CRITICAL CHALLENGE:

Sustainable technologies – what will get us to Net Zero, and is it getting funded?

Facilitator:
Maija Palmer, Editor of Global Corporate Venturing

Panellists:

Ben Burggraaf, CEO, Net Zero Wales

Jonathan Tudor, Investment Partner, Clean Growth Fund

Karen Brooks, Deputy Director, GW-SHIFT

Professor Matthew Davidson, Executive Director of iCAST (Innovation Centre for Applied Sustainable Technologies), University of Bath

The race to Net Zero is on, and sustainable technologies are at the forefront of this global challenge. But are these green innovations attracting the necessary investment to fuel their development and deployment?

This was the central question posed by **Maija Palmer, Editor of Global Corporate Venturing,** as she opened a lively roundtable discussion on the future of sustainable technology investment.

The UK has set ambitious targets to achieve Net Zero emissions by 2050, and the government has been actively promoting investment in sustainable technologies. However, with the global economy facing headwinds and investors becoming more risk-averse, whether sustainable technologies can attract the necessary capital is more pressing than ever.

The panellists shared their insights on which technologies are most likely to attract investment, the role of government incentives, and how universities can contribute to driving innovation in this critical sector.

What sustainable technologies are most likely to attract funding?

The panellists agreed that investors are increasingly drawn to sustainable technologies that demonstrate a clear path to commercialisation and offer tangible solutions to real-world problems.

Jonathan Tudor, Investment Partner at Clean Growth Fund, a £101m climate venture capital fund, emphasised the importance of a strong value proposition and a well-defined market need: "If you want money from us, start by saying something along the lines of, 'The world's suffering from a climate crisis, and in this particular sector where you focus, it's costing the Planet X million tonnes of carbon per annum,' and that's what I'm here to solve."

> *"Everything we invest in must be able to remove at least 100,000 tonnes of carbon dioxide equivalent per annum."*

Jonathan Tudor also pointed out that although the appetite for clean tech investment is substantial, start-ups often fail to present their value proposition effectively, potentially not gaining the funding they deserve.

Ben Burggraaf, CEO of Net Zero Industry Wales, an independent organisation providing guidance and support to Welsh industries on their transition to Net Zero, added that a deep market understanding is crucial for attracting investment: "Start-ups often have very good ideas but don't understand the market." He stressed the importance of thorough market research and clearly articulating the technology's competitive advantage.

Jonathan Tudor highlighted the increasing focus on circular economy models and material recovery as areas of significant opportunity: "If you can decarbonise steel production, it's megatons of carbon savings per factory."

Ben Burggraaf raised the potential for offshore wind and renewable energy integration to drive industrial decarbonisation, particularly in heavy industries such as steel and petrochemicals.

"We need to unlock £30bn of investment to decarbonise in South Wales alone," he revealed. "This would create new industries, secure thousands of jobs, and reduce Wales' total carbon dioxide emissions by 40% by 2040."

However, he cautioned that achieving these goals will require substantial infrastructure investment and policy support. "If we're not careful, we get overwhelmed, and then we can't deliver anything," Ben Burggraaf warned.

What are the biggest challenges in funding sustainable technologies?

A central challenge is the level of risk associated with funding sustainable technologies. Jonathan Tudor recognised that the level of funding needed is a significant factor, but he predicts that it is going to become more manageable: "Sustainable technologies are capital-intensive, but one of the interesting things is that in the future they'll be less and less capital intensive as digitalisation and distributed manufacturing comes online."

Jonathan Tudor also pointed out that the expertise required to evaluate sustainable technologies can hinder investors: "It's a different set of expertise. If you're a software investor, you've got to understand coding, computer engineering, project management, and the consumer or business segment. Regarding climate, it's every single vertical. So, you've got to understand agriculture, biotech, materials, polymers, chemistry...every single segment, and that will not exist in the fund."

