

# Entrepreneurial Finance for Green Innovative SMEs conference

Thursday 20 June 2019







# Introduction

Environmental issues first surfaced in 1972, at the United Nations Conference on the Human Environment in Stockholm. The recent COP24 Katowice Climate Change conference highlighted the increasingly urgent need to operationalise the Paris 2015 agreement to reduce greenhouse gas emissions to ensure that climate change does not peak beyond 2C above preindustrial levels (to avoid the level beyond which catastrophic change may occur). Mitigation steps are many and varied and include national and transnational programmes (e.g. World Bank and European Union) to fund new innovative green industry circular economy solutions and encourage private sector investment to achieve a socio-environmental just transition. Whilst considerable focus has been on government programmes to fund larger scale projects (e.g. renewable energy and infrastructure), such as through public backed Green Investment Banks, alongside policies to encourage businesses energy efficiency, far less attention has been given to addressing the green innovation patient capital gap facing early stage small businesses. Since there are strong arguments that small businesses play a significant role in disruptive technological innovation, addressing their financing needs is arguably crucial to support the Paris agreement. Furthermore governments need to support innovation at lower technology readiness (TRL) levels, which may be far from commercial readiness and encourage traditional and new sources of entrepreneurial finance into this space. Ultimately, this can provide the best opportunity for optimal technological solutions to addressing climate change.

The conference therefore aims to bring together leading academics, policy makers and practitioners to discuss and showcase the interplay of policy and contemporary new innovative forms of entrepreneurial finance for early stage green innovative SMEs.



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<https://d68b3152cf5d08c2f050-97c828cc9502c69ac5af7576c62d48d6.ssl.cf3.rackcdn.com/documents/events/documents/green-finance-cfpp.pdf>

Climate Focus (2015) The Paris Agreement Summary. ClimateFocus client brief on Paris Agreement III, 28/12/2015.

<https://climatefocus.com/sites/default/files/20151228%20COP%2021%20briefing%20FIN.pdf>

Owen, R., Brennan, G., and Lyon, F. (2018) Enabling investment for the transition to a low carbon economy: Government policy to finance early stage green innovation. Current Opinion in Environmental Sustainability Vol.31: 137-145

Rizos, V., Behrens, A., van der Gaast, W., Hofman, E., Ioannou, A., Kafyke, T., Flamos, A., Rinaldi, R., Papadelis, S., Hirschnitz-Garbers, M., and Topi, C. (2016) Implementation of circular economy business models by small and medium-sized enterprises (SMEs): Barriers and enablers. Sustainability, 8, 11, 1212. Doi:10.3390/su8111212

GRICC (2018) Climate change and the just transition: A guide for investor action. Grantham Research Institute on Climate Change, London School of Economics, London Lee, N., Sameen, H. and Cowling, M. (2015) Access to finance for innovative SMEs since the financial crisis. Research Policy, 44(2), pp.370-380.

McDaniels, J. and Robins, N. (2017) Mobilizing Green Finance for Small and Medium Sized Enterprises in the G7. UN Environment Inquiry: Design of a Sustainable Financial System.

Rowlands, C. (2009) The Provision of Growth Capital to Small and Medium Sized Enterprises. Report for the Department for Business, Innovation and Skills. Crown Copyright, Richmond, London, November ISBN 9780115155253

Bak, C. (2017) Generating Growth from Innovating the Low Carbon Economy: Exploring Safeguards in Finance and Regulation. Centre for International Governance Innovation (CIGI) Working Paper 117, January, Waterloo, Canada. Available from: [https://www.cigionline.org/sites/default/files/documents/Paper%20no.117\\_WEB.pdf](https://www.cigionline.org/sites/default/files/documents/Paper%20no.117_WEB.pdf)

Lerner, J. (2010) The Future of Public Efforts to Boost Entrepreneurship and Venture Capital. Small Business Economics, 35 (3): 255-264.

Magusson, T. and Berggren, C. (2018) Competing innovation systems and the need for sustainable redeployment in sustainable transition. Technology Forecasting and Social Change Vol.126(C): 217-230

## Kingston Business School

Kingston University with over 17K students is the biggest provider of HE in West London. KU was the winner of the Guardian University Award for Teaching Excellence in 2017. Kingston Business School is part of Kingston University situated on Kingston Hill Campus.

