

# Asset-Level Data Annual Meeting

8 June 2020

*Online*

GeoAsset Project, Sustainable Finance Programme, University of Oxford  
2° Investing Initiative



## Overview

The *GeoAsset Project* at the University of Oxford, as part of the Spatial Finance Initiative, is partnering with 2° Investing Initiative to host a meeting on asset-level data on 8<sup>th</sup> June 2020. GeoAsset, successor to the Asset-level Data Initiative (ADI), has three primary goals: to improve the quality of asset-level data across all key sectors; to increase availability through the creation and maintenance of trusted, publicly-available datasets; and to generate demand for asset-level data and associated services.

Financial decision-makers face an unprecedented combination of social and environmental risks, and associated opportunities. Understanding these risks at the required level of granularity increasingly means assessing them at the asset level. As its use in investment decision-making evolves, asset-level data is increasingly found alongside satellite imagery and remote sensing data, as well as advanced artificial intelligence analytics.

This meeting will take stock of where we are today with respect to the availability and use of asset-level data and how it can contribute to better decision-making. It will explore avenues for collaboration on driving asset-level data into the mainstream of risk and opportunity assessment. Most of all, the meeting is intended to be a forum for discussion, debate and learning for actors across the finance, research and policy spectrum, ranging from investment professionals, to data scientists, to government departments.

### Note on format and recording

The meeting will take place virtually using the Zoom software platform. *Registered participants should receive an invitation link to register for the Zoom meeting.*

Participants will be muted during presentations and panel discussions, and have the ability to contribute either by 'raising their hand' virtually, or by typing comments and questions into the chat box. The parallel sessions in the afternoon will make use of Zoom's 'breakout room' functionality in order to proceed simultaneously. *Registered participants should receive an invitation link to a webform where they can indicate their session preferences in advance.*

Under normal circumstances, the meeting would have taken place under Chatham House rules to encourage a candid and engaging discussion. In a similar spirit, the meeting will be recorded only for internal use in order to support the drafting of a report summarising the discussion. The report will follow Chatham House rules and will be published on the Spatial Finance Initiative website.

Please contact [alex.clark@smithschool.ox.ac.uk](mailto:alex.clark@smithschool.ox.ac.uk) with any questions or comments.

## Agenda

*All times are CEST (Paris, France).*

**10:00-10:10**                      **Introduction and Welcome**  
Ben Caldecott, *Director, Oxford Sustainable Finance Programme*

**10:20-10:30**                      **2 Degrees Investing Initiative: Programmes and Activities**  
Jakob Thomä, *Managing Director, 2° Investing Initiative*

**10:20-10:30**                      **GeoAsset Project: Overview, Activities and Objectives**  
Alex Clark, *Director, GeoAsset Project, Oxford Sustainable Finance Programme*

**10:30-11:30**                      **Showcase: Asset-level data for financial analysis and decision-making**

Presentations showcasing the uses of asset-level data and its integration into financial analysis and decision-making.

Utilisation rates and asset economics

Matt Gray, *Managing Director, Co-Head of Power and Utilities, Carbon Tracker Initiative*

Asset-level physical risk analysis and its integration into ESG

Caroline Sundin, *Associate, MSCI Climate Risk Centre*

Asset-level data for equities analysis

Karl Mallon, *Co-Founder and CTO, XDI (Cross-Dependency Initiative)*

**11:30-12:30**                      **Panel Discussion: Curating, using and publishing asset-level data**

Open discussion among organisations working on development of, and widening access to, asset-level datasets, with moderator providing guiding questions. Sets context for afternoon sessions.

*Moderator: Alex Clark, Oxford Sustainable Finance Programme*

*Panellists:*

- Josh Gilbert, *Co-Founder and CEO, Sust Global*
- Darius Nassiry, *Senior Advisor, Climate Finance Advisors*
- Jamie Armour, *Policy Advisor, Green Finance, UK BEIS*
- Lisa Wong, *Partner, Verification and Impact, Affirmative Investment Management*
- Matthew Wright, *Analyst, Impax Asset Management*



12:30-13:30

Parallel Sessions 1: Sector-specific challenges and solutions

The first set of parallel sessions outlines challenges and successes in gathering asset-level data in key sectors considered to be on the frontier of current efforts. Panellists will discuss methodologies used to identify assets and associate them with risks and other characteristics. Panellists will also explore how the underlying data can be made available to researchers and the financial industry, and the quality and granularity requirements of asset-level data for use in decision-making.

