

Event brief

For: **Thomas Thune Andersen**, Chairperson Ørsted,
Lloyd's Register Group, Lloyd's Foundation and
VKR Holding

From: **Morgan Fahey**, Events Manager

Event: **Hinton Lecture and Dinner**

Venue: Prince Philip House
3 Carlton House Terrace
London SW1Y 5DG

Event date: **Tuesday 9 May 2023**

Arrival time: Please arrive at **5.30-5.45pm**

Dress: Business attire

Guest no's: **Lecture – 150**
Dinner – 26

Rooms:

ERA: pre-Lecture refreshments
Al Qasimi: Hinton Lecture
National Grid: Drinks reception (invitation only)
David Sainsbury: Hinton Dinner (invitation only)

Contacts

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Event summary

The Hinton Lecture is the Academy's flagship annual lecture, which is named after the late Lord Hinton of Bankside OM KBE FRS FREng, the first President of the Academy. The Academy introduced an Annual Distinction Lecture in 1977 which was renamed the Hinton Lecture in his honour in 1981, following his retirement as President. The Academy's current five -year strategy sets an overarching goal to harness the power of engineering to build a sustainable society and an inclusive economy that works for everyone.

Objectives

- To position the Academy as an influential convener, and the home for progressive debate, discussion and inspiration on the challenges faced by engineering.
- To provide a platform for an eminent engineer to share their specialist knowledge and expertise with the public.
- To raise awareness of the relevance and role of engineering expertise in creating a sustainable society.
- To inspire and motivate the engineering community to be influential agents of change.

Audience

- Academy Fellows
- Academy partners, supporters and donors
- Policy makers
- Media and journalists
- Students, young people with an interest in engineering careers
- Awardees
- Public with an interest in engineering or the environment

Lecture

Registration to attend in-person is available to Fellows and the public.

Approximately 150 guests will attend in-person.

The event will be livestreamed online via Zoom, for those who have pre-registered.

Dinner

Following the Lecture, a private dinner will be hosted by the Academy CEO, Dr Hayaatun Sillem CBE, with the speaker as guests of honour. The guest list will be comprised of key Fellows, Awards Dinner sponsors, academics, early-career engineers, Academy supporters and funders.



Format

- Up to 150 delegates will be seated in theatre format.
- The camera will be placed at the back of the room on a staging block.
- The presentation will be conducted from stage, with keynote speaker and host seated in 'fireside' format during the Q&A.
- The Q&A session will begin with pre-prepared questions as noted in this brief and discussion with the host prior to the event.
- Slido will be used to collect questions from the in-person and online audiences. The questions will be monitored and then sent to the host via Google Sheet on a handheld device.
- The Lecture will be recorded, edited and shared with registrants and the public, in the 1-2 weeks following the event.

Outline event timings

Time	Programme	Location
5.45pm	Arrival and briefing Thomas Thune Andersen and Academy CEO	Al Qasimi
6.00pm	Registration opens	ERA
6.25pm	Delegates seated	Al Qasimi
6.30pm	Welcome address Dr Hayaatun Sillem CBE, Academy CEO Livestream begins	
6.33pm	Video: Ørsted / LRF	
6.36pm	2023 Hinton Lecture <i>The winds of change: engineering a greener future,</i> Thomas Thune Andersen	
7.00pm	Q&A session	
7.30pm	Networking reception Dinner guests and invited staff only	National Grid
8.00pm	Dinner: <ul style="list-style-type: none"> • 8.10pm – Starter • 8.30pm – Main course • 9.00pm – Dessert • 9.20pm – Tea, coffee and petit fours 	David Sainsbury
9.45pm	Event concludes	



Speaking notes

6.30pm – 6.33pm:

Dr Hayaatun Sillem

Welcome and introduction

[ØRSTED/LRF VIDEO PLAYS;

THOMAS TO MOVE TO STAGE, TO DELIVER KEYNOTE ADDRESS FROM LECTERN]

6.36pm – 7.00pm:

The winds of change: engineering a greener future.

The winds of change: engineering a greener future

Engineering plays a critical role in tackling society's global challenges, including the urgent drive to net zero. Through the story of Ørsted's pivot from black to green energy, this lecture highlights how a shared vision with social purpose, a shift in mindset and a systemic approach to engineering can create a more sustainable world.

Hello everyone.