Kingston Business School has been awarded the prestigious international accreditation by the AACSB (Association to Advance Collegiate Schools of Business) in recognition of the excellence of our business education. This accreditation has been earned by just five per cent of the world's business schools. Many courses are also accredited and recognised by professional bodies, including the Association of MBAs and the Chartered Institute of Marketing. The Business School also hosts the Small Business Research Centre (SBRC), one of the leading research groups in the UK in the field of small business and entrepreneurship.



<https://isbe.org.uk/>

The Institute for Small Business and Entrepreneurship (ISBE) is the UK's largest and most well established network for individuals and organisations involved in:

- Enterprise education practice
- Small business and entrepreneurship research
- Entrepreneurship policy formulation, delivery and evaluation
- Small business support, advice and development

With over 500 members, a network of close to 4,000 and a strong and relevant board, ISBE is at the forefront of developments in this sector.



# Programme 20 June 2019

9:15 - 9:50	Registration, Coffee & Tea	
9:50 - 10:00	Welcome	<b>Professor Robert Blackburn</b> <i>Associate Dean Research; Director SBRC Kingston Business School Kingston University</i>
Key note speakers		
10:00 - 10:30	A future of green entrepreneurial finance? Setting a research agenda.	<b>Professor Fergus Lyon</b> <i>Deputy Head of ESRC Centre for Understanding Sustainable Prosperity, Centre for Enterprise and Economic Research, Middlesex University</i>
10:30 - 11:00	Sustainable growth in the UK	<b>James Rydge</b> <i>London School of Economics, Grantham Research Institute on Climate Change and the Environment</i>
11:00 - 11:10	Q&A (moderated)	
Session I: Financial models for green start ups		
11:10 - 11:30	Did debt and equity markets respond differently to clean tech innovation and investment after the GFC?	<b>Professor Marc Cowling</b> <i>College of Business, Law, and Social Sciences, University of Derby</i>  Weixi Liu <i>Bath Management School, University of Bath</i>
11:30 - 11:50	Coffee Break	
11:50 - 12:10	Impact investment funds – a future for green start-ups?	<b>Svenja Jarchow</b> <i>TUM School of Management, Technical University of Munich</i>
12:10 - 12:30	Green Bonds – an opportunity for financing climate change	<b>Kathrin Greiff</b> <i>Wuppertal Institute for Climate, Environment and Energy Institut für die Zukunft der Industriegesellschaft - INZIN Institut</i>  Svenja Jarchow <i>TUM School of Management, Technical University of Munich</i>  Jens Teubler <i>Wuppertal Institute for Climate, Environment and Energy</i>



12:30 - 12:50	50 Shades of Green – angel investing	<b>Tiago Botelho,</b> Konstantinos Chalvatzis, <i>Norwich Business School, University of East Anglia</i> Colin Mason, <i>Adam Smith Business School, University of Glasgow</i>
12:50 - 13:00	Q&A (moderated)	
13:00 - 14:00	Lunch	
<b>Session II: Current and future trends</b>		
14:00 - 14:20	Financing cleantech firms: Issues and Evidence	<b>Seán O'Reilly,</b> <i>Technological University Dublin.</i> Ciarán Mac an Bhaird, <i>Dublin City University</i>
14:20 - 14:40	How do Business Models affect Crowdfunding Initiatives in Circular Economy? An Exploratory Study	<b>Daniele Leone,</b> Vincenzo Verdoliva, Francesco Schiavone, <i>University of Naples Parthenope</i>
14:40 - 15:00	Towards a Green New Deal: Lowering the Financing Barriers for CleanTech Ventures	<b>Robyn Owen,</b> Othmar Lehner, Fergus Lyon Geraldine Brennan, <i>Centre for Enterprise and Economic Development, Middlesex University Business School</i>
15:00 - 15:20	Cleantech incubators and the entrepreneurial ecosystem: Fundraising sources, income generation strategies and the role of public support	<b>Yannis Pierrakis,</b> Prof David Smallbone, Anna Ivanova, <i>Kingston Business School</i> Gregor Schueler, <i>InfoDev, The World Bank</i>
15:20 - 15:40	Q&A (moderated)	
15:40 - 16:00	Coffee Break	
16:00 - 16:20	UK Green Finance in Latin America	<b>Jeffrey Beyer,</b> <i>Carbon Limiting Technologies</i>
16:20 - 16:35	Case study: The challenge of passing from successful prototypes to commercial products: a case study on water purification	<b>Rosa Busquets</b> <i>Kingston University</i>
16:35 - 16:50	Case study: Chip[s] Board®- a Kingston University start-up	<b>Rowan Minkley</b> <i>Chip[s] Board®</i> <b>Rob Nicoll</b> <i>Chip[s] Board®</i>
16:50 - 17:00	Q&A (moderated)	
17:00 - 17:10	Closing remarks	<b>Ian Roberts,</b> <i>Head of Kingston Business School</i>
17.10 - 18.00	Wine reception	