## Session 1A: Heavy industry, transport and linear assets

*Moderator:* Christophe Christiaen, *Sustainable Finance Lead, Satellite Applications Catapult*

### *Panellists:*

- Léonie Chatain, *Senior Analyst, Climate Risk, Four Twenty Seven*
- Dirk Röttgers, *Policy Analyst, OECD*
- Matthew McCarten, *Spatial Finance Lead, Oxford Sustainable Finance Programme*
- Susanne Schmitt, *Nature and Spatial Finance Lead, WWF-UK*

## Session 1B: Agriculture and forestry

*Moderator:* Jakob Thomä, *2° Investing Initiative*

### *Panellists:*

- Clarisse Simonek, *Head of Responsible Investment, Ossiam*
- Catherine Marshall, *Principal Consultant, RealAlts*
- Albert Boogard, *Head of Innovation, Rabo Foundation*
- Alexander Gillett, *CEO, HowGood*



13:30-14:30

**Parallel Sessions 2: Methodologies and applications for asset-level data**

The second set of parallel sessions outlines progress in measuring and understanding risk from asset-level data, and the application of advanced data analysis techniques, including but not limited to machine learning algorithms and satellite imagery.

### Session 2A: Machine learning, AI and asset-level data

Topics to be covered include: Gaps in predictive environmental harm/emissions estimates that financial institutions are not currently able to measure; role of AI techniques in filling them; uses and limits of AI and spatial imagery in linking physical effects of economic activity on an environment to specific sources; effect of increasing availability of satellite imagery for facilitating advances in this area.

*Moderator: Nataliya Tkachenko, Research Associate, Oxford Sustainable Finance Programme*

#### *Panellists:*

- Scott Wiechenthal, *Assistant Professor, McGill University*
- Beth Burks, *Associate Director, S&P Global Ratings*
- Christian Lelong, *Director, Natural Resources, Kayrros*
- Jackson Hoffart, *Analyst, 2° Investing Initiative*
- Gabriel Thoumi, *Director, Planet Tracker*

### Session 2B: Measuring and understanding risk

Topics to be covered include: Advantages of asset-level data in identifying physical/liability risks and opportunities to mitigate them through engagement & portfolio construction; discussion of sectors where link is most straightforward to make and where more research is needed; benefits of increasing availability of satellite imagery for facilitating advances in this area; extent to which open-source datasets containing this information can be developed on the back of accelerating advances in remote sensing/satellite data.

*Moderator: Madison Condon, Associate Professor, Boston University School of Law*

#### *Panellists:*

- Ellie Mulholland, *Director, Commonwealth Climate & Law Initiative*
- Luke Wakeling, *Climate Risk Consultant, Baringa Partners*
- Harun Dogo, *Executive Director, Global Sustainable Finance, Morgan Stanley*
- Dieter Wang, *Consultant, World Bank*
- Noémie Klein, *CEO, Asset Resolution*

14:30-15:00

**Plenary and report-back from session moderators**

15:00-15:15

**Summary and next steps**

## Speaker biographies

### **Jamie Armour, UK Department for Business, Energy and Industrial Strategy**

Jamie is in the domestic Green Finance Team in the Department for Business, Energy and Industrial Strategy, where he leads on the delivery of Chapter 3 of the Government's Green Finance Strategy, 'Capturing the Opportunities'. He primarily focusses on improving access to climate-related data for the financial services industry, which is a critical enabler for many of the other deliverables in the Strategy. Jamie previously worked in green finance and financial regulation more generally in the insurance industry. He has an MSc in European Public Policy from UCL.



### **Albert Boogaard, Rabo Foundation**

Funded by the Rabobank Group, Rabo Foundation focusses on access to finance for farmers through more than 200 rural cooperatives and aggregators in 22 countries.

Albert graduated as a development economist from Wageningen University (WUR) and has over 20 years of experience in agricultural finance in different departments in Rabobank and Rabo Foundation. For the past 3 years, Albert has worked on digital innovations in smallholder finance in order to improve outreach and services of Rabo Foundation and its partners. This includes the digitisation of supply chains, geodata and the analytical tools needed to extract value out of data and design new financial products and services.



### **Beth Burks, S&P Global Ratings**

Beth is an Associate Director on the Sustainable Finance team at S&P Global Ratings where her role includes providing Environmental, Social and Governance (ESG) Evaluations, Green Evaluations, integrating ESG into credit ratings, and publishing thematic research.

Beth has extensive experience in ESG data and analytics specializing in energy, utilities, infrastructure, materials, retail and consumer products sectors. Her published research includes looking at water risks and social risks in credit ratings, linking ESG and corporate financial performance, and climate change finance.



Currently, Beth is part of the City of London's Sustainable Development Capital Initiative (SDCI), which aims to help raise the investment needed to meet the UN Sustainable Development Goals (SDGs). Beth is also involved in development of climate scenario analysis for credit ratings from



a physical risk perspective. She has an interest in understanding how satellite technology and machine learning can be incorporated into financial analysis.