I am going to start with a confession if I may, in such hallowed company. I'm not an engineer. So, the good news is that I'm not going to preach to you today about the role of engineering and engineers – you know that far better than me.

This evening I'm really looking forward to talking with you all about the opportunities we have collectively, based on engineering, to further raise our hopes and ambitions to create a more sustainable world.

I really appreciate the opportunity to be today with the Academy and would like to thank Professor Sir Jim McDonald FEng FRSE, President of the Royal Academy of Engineering for the invitation.

Before I take the opportunity to address today's topic in a more structured way, I would like to say that successful companies in today's world are those that are purpose driven. What does that mean?

The best way of addressing purpose is to take the single question:

What is a global challenge that you want to be part of solving?

What I would like to share with you today is a story of purpose - and a story of energy transformation. An energy transformation that was driven by a desire to tackle a global challenge affecting the world and a story in which engineers played an invaluable role.

I want you to think of this desire as something I call 'social purpose'. During this lecture, I'll also share another story of social purpose in a different setting - and consider how social purpose can be a North Star with which to attract the next generation of engineers. Like any good story, mine consists of three key things or points as it were.

Point one: The world needs engineers to look at big global challenges and think outside their specific area of expertise.

Engineers have the ability to change the world. Everyone in this room knows that.

Engineers take the science and the research, and they turn it into action that can help both people and the planet. They're the glue that holds everything together. But, in my experience, not everyone else out there in society knows this. There is work to do in shaping how the world views engineering and the role it can play in tackling some of the biggest issues we see today.

So, what are some of those issues?

The world we live in today is changing significantly. You might say 'but the world has always changed – it's ever-changing.' You would be right. But the most successful times in the development of humanity is when we have all identified, accepted and acknowledged these changes – and worked together to solve them.

There is a global agenda that, geopolitics aside, is focused on some things that I personally find very interesting – ESG, sustainability and the drive to net zero.

The drive to net zero is one of the biggest global challenges we face today as we fight to save our planet and make it a place for future generations to thrive.

Energy production and use are responsible for 73% of global greenhouse gas emissions. So, transforming the way we power our world is one of the most important things we can do to fight climate change.

Energy transformation sits at the heart of this. How can engineering and commercial teams work together to come up with solutions that aren't just environmentally sound but also make good business sense?

How do we bring these two disciplines together to create stable green businesses that are financially viable while tackling this big global challenge?

Creating a world that runs entirely on green energy



A case study in point is Ørsted - a renewable energy company based in Denmark, which I have been fortunate to be involved with since 2014. Ørsted is taking action to create a world that runs entirely on green energy.

For those of you who don't know, Ørsted used to be Danish Oil & Natural Gas – or DONG energy but changed name in 2017 to reflect its transformational shift from an energy company based on coal and oil to one primarily based on renewables.

You hear lots of stories in the press and in books on corporate success stories, and this one is, in all modesty, certainly a success story. In fact, it earned the number seven spot in the Harvard Business Review's top business transformations of the decade which was a proud moment for everyone involved.

What you won't read about is how a lot of that success came down to a leap of faith, and good timing. Or how we really needed a shift in engineering mindset to make it happen at all.

So, we had an energy company which was involved in a lot of different projects, from the very traditional oil and gas business through to electric cars. But we could see that coal and oil were quite literally burning platforms, and we wanted to see a more sustainable future, even if some of those more traditional aspects of the business were profitable and commercially attractive.

Of course, we knew that a more environmentally sustainable business still had to be a profitable business. You can focus on the future, but you also need an economic model that enables it to prosper.

This left us with a decision around our two biggest businesses, which was the oil and gas business which was of course significantly larger than the wind business at that stage. At that time, we were a small - medium size oil company. If we invested all the money we could possibly invest, and we had real success in the oil and gas business, we could move perhaps two or three spaces up the rankings but would still only be a small - medium sized business.

Or we could use the same amount of money and put it into wind where we could potentially be a major player.

Challenge of theoretical acceptance

The big challenge was, however, that the wind market was not proven and the cost of electricity was still far too high.

At the time, offshore wind was still relatively expensive compared to other new-build power generation technologies, as it was a fairly young technology – the first commercial-scale wind farm, Horns Rev 1, was only commissioned in 2001.

At board and management level, it was very aligned at the time. We all shared a belief that we could do something different, and all shared a purpose a social purpose - which was that we believed in a world that runs entirely on green energy.