### **Professor Robert Blackburn**

*Kingston Business School, Kingston University*

Robert is Associate Dean for Research at Faculty of Business and Social Sciences and Director of the Small Business Research Centre at Kingston University. His PhD involved an analysis of job generation and job quality in small firms drawing upon various theories of small firm strategy and development. He has since undertaken a range of analyses of small firms and entrepreneurship. Appointed Chair REF 2021, sub-panel unit of assessment 17 Business and Management. He is Editor-in-Chief of the International Small Business Journal. He holds various positions in the field of small business and entrepreneurship in the UK and internationally. Council Member and Treasurer Society for the Advancement of Management Studies. He is a Visiting Professor at Turku School of Economics, Finland. He is also Fellow of the Academicians of the Academy of the Social Sciences.



### **Professor Fergus Lyon**

*Middlesex University*

Fergus Lyon is a Professor of Enterprise and Organisations in the Centre for Enterprise and Economic Development Research, Middlesex University in London and Deputy Director of the ESRC Centre for the Understanding of Sustainable Prosperity. His research interests include social and sustainable enterprises, provision of public services by social enterprises, clustering and networks of enterprises, ethnic minority enterprise, and enterprise support policy. Recent funders include the Economic and Social Research Council, Cabinet Office, Dept of Business Innovation Skills, Innovate UK, International Labour Organisation, and a number of charities. In 2007 he was seconded to the Prime Ministers' Strategy Unit (Health team) in the Cabinet Office. He was the social enterprise lead on the £10m Third Sector Research Centre funded over five years by ESRC and Office for Civil Society. Previously he has carried out research in Ghana, Nigeria, India, Pakistan and Nepal. He is also a founder and director of a social enterprise preschool.



### **James Rydge**

*London School of Economics and Political Science,  
Grantham Research Institute on Climate Change and the Environment*

James is a Policy Fellow at the Grantham Research Institute on Climate Change and the Environment, London School of Economics. He received his PhD in Economics at the University of Sydney in 2007. He was formerly a research advisor to Lord Nicholas Stern and Lead Economist at the Global Commission on the Economy and Climate, where his research focused on low-carbon economic transitions and sustainable growth. Most recently he led a report for the LSE Growth Commission on policy priorities for a transition to sustainable growth in the UK.





## **Professor Marc Cowling**

*College of Business, Law, and Social Sciences University of Derby*

Marc Cowling is Professor at College of Business, Law, and Social Sciences University of Derby. He has a PhD in Business Economics from Warwick Business School and an MSc Economics from London University. Before his appointment at University of Derby he worked as Professor of Entrepreneurship and Head of Research at Brighton Business School, Professor and Head of the Department of Management Studies at Exeter Business School. Prior to that, he held the posts of Chief Economist at the Institute for Employment Studies and The Work Foundation. He has also held positions at Warwick Business School, Birmingham Business School (where he was Director of the Research Centre for Industrial Strategy) and London Business School (where he was Deputy Principal Investigator of the Global Entrepreneurship Monitor)



## **Svenja Jarchow,**

*Technical University of Munich*

Dr. Svenja Jarchow is Managing Director at the Center for Entrepreneurial and Financial Studies and PostDoc at the Chair in Entrepreneurial Finance at Technical University of Munich. She holds a PhD in Business studies and a Bachelor's and Master's degree in Molecular Biotechnology. Her research focusses in early stage financing and ownership structure of young innovative companies



## **Kathrin Greiff**

*Wuppertal Institute for Climate, Environment and Energy,  
Institut für die Zukunft der Industriegesellschaft - INZIN Institut*

Kathrin Greiff is a Research Fellow at Wuppertal Institute. She holds a PhD from Technische Universität München. Her research focus includes Sustainability indicators and life cycle assessment, Resource efficient consumption and production, Land use and conflicts with changing land use and Sustainable production and sustainable use of biomass.