She holds a BSc in Mathematics from Imperial, and has recently completed her MSc in Geographical Information Science.

<https://uk.linkedin.com/in/elisabethburks>

## Ben Caldecott, Sustainable Finance Programme, University of Oxford

Dr Ben Caldecott is the founding Director of the Oxford Sustainable Finance Programme. He is an Associate Professor and Senior Research Fellow at the University of Oxford Smith School of Enterprise and the Environment, a Visiting Researcher at The Alan Turing Institute, and a Visiting Scholar at Stanford University. Ben is also Senior Advisor to the Chair and CEO of the UK Green Finance Institute (GFI) and the COP26 Strategy Advisor for Finance based out of the Cabinet Office.



Ben specialises in environment, energy, and sustainability issues and works at the intersection between finance, public policy, and academe, having held senior roles in each domain. He founded and co-chairs the Global Research Alliance for Sustainable Finance and Investment (GRASFI), an alliance of global research universities promoting rigorous and impactful academic research on sustainable finance. He established and leads the Sustainable Finance Theme at The Alan Turing Institute and initiated the Spatial Finance Initiative, which aims to mainstream geospatial capabilities enabled by space technology and data science into financial decision-making globally.

<https://www.smithschool.ox.ac.uk/people/bcaldecott.html>

## Léonie Chatain, Four Twenty Seven

As Climate Risk Senior Analyst, Léonie supports European client deliveries, sales and marketing from Four Twenty Seven's Paris office. She translates Four Twenty Seven's data into user-friendly products and visuals and develops risk analysis for financial institutions, corporations and governments.



Léonie has a background in political science and urban data analysis. Previously, she provided consulting on urban sustainability for a French construction firm.



## Christophe Christiaen, Satellite Applications Catapult

Christophe Christiaen is the Sustainable Finance Lead at the Satellite Applications Catapult. He is responsible for the Catapult's sustainable finance activities, engaging with sustainable finance stakeholders and promoting the market opportunity for geospatial solutions in this sector across the UK space community.

Being involved with the Spatial Finance Initiative from the start, he has been working across different SFI projects including the cement and steel asset-level data work.



## Alex Clark, Oxford Sustainable Finance Programme

Alex Clark is Director of the GeoAsset Project and a DPhil (PhD) student at the Smith School of Enterprise and the Environment at the University of Oxford. The GeoAsset Project works to enhance, develop and deploy open-source asset-level data across carbon-emitting sectors and advance the use of asset-level data in financial decision-making. Alex's academic research focuses on the role of state-owned enterprises in the low-carbon transition and management of stranded asset risks, with a focus on China.



Previously, Alex was an Analyst at the Climate Policy Initiative, covering topics including the alignment of development finance with the Paris Agreement, financing mechanisms for low-carbon transport, and tracking of climate finance flows. Alex is a former Henry Fellow at Harvard University. He holds an MSc (Global Governance and Diplomacy) from Oxford University, and a BA (Hons) in Philosophy, Politics and Economics from Warwick University. He is Senior Advisor (Youth Financing) to SDSN Youth.

## Madison Condon, Boston University

Madison Condon is an Attorney at the Institute for Policy Integrity at New York University School of Law. She will be joining the faculty of Boston University School of Law as an Associate Professor in July 2020. Prior to this, she was a fellow with the Earth Institute at Columbia University where her research focused on environmental risk and disclosure. Madison clerked for Judge Jane Kelly of the Eighth Circuit Court of Appeals, served as a Water Security Fellow at Harvard University, and consulted the Organisation for Economic Cooperation and Development on carbon regulation and international trade law.



Madison received a JD from Harvard Law School, an MA in Law and Diplomacy from the Tufts Fletcher School, and a BS in Earth and Environmental Engineering from Columbia University. She was also a Fulbright Fellow at TU Delft in the Netherlands.



## Harun Dogo, Morgan Stanley

Harun Dogo is an Executive Director in the Global Sustainable Finance group at Morgan Stanley, where he leads the firm's ESG data efforts and quantitative integration of sustainability into asset selection, pricing, and risk models. Prior to joining the firm, he was an economist at the World Bank, where he worked at the intersection of sustainability and economics across all regions of the world. Earlier in his career, he served on the staff of the U.S. Senate Committee on Finance and was a policy analyst at the RAND Corporation.



A graduate of the United States Air Force Academy, he also holds graduate degrees in applied physics and irregular warfare from the Naval Postgraduate School, and in policy analysis from the Pardee RAND Graduate School.