We came at it from different angles. Only myself and maybe one other person in that boardroom had an oil and gas background so you can imagine there weren't many people who had romantic views on that industry!

And this enabled us to home in on a strategic direction at a macro level and ensured we had our eyes firmly on the need for a greener future.

Not everyone wanted to be on this journey. While we had some excellent oil and gas engineers at the time, we sadly lost some great people because they couldn't or wouldn't see a different future. A greener future.

So, we recruited others who were excited about renewables and could see what a more sustainable future could look like.

Wind farms are obviously very different. We had to turn the whole thing on its head and look at a more systematic way of approaching the issue in order to make it viable i.e., to think differently from traditional oil and gas engineering.

In transforming from black to green energy, we had to think about the whole supply chain as a system because we needed to get the cost of electricity down.

This meant designing something that was perhaps not 100% optimal for a particular seabed area but optimal across the chain. This included taking into account the size of the windmill, the kind of vessel needed to ship it, the length of time it would take to install. This meant that instead of maybe ending up with 100 windmills, we only got 94. But we got them out there faster, at a really competitive price and that was a game changer.

To maintain the governmental and societal support needed to bring down costs we decided to set a highly ambitious target to reduce levelised cost of electricity from offshore wind to EUR 100/MWh by 2020. This goal was set top down as a visionary statement rather than relying on bottom-up engineering calculations and was beyond what many thought was possible at the time. We significantly overperformed on this target, proving the viability of offshore wind.

And it was engineers from different disciplines who came up with the solution. They were experts in, e.g., Black Belt, lean systems methodologies and tools, so very much problem solvers. It was that change in mindset and approach that directly led to the success of the transition. It was the engineers who focused on designing the optimal supply chain system rather than just the end product.

So, we decided to sell the oil and gas business, which was still more than 50% of revenue and the most reputable part of the business. And focus on wind which at that time was only 15-20% of the cash flow. Risky, but the only way to ensure absolute focus.

Taking stakeholders with us on the journey

It was really important to take our stakeholders with us on the journey. This included communicating with policymakers, investors, employees, and customers regarding the risks and opportunities driving transformational change, and the need for a green business transformation.

We explained how the transformation created value for each of them, so they all had a stake in the process. When we came across challenges, we took the time to explain the reasons for change and listened to their views.

Supportive policy environment

Ørsted was able to undergo its green transformation, and learn these lessons along the way, partly due to the existence of a supportive policy environment. In particular, and very much so in the UK, there was sufficient visibility and certainty of offshore wind policy support and capacity volumes to allow investment and innovation at scale, which led to a virtuous cycle of technology maturity and reducing costs.

The success of such an 'ambition loop' is an additional policy learning that could be applied to other technologies and industries. Rarely can one company undertake a successful transformation alone.

Identify which partners and stakeholders outside your company you need to join forces with, in order to move forward and achieve your goals. For Ørsted, this included working with our supply chain to scale technology and bring down costs and with new investors to leverage capital, among others.

Removing the oil and gas business, in my opinion, was like crossing a stream. Each time you stood on a stepping stone, you picked it up and threw it away, so there was no way back to something which was more comfortable. You had to keep going.

We were all adamant that we wanted a world built on green energy. Having that very clear shared goal, or vision, or social purpose - and completely committing to it - meant that whatever came along, whatever the challenges were, we were going to find a way around them, through them, over them or under them.

Timing also played a huge role.

If we had done it maybe five years earlier, we wouldn't have had the success we have had. We now see that windfarms are a huge success, but we didn't know that at the time. Sometimes it is about luck – doing it when the market is ultimately ready for it. This could be seen as taking a gamble, but it works because you are hell bent on your purpose and luckily, it's one the world was ready for. Not many companies share that side of their success story!

The lesson is, once you've made the decision, move forward to pursue the vision. Once you have your blueprint and concept you should go all in and devote yourself, your capital, and your talent to mobilising behind the opportunity in order to scale and learn quickly.

Another way to look at it is, did we quit the oil and gas business? Quitting is a decision in its own right and can be a very difficult decision, but it's often regarded as defeatist, whereas it's actually sometimes quite sensible to quit. It frees you up to look at other things. That was certainly the case with Ørsted. Quitting became winning.