## **Tiago Botelho**

*Norwich Business School, University of East Anglia*

Tiago is a Lecturer in Business Strategy at Norwich Business School as. Prior to joining NBS he held teaching positions (lecturer, teaching assistant, and tutor) at the University of Glasgow, University of Strathclyde, Universidade Nova de Lisboa, and Piaget Institute. He holds a BA degree in Economics from the Universidade Autónoma de Lisboa (Lisbon, Portugal) and a Masters (MA) degree in Finance and Business Economics from Fundação Getúlio Vargas, Escola de Pós-Graduação em Economia (Rio de Janeiro, Brazil). He has completed two Postgraduate Certificates: a Research Masters in Economics, Universidade Nova de Lisboa and a Research Methodology for Business and Management, University of Strathclyde. He holds a PhD in Management at the University of Glasgow on the topic of business angel investing.



## **Seán O'Reilly**

*Technological University Dublin*

Seán O'Reilly is the Head of Finance Department in Technological University Dublin. Seán qualified as a Chartered Accountant in PwC and began lecturing shortly after he qualified. Seán primarily lectures Accounting and Finance and is also a lecturer for Chartered Accountants Ireland. He holds a visiting lectureship in Beijing University of Technology. Aside from his academic work, Seán is an SME Finance Specialist for the European Bank for Reconstruction and Development and provides financial training for SMEs. Seán's main research interest is in entrepreneurial finance.



## **Daniele Leone**

*University of Naples Parthenope*

Daniele Leone is a Post-doc Research Fellow at the Parthenope University of Naples, Italy. He received his doctoral degree in management from the University of Naples Federico II in February 2019. In 2017 he was a Visiting Scholar at the Norwich Business School, University of East Anglia, Norwich, UK. In 2015 he received the master's degree in International Marketing and Management from Parthenope University, Naples, Italy. He is also a member of the editorial board of the International Journal of Globalisation and Small Business. His main research areas are innovation management, crowdfunding and healthcare management.



## **Robyn Owen**

*Middlesex University Business School*

Dr Robyn Owen is Associate Professor of Entrepreneurial Finance, Centre for Enterprise and Economic Development Research (CEEDR), Middlesex University Business School. She is also a Research Fellow at the ESRC Centre for Understanding Sustainable Prosperity (CUSP) and Co-chair of the Institute for Small Business and Entrepreneurship (ISBE) Special Interest Group for Entrepreneurial Finance. Robyn specialises in the early stage financing of innovative ventures and has published government reports for the UK Department for Business, Energy and Industrial Strategy and academic papers in journals such as *Urban Studies*, *International Small Business Journal*, *Environment and Planning C (Government and Policy)*, *Venture Capital*, *Local Economy* and *Strategic Change*. Recent policy research projects include: British Business Bank Regional Funds Evaluation, Evaluation of English ERDF programme, Innovate UK evaluations of Pilot Loans and Investment Accelerator programmes.



## **Yannis Pierrakis**

*Kingston Business School, Kingston University*

Dr Yannis Pierrakis is a Senior Lecturer in Entrepreneurship and Innovation Management and Associate Member of the Small Business Research Centre (SBRC) at Kingston Business School, Kingston University. His research focuses on entrepreneurial finance, including venture capital, crowdfunding and digital assets (ICOs and STOs). He has also worked for the World Bank's Climate Innovation Centers program, which supports innovative ventures that are developing innovative solutions to address climate change challenges through mentoring, facilities, and seed funding. Prior to joining academia, Yannis worked as Head of Investments Research at Nesta, the UK innovation foundation.



## **Jeffrey Beyer**

*Carbon Limiting Technologies*

Jeffrey Beyer is Principal Consultant for Carbon Limiting Technologies. He also worked as Director for Beyond C, Innovation and Communications Manager at National Grid. He holds Masters in Environmental Change and Management from University of Oxford.





**Rosa Busquets**  
*Kingston University*

Rosa Busquets studied Chemistry at the University of Barcelona (UB) (2001), and completed her studies with an MRes, Diploma of Advanced Studies and a European PhD (UB-Lund University). She became assistant professor at the University of Barcelona (2006-2009) and moved to the UK to work at MAST Carbon International Ltd. as experienced Marie Curie fellow (2009-2011). She obtained an individual Marie Curie fellowship to work in the Nanoscience and Nanotechnology group at the University of Brighton (2011-2013), from where she moved to Kingston University (2013-present). She leads the research team Environment, Health and Food Safety group and is honorary Associate Professor at University College London.



