can do versus what a big corporate can do and all the different sectors. I think you need to take that into account when considering the different levers that we can pull. Some sectors will have different technology that they can leverage today. It's great that the power sector is decarbonising and we've got all this stuff in renewables. We still haven't electrified heat, we haven't electrified transport. Trying to think through the different levers but through a justice lens might be one way of thinking about it.

# Closing Remarks

## Prof Susan Deacon MBE

Thank you for stepping into this space and accepting this challenge.

I am not going to attempt to summarise what has been covered today but I am going to ask you to do something. I want you to put pen to paper and write down just one thing that you are going to do more of, or that you are going to do differently next time as a consequence of the discussion that you have heard in here today. We're more likely to do it if we record it – just make a note for yourself.

One of the main takeaways for me, is that we are far from day zero on this net zero journey. Everyone in this room has experience and, to varying degrees, has been working in this area for some time.

This is not wholly uncharted terrain. Yes, the science and the technology develops over time but whilst this event references COP28, you could go back twenty years and then, there started to be some really shared, collective awareness of the scale of the challenge we face and the kind of things that needed to be done. I think it's really important, that what we all take from today is that learning about what can be done and what should be scaled up, enabled more and accelerated better requires action.

Think about how we become the change. That doesn't mean that you shouldn't engage in discussions whether it be with policy makers or whomsoever else but we have to get away from looking at others and saying 'what are those people over there going to be doing?' and instead start stepping up and looking at our own efforts as people, leaders and those with power and influence. How do we utilise our knowledge and time to build coalitions?

A few things to pick up on. The question of showcasing. It doesn't all have to be awards and gongs but shining a light on things that are working is part of building that really positive momentum. It shouldn't all be about fear, negativity or a sense of powerlessness. Linked to that there is something about trying to de-adversarialise from 'good guys' and 'bad guys'. Most people are actually trying to do something that's a wee bit better than we did it before. Kindness needs to come through in our discussions.

There is a power in stories and we've done a bit of that storytelling here today – I suggest using Edinburgh Science as a channel to tell some more. The arts and cultural sectors are so often at the forefront of huge shifts – Look at Mr Bates and the Post Office Scandal or Al Gore's Inconvenient Truth. People need to see dramatisations of things and different ways of exploring issues and that is absolutely something worth thinking about. Think about creative partnerships, we can be quite narrowly defined about who these collaborations will be between but sometimes it's really quirky and creative collaborations that can achieve miraculous things.



## Participants

First Name	Last Name	On Behalf Of	Role
Kirsty	Adams	Bluefloat Energy   Renantis Partnership	Head of Supply Chain
Kelly	Allan	Zero Waste Scotland	Head of Communications
Christabel	Barrowman	Edinburgh Science	Development Co-ordinator
Jessica	Briggs	Edinburgh Airport	Head of Sustainability
Dong-Thu	Caohuu	US Consulate Edinburgh	Political/Economic Officer
Fiona	Carr	Edinburgh Science	Senior Development Manager
Ben	Carter	Vattenfall	Account Director
Robin	Cathcart	Scottish Power	Senior Corporate Affairs Manager
Darragh	Clear	Tata Consultancy Services	Sustainability ESG Consulting Partner
Christina	Cody	Baillie Gifford	Climate Analyst
Susan	Deacon	The University of Edinburgh	Chair of Co-Lab
Mary	Dodd	Scottish National Investment Bank	Senior Associate for Insights and Research
Simon	Gage	Edinburgh Science	CEO and Director
Tom	Gillingham	Charlotte Street Partners	Partner
Jemima	Gordon-Duff	UK Government, Scotland Office	Deputy Director, International Climate Change Division, Directorate for Energy and Climate Change
Alan	Hendry	Mott MacDonald	Sustainability Director
Jason	Higgs	PwC	Partner
Jack	Hillmeyer	US Consulate Edinburgh	Consul General
Nigel	Holmes	Scottish Hydrogen and Fuel Cell Association	CEO
Gemma	Jones	PwC	Director of Sustainability
Gavin	Law	Wood Mackenzie Ltd	SVP Consulting
Paul	Lettice	Wright, Johnston & Mackenzie LLP	Director of Commercial Growth
Susie	Lind	Bluefloat Energy   Renantis Partnership	Managing Director - UK BlueFloat Energy Renantis Partnership
Stephanie	Maia	Edinburgh Science	Climate Engagement Manager
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Ryan	McLaughlin	UK Government, Scotland Office	Deputy Director, Net Zero Strategy; Department for Energy Security and Net Zero (ESNZ)
Clive	Mitchell	NatureScot	Head of Terrestrial Science
Michael	Napier	UK Government, Scotland Office	Team Leader – Net Zero, Energy and Infrastructure
Ailsa	Nicol	Orsted	Head of Public Affairs, Scotland
Raphael	Pfaeltzer	Carbon Capture Scotland	Chief Operating Officer & Director
Catherine	Preston	SEPA	Head of Innovation
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Andrew	Scott	Orbital Marine	CEO
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Andrew	Tyler	Stirling University	Scotland Hydro Nation Chair

# Thanks

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If you or your organisation would like to be involved in our upcoming climate work please contact Hannah Schlesinger, Director of Development and marketing:

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