The company has increased earnings considerably, while reducing the use of coal in its power plants and building out new offshore wind farms. Since 2006, carbon emissions have been reduced by 86% in scope one and two. The focus continues to be on green growth based on offshore wind, biomass, green customer solutions and power-to-x.

Most sustainable energy company in the world

Today, Ørsted is the largest offshore wind company in the world and amongst the largest global renewable energy companies, with over 11 GW of capacity installed. It has been named the most sustainable energy company in the world for the past three years, and the most sustainable company overall in 2020.

Despite unusual market conditions last year, not least the very volatile energy prices and a substantial increase in inflation, the business achieved a record-high operating profit (EBIDTA).

The world is facing a climate crisis, and it is indisputable that a transition to a sustainable energy system is needed.

Of course, there is still more to do. Engineers are creating smart solutions, but I believe that by viewing engineering from a systems perspective, we can create even smarter solutions. So, we look at the macro, global issue first, the problem itself and then instead of looking at each individual element like what's needed from a mechanical engineer or an electrical engineer, we look at what we need from the system. We must look from the outside in rather than from the inside out.

What's next for the energy transition?

Taking positive steps to protect and restore nature

We need to think even greener. We need to come up solutions that don't just stop nature being harmed but that actively help to improve it. What I would like to frame 'nature positive engineering'. An area that both Ørsted and Lloyd's Register– through the work of Lloyd's Register Foundation - are actively involved in.

The way that some governments are looking at the energy transition right now is still very short term. They're looking at how do you bid to get a right to a seabed. We need to be looking longer term - how biodiversity has to be better. It's not a question of it being nature neutral. Biodiversity should be better after we've been there, not the same, or worse.

The term 'nature positive' is a call to governments, businesses and citizens to transform action on a global scale to halt and reverse the loss of our natural systems. We need to assess the impact that we have and take positive steps towards protecting and restoring nature.

Nature-based systems can provide biodiversity habitats and social benefits. If we look at infrastructure, it is not enough to landscape a building site for biodiversity as this doesn't compensate for the ecological losses of the land use, let alone its manufacturing.

In 2021, G7 leaders announced: "our world must not only become net zero, but also nature positive, for the benefit of both people and the planet." In the same year, in addition to the G7, 88 heads of state signed the Leaders Pledge for Nature to reverse loss of biodiversity by 2030. It is also a goal supported by 126 Nobel Laureates in the Our Planet, Our Future statement. More than 700 businesses have called for nations to reverse loss of nature as soon as possible.¹

Nature positive has become a movement. It makes business sense. The Future of Nature and Business report estimates that a nature positive economy can unlock \$10 trillion of business opportunities by transforming the three economic systems that are responsible for almost 80% of nature loss: energy, infrastructure and food.¹

Engineers can play a huge role in this. By talking about it, creating conversations around it, we can encourage others to also commit to nature positive engineering. Engineers are trusted. In a world full of fake news and conspiracy theories, we need facts and figures from trusted sources more than ever. But it's not good enough just to sit in the bubble of a specific discipline or area of expertise and go and do your thing. By working together, and getting out there and educating others, we can achieve greater things and have bigger impact.

So let me take you now to my second point, which is a little shorter than my first you may be reassured to hear!

Point two: Engineer your own social purpose

As you can tell, I'm extremely passionate about social purpose. I believe it really is the way of the future for businesses who are in a position to do it.

There is another movement – the B Corp movement- which aims to change our economic system towards collective action to address society's critical challenges and shift the behaviour, structure, and culture of capitalism. There are currently over 6000 Certified B Corporations in more than 80 countries and over 150 industries. What these businesses share is a desire – a purpose – to do things for the good of society in one way, shape or form.

I see a real opportunity for us to move towards a world where business is actually a force for good and plays a leading role in positively impacting and transforming the global economy into a more inclusive, equitable, and regenerative system.

By shifting our way of thinking, we can build businesses which contribute to the economic and social well-being of the communities in which they operate. Putting stakeholders at the heart of their business model rather than just shareholders.

Delivering social purpose to benefit communities

Lloyd's Register is a great example of a social purpose business – a centuries old maritime classification society which created the charity, Lloyd's Register Foundation just over 10 years ago to serve society and keep people safe. It is focused on profit with purpose. The Foundation's mission is to engineer a safer world and it works closely with the Academy on several programmes with global impact including 'Engineering Skills where They are Most Needed'.