Another challenge is the long development cycles and the need for patient capital. **Matthew Davidson, Executive Director of the Innovation Centre for Applied Sustainable Technologies (iCAST) at the University of Bath,** emphasised the importance of reducing the risk of new technologies to attract investment:

> *"iCAST now has a cluster of about 125 clean tech companies. Our model brings academics, industry, and investors together to deliver projects, feasibility studies, and proof of principle for our cluster companies. The fundamental aim is to de-risk the investments to help bridge the gap between the scientific concept and the technology becoming a reality."*

The discussion turned to the hurdles that start-ups face in securing funding. Professor Davidson stressed the importance of market understanding: "Many founders have excellent technical solutions but lack the commercial awareness to position themselves effectively."

Ben Burggraaf echoed this sentiment, emphasising the need for start-ups to demonstrate a clear route to commercialisation: "We find that start-ups often have excellent ideas but don't fully understand the market they are trying to enter. Investors want a clear business model and a thorough grasp of regulatory frameworks."

How can the government incentivise investment in sustainable technologies?

The panellists discussed the role of government in stimulating investment in sustainable technologies. Ben Burggraaf highlighted the importance of revenue support mechanisms to bridge the gap between the cost of fossil fuels and sustainable alternatives: “There needs to be a revenue guarantee. This will help incentivise investment in carbon capture and storage and hydrogen production technologies. The UK government needs to provide a guaranteed income stream for companies involved in these sectors, essentially ensuring they will make a profit, which is limited by the amount of funding available from the Treasury.”

Ben Burggraaf also pointed out the limitations of the UK Treasury’s funding approach: “The UK Treasury doesn’t hypothecate or recycle revenue into sustainable innovation, unlike the European Union, which puts half of the EU Emissions Trading System revenue into supporting the decarbonisation of industries like the chemical sector.”

What role should collaboration and universities play in driving sustainable technology development?

Collaboration and university expertise are crucial in fostering innovation and developing the next generation of sustainable technologies.

GW-SHIFT (Great Western Supercluster of Hydrogen Impact For Future Technologies) aims to connect universities and civic and industry partners to maximise the potential of hydrogen in the South of England and Wales. **Karen Brooks, Deputy Director of GW-SHIFT,** highlighted the importance of collaboration: "We're developing technologies and enabling joined-up strategic advances in hydrogen production, storage and distribution, conversion and end-user applications to grow the hydrogen economy in the region.

> *"There are many different colours of hydrogen, but we're interested in green hydrogen because it's environmentally friendly, and you don't have to do carbon capture for it to be produced sustainably. There are many national and global applications of green hydrogen, and it is key to driving net-zero innovations.*

"By engaging with stakeholders across the ecosystem, we're creating a supportive environment for emerging technologies and delivering research to bring to market," added Karen.

Professor Davidson stressed the need for universities to provide support and resources to help researchers commercialise their innovations. He cited the example of iCAST, which offers expertise to help start-ups de-risk their technologies and prepare for investment. A wealth of academic knowledge is ready to tackle real-world climate and sustainability issues.

Professor Davidson highlighted the often-overlooked potential of the UK chemicals sector, which he believes could be a driving force in the transition to a sustainable future:

> *"The UK chemicals sector is the second largest manufacturing exporter in the UK, which everybody forgets. Nobody seems to know that. We have potentially a wealth of renewable energy in this country and academic experts in chemicals and materials.*

"We should be world leaders in low-carbon solutions, hydrogen production, battery technologies, renewable feedstocks and circular economy initiatives. It's rather depressing that it doesn't even register in the government's Industrial Strategy Green Paper."

This insightful comment underscored the importance of recognising and supporting existing industries that can play a significant role in the shift towards sustainable practices. There is global competition, and to ensure the UK is positioned to make a challenge, innovation needs to be focused and supported by significant investment. It also highlighted the need for a more comprehensive and integrated approach to developing a sustainable industrial strategy.

IN SUMMARY

The roundtable discussion underscored the complexities and opportunities within the UK sustainable technologies sector. The panellists emphasised the importance of a clear value proposition, a deep understanding of the market, and collaboration between universities, industry, and investors. The UK has the potential to emerge as a global leader in sustainable technologies, but only if the right partnerships and investment backing come together.

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