**Rowan Minkley,**  
*Chip[s] Board®*

Rowan is Co-Founder and CEO of Chip[s] Board®. Rowan is an environmental and strategy led designer and entrepreneur, focusing on how to bring innovation to existing projects and develop new strategies for circular economy businesses.



**Rob Nicoll,**  
*Chip[s] Board®*

Rob is Co-Founder and CMO of Chip[s] Board®. Rob is a Material lead designer with strong focus on developing novel solutions to growing global problems. Graduated with a degree in design with accompanying awards in product innovation and material development.

## **Title: A future of green entrepreneurial finance? Setting a research agenda.**

**Fergus Lyon**

*Centre for Enterprise and Economic Research, Middlesex University*

### **Abstract**

With greater recognition of the climate crisis, there is growing attention on how to encourage green innovations and the role of finance. It is amongst these innovations, that we will find the solutions needed for the rapid transition required. In this way these innovations are 'prefigurative' reflecting an alternative future that is needed. There is therefore a role for public support, but questions remain about where this should be focused.

Reflecting on past experience of green entrepreneurial finance, this paper examines two tools to shed light on the issue. Firstly the green finance escalator, that identified the types of finance entrepreneurs can seek, and secondly the green finance ecosystem with the emphasis on the interconnections between actors. The experience of the UK's Green Investment Bank is reviewed, and conclusions drawn for a research agenda.

## **Title: Sustainable growth in the UK**

**James Rydge**

*London School of Economics and Political Science,  
Grantham Research Institute on Climate Change and the Environment*

### **Abstract**

The UK needs a credible sustainable growth strategy if it is to meet a net zero 2050 target and fulfil its international climate obligations. Existing UK sustainable growth strategies are a promising start but need to go far beyond a focus on the narrowly defined low-carbon sector that accounts for around 1% of UK GDP and employment. A strategy of sufficient coherence and ambition needs to be built around four policy priority areas: innovation, infrastructure, skills and cities. Emissions reductions across these areas need to be achieved at the same time as they undergo radical transformations from intertwining economic, technological and social transitions. These transformations are already opening up new opportunities for improvements to labour and resource productivity, and sustainable, low-carbon growth, everywhere across the UK economy. The UK should capitalise on its strengths in the development of cutting-edge technologies and financial services and grasp the opportunities from its transition to sustainable growth. Key to this are SME's. They are an important source of innovation and are nimble enough to respond rapidly to new opportunities for productivity and sustainable growth. Ensuring adequate finance and supportive policy will be crucial for realising their potential.



## **Title: Did debt and equity markets respond differently to clean tech innovation and investment after the GFC?**

**Marc Cowling**

*College of Business, Law, and Social Sciences University of Derby*

**Weixi Liu**

*Bath Management School, University Of Bath*

### **Abstract**

The growth of high-tech industries is a well-established driver of economic growth as outlined in the endogenous growth literature. Here the birth and growth of high-tech industries is fundamentally driven by technological change (Romer, 1990; Aghion and Howitt, 1992). Clean technology is an increasingly important driver of innovation in this context as firms and industries seek to address challenges around the global scarcity of resources, but also achieve wider social and environmental goals. But younger and smaller firms in general face problems in external capital markets, and we argue in this paper that these more general capital constraints are exacerbated and magnified in innovative and technology-based firms (Boekholt, 1996), particularly those investing in clean technologies. Using a large UK data set covering the pre-and-post GFC period, we find several important features that distinguish clean tech firms from more conventional firms in the context of their interactions with capital markets. Firstly, we find that clean tech firms have a higher demand for external capital, particularly those firms that are seeking to increase their investment in clean technologies. Secondly, we find that clean tech firms have a higher preference for non-traditional sources of funding with a particular dislike for traditional bank debt. Finally, we find that whilst in general financiers are happy to finance clean technology investments *per se*, there appears to be a particular problem around clean technology investments in high-tech industries. And this problem is exacerbated in equity markets.