This mission supports the delivery of skills and education programmes leading to the development of engineering skills capacity, enhanced safety standards, and infrastructure that remains safe and fit for purpose.

How does the Lloyd's Register Group/Lloyd's Register Foundation structure work to deliver its social purpose and benefit the communities in which it operates? Profits from the commercial business are given to the Foundation and these are used to fund interventions and accelerate technology to tackle safety risks around the world. The Foundation's sole stakeholder is society, and it has identified a number of global challenges that it wants to be part of solving, often through engineering.



The Foundation is active in 142 countries and has delivered 253 grants at a value of around £160m. It continues to identify and grant fund research, innovation, and intervention programmes to tackle the global safety challenges related to infrastructure, maritime and engineering. It has grown from just two people to over 30 and continues to grow today.

Its social purpose is its North Star, and many new recruits cite this purpose as one of the defining reasons they chose to work for Lloyd's Register.

Which leads me nicely onto my third and final point.

Point three: Use your purpose to increase diversity and attract the next generation of engineers

How can we and institutions like the Academy do even more to encourage greater diversity in engineering?

According to UNESCO, while the UK and many western nations have struggled to attract women into engineering, female representation is substantially higher in countries in eastern Europe and the global south. Just 12% of UK engineers are female. This compares with more than 50% in Oman and Malaysia and three in 10 in countries such as Costa Rica, Vietnam and Algeria.²

And it's not just gender diversity we need to consider. We need cognitive diversity. Different ways of thinking. New ways of thinking. How do we move away from people thinking of engineers as men in hard hats into people solving the world's problems and showcasing that more effectively? I'm convinced this will attract wider diversity into the sector and encourage more people in future generations to consider STEM careers.

From 2021 to 2022, Ørsted increased its number of female staff by 17%. Lloyd's Register has taken great strides in ensuring its recruitment processes celebrate and encourage diversity across the globe. They have multiple D&I colleague networks, focused on gender equality, LGBTQ+, ethnicity and disability as part of their Belonging strategy. And there are safe space meetings for colleagues to talk confidentially about challenges they may be facing in the workplace so they can share stories and learn from each other's experiences.

I see first-hand some great examples of progress such as these.

According to a 2020 report 'Wind energy: A gender perspective' released by IRENA and Women in Wind, around 21% of the global wind energy workforce is women. Fourteen percent are occupied in a STEM function. STEM-related positions seem to have a relatively low female participation compared to other positions e.g., administration at 35%. We all have an opportunity to do more to



encourage more women into our industries in STEM related roles. There is still much work to do.

Can we use social purpose to encourage diversity?

Yes, I think we can.

A recent EY report states that 83% of Gen Z believe it is very or extremely important to spend time on things that will be helpful in their future. Over half – 55% are worried or extremely worried about the environment and climate change. Almost all – 97% - would like to do more to protect the environment.

The same report shows that this generation gravitates to brands that share their values, while quickly dismissing those that don't. They prioritise finding fulfilling careers where they are valued and can have impact, versus making a lot of money. Their employment loyalty will be tested unless a company aligns with their personal values and makes them feel as if they have opportunities to grow and contribute.

To be successful at this, your organisation must be genuine about its purpose. This isn't about greenwashing. ESG must be measured accurately and consistently. Gen Z can sniff out inauthenticity with ease. They won't overtly demand trust and transparency, but they will silently block you (literally and figuratively) from their lives and will be quick to call out wrongful actions. Trust will only be earned through complete transparency.

Ultimately, young people want the chance to explore their skills and strengths and work for a like-minded organisation that will help them play to their strengths rather than being shunted into a system that forces them into boxes – and for what?

My challenge to us all is how can we help design a better way of working that supports people to use their skills and talents more effectively? How can we better demonstrate that as businesses, we have a social purpose to tackle a global issue – and that engineering is critical in doing that?

Ultimately, how can we work together to create the kind of organisations that young people want to work for, and be part of a force for good?

Your challenge? Find *your* purpose.

My challenge to us all in the room and online is: Find your purpose. Tackle an issue. Put engineering at the heart of that solution. Tell everyone about it. And attract a more diverse workforce by doing so.

If we can do this, we can engineer a brilliant future – a safer future – and a greener future – for everyone. A future in which the world will not just survive but thrive.

Thank you.

**[TAKE SEAT IN ARMCHAIR STAGE LEFT, furthest from the lectern
Hayaatun to return to stage and take armchair stage right]**

7.00pm – 7.25pm
Q&A session

**[Hayaatun to begin the session by asking some pre-prepared questions.
Audience questions will be filtered by the Academy team and sent to
Hayaatun via Google Sheet on stage.]**

Pre-prepared Q&As for Thomas Thune Andersen

Ørsted

Q: In February Ørsted announced achieving a record-high operating profit for 2022 in a year with unusual market conditions, highly volatile energy prices and a substantial increase in inflation. What are the wider lessons for the energy sector in operating a diverse portfolio of onshore wind, solar PV, combined heat and power plants plus gas?

Q: The North Sea is fuelling a new green economy and it's estimated that some wind turbine sites are generating the same amount of power as a large nuclear power station. Can we capture and use all this energy effectively, even in severe weather?

Q: In March Ørsted became the first energy company to join the Global Offshore Wind Alliance, which aims to create a global community of action. How can the sector accelerate development?

Nature positive engineering

Q: Many plant and animal species are under threat of extinction and you made the case for nature positive engineering – can you share some examples of successful projects in action?

Q: What are the barriers to nature positive engineering and how can these be overcome?

Lloyd's Register Foundation

Q: How does the relationship between Lloyd's Register and its charitable foundation work?

Q: What advice would you give to other organisations wanting to pursue a profit with purpose business model?

Skills and Diversity

Q: Discussions about and actions to improve diversity often focus on gender or ethnic diversity. But you talk about cognitive diversity. Can you say more about where you have seen cognitive diversity (neurodiversity) really being embraced,



Royal Academy of Engineering

and how organisations might learn from that to improve their own inclusion practices?

Q: You've highlighted the importance of inspiring the next generation of engineers. The world of work – and engineering - is changing rapidly. What new skills and capabilities will the engineers of the future need?

Leadership

Q: You've talked about the different factors that enabled the Ørsted to become one of the world's largest renewable energy companies. What would you say are the most important leadership skills in navigating a major transition?

7.25pm - 7.30pm

Dr Hayaatun Sillem CBE

Reflection on learnings from Lecture and closing remarks

Menu

Pre-Dinner drinks:

Prosecco: Veuve Valmante Brut NV (white sparkling wine)

Mocktail: English Garden (Elderflower cordial, cloudy apple juice, cucumber and basil)

Starter:

Marinated heirloom cherry & baby plum tomato, gazpacho gel, balsamic pearls, red pepper coulis, basil oil

(VE) (GF)

Main:

Poached Salmon, crispy salmon skin, Jersey Royal potato, pea puree, Vermouth sauce & samphire (GF)

Grilled polenta, stuffed plum tomato, braised banana shallot & basil emulsion (VE) (GF)

Dessert

White chocolate ganache, strawberry & champagne sorbet, raspberry sponge, toasted meringues (GF) (VE)

Coffee and petit fours

White wine: Fiano Lunate, Sicilia 2021 (VE)

Red wine: Beaujolais Villages 'Vignes de 1940' Jean – Michel Dupre 2021 (VE)

Table plan

Following the Lecture, there will be a short invitation only drinks reception, followed by a private dinner of **26** guests in the David Sainsbury Room. During the dinner, you will be seated at **Table 1**.

Below you will find a full guest list. Kindly be advised that this information may change, subject to any required logistical updates.

Dinner guests

Name	Company
Antonia Bonilla	Royal Academy of Engineering
Dr Ruth Boumphrey	Lloyd's Register Foundation
Lord John Browne of Madingley FREng FRS	Queen Elizabeth Prize for Engineering Foundation
Professor Byron Byrne FREng	University of Oxford
Dr Colin Church	Institute of Materials, Minerals and Mining
Dr Andrew Clark	Royal Academy of Engineering
Professor Joan Cordiner FREng FRSE	Sheffield University
Andrew Everett	ERA Foundation
Virginia Gardiner	LooWatt
Professor Susan Gourvenec FREng	University of Southampton
Henrik Hagemann	Puraffinity
Dr Simon Harrison	Mott MacDonald
Louka Travlos	Shell
Matthew Hobbs	bp
Dr James Kusena	MicrofluidX
Maria Long	Royal Academy of Engineering
Shane McHugh	Royal Academy of Engineering
Dervilla Mitchell CBE FREng	Arup
Sir John Parker GBE FREng	Formerly, Royal Academy of Engineering
Ben Pritchard	Thales
Dr Hayaatun Sillem CBE	Royal Academy of Engineering
Rachel Susan Skinner CBE FREng	WSP
Dr Tim Slingsby	Lloyd's Register Foundation
Thomas Thune Andersen	Ørsted, Lloyd's Register
Joanna Trigg	Royal Academy of Engineering
Dave Short FREng	BAE Systems