## **Title: Impact investment funds – a future for green start-ups?**

**Svenja Jarchow**

*TUM School of Management, Technical University of Munich*

### **Abstract**

In order to find private investors for the financing of green ventures, the field of venture capital investors that aim at more than a financial return has gained increased interest. Those impact investment funds so far accumulate money mostly from private individuals, yet for the future might also become of interest for larger institutional investors. In order to understand their business model, we followed the selection process of an impact investment fund actively looking for investment targets that relate to the reduction of plastic waste. By taking a deeper look at the selection criteria for an impact investment fund, we gain insights from an investor perspective on characteristics young firms need to match in order to become attractive for external equity financing. Furthermore, we get a first understanding of the risk-return profile underlying the investment decision as well as the evaluation process of the ecological return side.

## **Title: Green Bonds – an opportunity for financing climate change**

**Kathrin Greiff**

*Wuppertal Institute for Climate, Environment and Energy  
Institut für die Zukunft der Industriegesellschaft - INZIN Institut*

**Svenja Jarchow**

*TUM School of Management, Technical University of Munich*

**Jens Teubler**

*Wuppertal Institute for Climate, Environment and Energy*

### **Abstract**

"To achieve the EU's 2030 climate targets, we need around €180 billion a year of additional investments in energy efficiency and renewable energy." (Jyrki Katainen, Vice-President responsible for Jobs, Growth, Investment and Competitiveness, 2018) A tool for the mobilization of private capital are green bonds issued by banks and available for interested investors from a great variety of social and financial backgrounds. Furthermore, as a newly raising opportunity, local governments issue green bonds as part of their sustainable financing strategy. Yet, how are these bonds selected? Which evaluations are the basis for the labelling of a green bond and how much impact can they generate? We present two-sided data from a local German bank's green bonds, addressing the question of carbon reduction measurement and impact as well as green bonds as a financial instrument for investors and companies alike.

## **Title: 50 Shades of Green – angel investing.**

**Tiago Botelho,**

Konstantinos Chalvatzis,

*Norwich Business School, University of East Anglia*

**Colin Mason**

*Adam Smith Business School, University of Glasgow*

### **Abstract**

There is considerable evidence of the significance of green/clean as a growth sector. For example, a recent market research report highlighted the increase in institutional investment deals in the energy sector. However, this is still an unexplored topic in angel research. This research explores the interest of the angel community in making green/clean investments, what types of angels are the most interested in making such investments, whether green/clean investments are seen to offer attractive financial returns, and whether investors are willing to trade-off lower financial returns because of the wider environmental benefits if the business is successful. Previous research has emphasized that business angel investment motivations can be divided in three categories: Hedonism (noneconomic benefits – "psychic income"), Economics (wealth maximization) and Altruistic (transcend one's self-interest). It might be assumed that investing in green/clean will be strongly correlated to Altruistic motivations, but is this true? Do angel investors see investing in green/clean as a socially responsible investment (SRI)? How much do angel investors take into account the potential downside of this type of investments when building their portfolios? This papers follows the trend in other areas of knowledge (marketing, economics, sociology and so on) that explores the effects the behavioral impacts of economic agents being more aware of environmental problems.



## **Title: Financing cleantech firms: Issues and Evidence.**

**Seán O'Reilly**

*Technological University Dublin*

**Ciarán Mac an Bhaird**

*Dublin City University.*

### **Abstract**

The recent report by the Intergovernmental Panel on Climate Change (IPCC, 2018) highlighted the urgent and immediate need to reduce global greenhouse gas emissions in an attempt to restrict global warming to 1.5° Centigrade above pre-industrial levels to avoid destruction of natural ecosystems and a significant increase in poverty. Awareness of the potentially catastrophic effects of further increases in global warming, the threat of climate change and the unsustainability of current practices is widespread, as evidenced by the work of agencies such as the Sustainable Development Solutions Network, an initiative of the United Nations. Reduction of harmful carbon emissions is one of the most important elements in striving for decarbonisation, and firms in the cleantech sector are vitally important to reducing harmful climate-altering emissions.