Royal Academy of Engineering

Table One (clockwise):

Dr Hayaatun Sillem, CEO, Royal Academy of Engineering

Thomas Thune Andersen, Ørsted and Lloyd's Register

Dervilla Mitchell CBE FREng, Arup

Lord John Browne of Madingley FREng FRS

Sir John Parker GBE FREng

Dr James Kusena, MicrofluidX (Shott Scale Up Accelerator Awardee)

Dr Ruth Boumphrey, Lloyd's Register Foundation



Table One biographies

Dr Ruth Bumphrey is Chief Executive at Lloyd's Register Foundation. She has a PhD in ecotoxicology and experience in environmental protection, marine science and technology, and has previously held roles as the Head of Earth Observation for the UK Space Agency and as Head of International at the Natural Environment Research Council (NERC). Ruth is Chair of the Welding Institute, is a Board member and trustee of the National Oceanography Centre, and previously was a Council member at Lancaster University. She sits on the National Preparedness Commission and the advisory board for the Journal of data-centric engineering. She is a founder and board member of EngineeringX.

Lord John Browne of Madingley FEng FRS is a former president of the Royal Academy of Engineering (2006 to July 2011) and former CEO of bp. He has served on the boards of Goldman Sachs, Intel and Daimler Benz. Since 2001, he has been a crossbench member of the House of Lords. Lord Browne is a former partner at Riverstone, where he was co-head of the world's largest renewable energy private equity fund. He received his undergraduate education at the University of Cambridge and later attended Stanford University.

Dr James Kusena is Vice President of Bioprocessing and Applications at MicrofluidX. James joined the Shott Scale Up Accelerator programme in 2022. He says, "There are several areas of expertise that I would like to develop including: creative and strategic thinking, project management and effective decision-making. These would allow me to enhance my leadership skills for both projects and partnerships." MicrofluidX is now looking to further develop its microfluidics-based cell and gene therapy process development and manufacturing platforms. The company will do this by disseminating a range of prototypes to partners in order to gain further external validation. It will also finalise the research and development of its chip and cassette designs, ready for manufacturing. This will permit MicrofluidX to grow its network and close its Series A funding.

Dervilla Mitchell CBE FEng, Deputy Chair of Arup Group. Dervilla is a Civil Engineer with experience in leading major programmes notably Terminal 5, Heathrow, Terminal 2, Dublin, Abu Dhabi Midfield Terminal as well as the Athletes Village, London 2012. Founded to be both humane and excellent, Arup collaborates with clients and partners using imagination, technology and rigour to shape a better world. Dervilla has been active in championing Diversity and Inclusion in the construction industry. Within Arup she created the women's network and helped develop initiatives to increase the female population within the business. As a member and Chair of the Royal Academy of Engineering, Diversity & Inclusion committee she has helped shape the discussion more widely across academia and industry, whilst at the same time personally engaging in schools and universities to encourage young people to consider a career in engineering.

Sir John Parker GBE FEng is a former President of the Academy and chairman of Laing O'Rourke and former chairman of Pennon Group, a director of Carnival Corporation & plc and lead non-executive director at the Cabinet Office. He has



been a director or chairman of numerous other public companies including Airbus, Anglo American plc, Babcock International, British Gas, DP World, Lattice Group, National Grid plc and Ombu Group. He is a patron at the Centre for Process Innovation and a Visiting Fellow of the University of Oxford.

Dr Hayaatun Sillem CBE is CEO of the Royal Academy of Engineering and Queen Elizabeth Prize for Engineering Foundation. She co-chairs with the Science Minister the government's Business Innovation Forum and co-chaired with Sir Lewis Hamilton his Commission on improving Black representation in motorsport. She is a trustee of various charities, member of the government's Levelling Up Advisory Council and Digital Skills Council and NXD at construction company Laing O'Rourke. She has been named as one of the 'Inspiring 50' women in tech in Europe and one of the most influential women in both UK engineering and UK tech.