## **Title: How do Business Models affect Crowdfunding Initiatives in Circular Economy? An Exploratory Study**

**Vincenzo Verdoliva,**

Francesco Schiavone,

Daniele Leone

*University of Naples Parthenope*

### **Abstract**

Crowdfunding (CF) is an important source of funds for innovative start-ups. However, prior literature paid little attention to how this phenomenon takes place when such companies market products and services within the context of the so-called “circular economy” (CE). Prior literature reports CE firms can design more types of business models that focus, alternatively, around i.) the customer value proposition & interface or ii.) the network value. Drawing on this evidence, the present study aims to explore if different CE business models lead to different approaches for CF (e.g., types of CF, project size, etc). To fill in such literature gap, we perform a multiple case study of the latest best practices performed by CE solutions within the last 24 months. We use the findings to develop a business model-based taxonomy of the main CF approaches within the CE context.

## **Title: Towards a Green New Deal: Lowering the Financing Barriers for CleanTech Ventures**

**Robyn Owen,**  
Othmar Lehner,  
Fergus Lyon and Geraldine Brennan,  
*Centre for Enterprise and Economic Development, Middlesex University Business School*

### **Abstract**

How might a Green New Deal be applied to the early stage financing of Cleantechs? Amidst rising interest and adoption of Green New Deals in the US, the paper explores the need for more focused policy to address early stage long horizon financing of Cleantechs. We argue that insufficient focus has been applied to early stage investing into these types of SMEs that could lower CO2 emissions across a range of sectors through innovations (including renewable energy, and also for example recycling, advanced manufacturing, transport and bio-science). Adopting a resource complementarity lens and borrowing from transaction cost theory, we illustrate and build theory through longitudinal UK case studies how government policy can scale-up through international collaboration public-private co-finance in order to facilitate cleantech innovation with potentially game changing impacts on reducing CO2 emissions in order to meet the Paris 2015 Climate Change targets.

## **Title: Cleantech incubators and the entrepreneurial ecosystem: Fundraising sources, income generation strategies and the role of public support**

**Yannis Pierrakis,**  
Prof David Smallbone,  
Anna Ivanova,  
*Kingston Business School*

Gregor Schueler,  
*InfoDev, The World Bank*

### **Abstract**

This paper explores the different financial viability strategies adopted by cleantech incubators located in both high-income and medium and low-income countries. More specifically, we focus on three interrelated research questions: (i) What are the most common funding sources for cleantech incubators paying particular attention to the balance between an incubator's tangible and intangible assets? (ii) What income generation strategies they employ to achieve financial viability? (iii) What appears to be the main influences on whether or not a CTI attracts sufficient funding to be financial viable? The study uses data from 71 cleantech incubators and interviews from 11 cleantech incubator managers. Based on the analysis of the funding sources of these cleantech incubators, we identified six distinctive cleantech incubation types: Government-backed; University-run; Private; Corporate; Hybrid and Donor-backed. Although, the vast majority of the examined cleantech incubators rely on public funding, our results suggest that high levels of fundraising and income diversification strategies are requirements for securing financial viability and for achieving a competitive advantage. The article concludes with a set of recommendations for both policy makers and cleantech incubator managers.



## **Title: UK Green Finance in Latin America**

**Jeffrey Beyer**

*Carbon Limiting Technologies*

### **Abstract**

The UK is a leading green finance hub and is well-placed to take advantage of growing investment opportunities in Latin America. In Mexico, a liberalised energy market and rising demand are driving growth in the power sector. In Brazil, a yawning infrastructure investment gap is creating investment opportunity. But both countries face challenges. Learn more about the UK's green finance prowess, how investors perceive green finance opportunities in Latin America and beyond, and how changes in capital markets are affecting decision-making.

## **Title: The challenge of passing from successful prototypes to commercial products: a case study on water purification**

**Rosa Busquets**

*Kingston University*

### **Abstract**

The latest developments in water purification involve the use of nanotechnology. Nanotechnology makes possible multiplying the efficiency of materials, and in some cases, it enables new physico-chemical phenomena that can be useful for new applications. New advantageous commercial products can be based on solutions offered by nanotechnology. In research laboratories, prototypes that are more advanced than currently available technologies are designed, made, understood how they work, and tested. All in small scale. Early in the development, the input from the industry is needed to adjust the prototypes to industry requirements and to help in scaling up. This case study will present the funding route taken to invent an exceptional material for water purification testing it and convincing the industry and investors of its value; the problems found and possible solutions for the future.

## **Title: Case study: Chip[s] Board®- a Kingston University start-up**

**Rowan Minkley**

*Chip[s] Board®*

**Rob Nicoll**

*Chip[s] Board®*

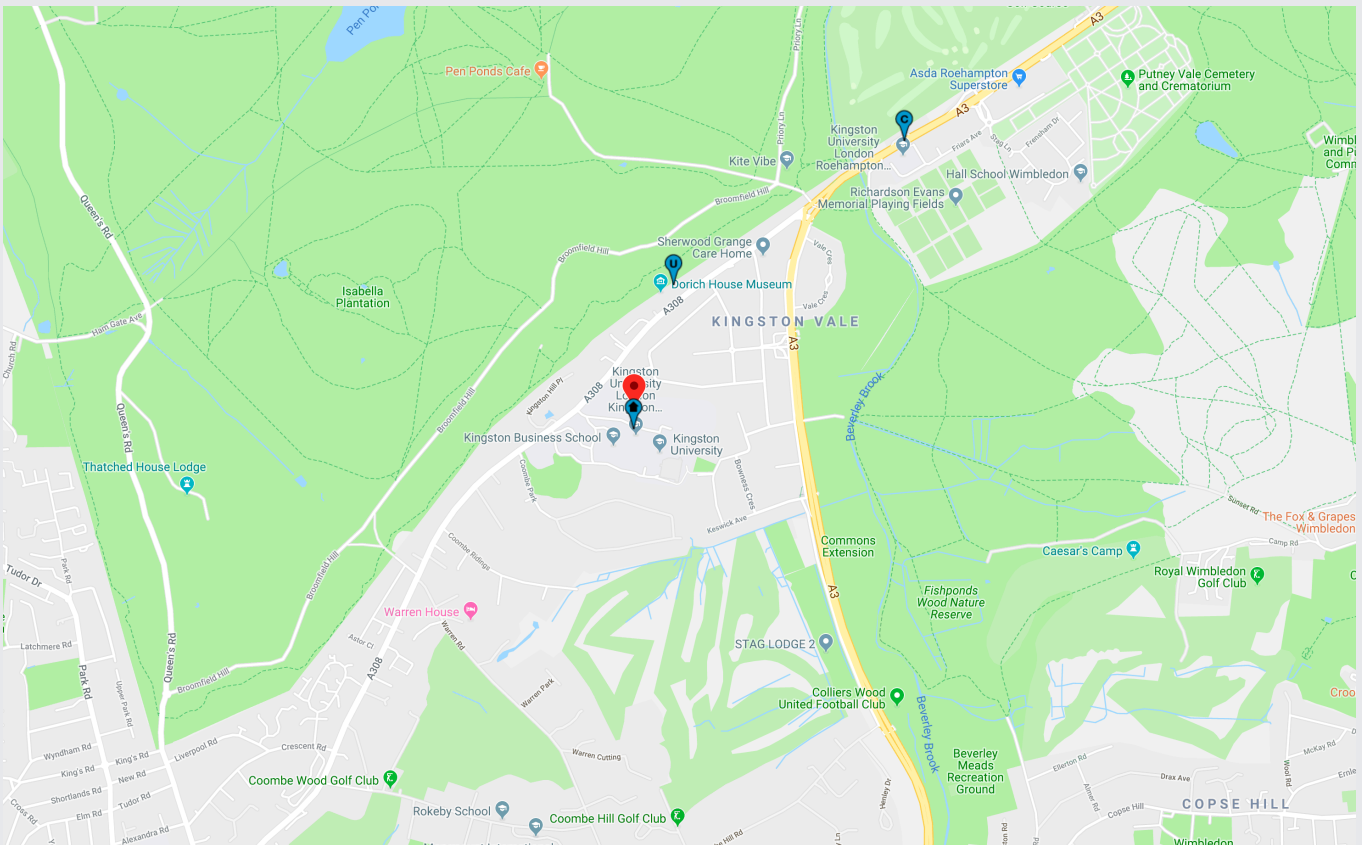
### **Abstract**

Founded By Robert Nicoll and Rowan Minkley in 2017 Chip[s] Board® is a biomaterial innovation company that finds environmentally responsible material solutions for creative industries. Supplied by McCain UK, Chip[s] Board® have initially focused on how waste from potato production can be utilised to make plastic alternatives.

**Directions:**

**Venue:** Room 2039, Business School, Kingston Hill campus, Kingston Hill, Kingston upon Thames, Surrey KT2 7LB

More info: <https://www.kingston.ac.uk/aboutkingstonuniversity/location/kingston-hill/>



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