## Josh Gilbert, Sust Global

Josh Gilbert is Co-Founder & CEO of Sust Global, where he leads a diverse team of geospatial technologists, financial professionals and data experts. In addition to his experience in geospatial technology and innovation consulting, Josh holds a MSc. in Economics and International Development from SOAS, University of London.



[www.sustglobal.com](http://www.sustglobal.com)

<https://twitter.com/joshgilbertuk>

<https://www.linkedin.com/joshgilbert>

## Alexander Gillett, HowGood

Alexander Gillett is the co-founder and CEO of HowGood, a data company with the world's largest product sustainability database for the food and personal care industries. Since 2007, Alexander has guided HowGood's business trajectory, driving innovative partnerships with like-minded companies and organizations.



Under Alexander's leadership, HowGood has provided critical data and insights into the quickly-shifting world of sustainability for retailers, consumers, and CPGs, while maintaining its mission to increase transparency and reduce the impact of food and consumer goods on our world.



## Matt Gray, Carbon Tracker

Matt joined Carbon Tracker in 2016 to start the Power & Utilities workstream. He has worked as a sell-side analyst and consultant for over 10 years. Previously, Matt was an analyst at Jefferies, an American investment bank, where he was the head of EU carbon and power research. More recently, Matt was a consultant analyst at the IEA and has also worked on carbon trading and origination at Credit Suisse and energy efficiency at the UK's DECC. Matt has a BAppSci from the University of Otago and an MSc from the University of Manchester.



<https://carbontracker.org/about/team/matthew-gray/>

## Jackson Hoffart, 2° Investing Initiative

Jackson is an Analyst at the 2° Investing Initiative, where he is working on the application of the Paris Agreement Capital Transition Assessment (PACTA) methodology for corporate lending portfolios. He joined 2DII in June 2019 and is working from the Berlin office. Prior to joining 2DII, Jackson served as a researcher in Cosmology at the University of Toronto. He holds a BSc. in Physics from McGill University.



<https://twitter.com/jdhoffart>

<https://github.com/jdhoffa>

## Noémie Klein, Asset Resolution

Noémie Klein is CEO of Asset Resolution, 2DII's data spin off. Asset Resolution's mission is to optimise the accessibility and use of physical asset-level data for climate analyses in the financial sector. To achieve this, Asset Resolution maps over 300,000 physical assets across 8 sectors to companies and financial securities.



Noémie has worked at the intersection of climate, finance, and data for the past 15 years. She has authored a number of publications, including the World Bank State and Trends of Carbon Pricing report. Prior to joining Asset Resolution, Noémie was Director at the consultancy Navigant, where she led their climate finance activities. She holds a MSc. in Environmental Technology from Imperial College London and an MRes in Environmental Sciences from University Paris 7.

<https://asset-resolution.com/>



## Christian Lelong, Kayrros

Christian is Director of Natural Resources at Kayrros, where he oversees greenhouse gas monitoring and market intelligence in metals and mining commodities. He brings 14 years of experience in the natural resources industry, most recently as the Head of Gas and Coal Research at Goldman Sachs in New York and Sydney. Prior to that he was Head of Strategy at BHP's coal division.



Christian is based in London and holds an MBA degree from INSEAD.

<https://www.linkedin.com/in/christian-lelong/>

## Karl Mallon, XDI

Dr Karl Mallon is co-founder and CTO for XDI. He has training in physics and engineering and a long career in climate change policy and technology modelling. Currently he runs the technical team behind the Climate Risk Engines that run large scale portfolio modelling of physical risk, cross dependency and adaptation cost-benefit analysis. XDI has undertaken analysis in over 100 countries across nearly 20m unique assets for government, utilities and the private sector. The open access EasyXDI platform analyses over 100 physical risk queries per day.



## Catherine Marshall, RealAlts

Catherine leads RealAlts, a real assets investment consulting firm whose work spans global investment strategy, ESG and TCFD reporting, sustainable new product development, and corporate communications.



Since 2008, Catherine has led assignments for a wide variety of Canadian and global clients. Prior to her work in consulting, Catherine was Director of Research and Strategy, Real Estate at the Canada Pension Plan Investment Board (CPPIB), among other positions. She is past Chair, Risk Management and Alternative Investments Committee, CFA Society Toronto; past Programming Co-Chair, Commercial Real Estate Women (CREW) and past Treasurer of the Canada Green Building Council Greater Toronto Chapter.

Catherine holds the CFA designation, she has an undergraduate degree in Economics and Urban Studies from Queen's University, and a Master's in Economics and Finance from Simon Fraser University. She is a candidate for the Global Association of Risk Professionals Certificate in Sustainability and Climate Risk.

[www.realalts.com](http://www.realalts.com)

<http://www.investmentreview.com/blog/catherine-ann-marshall>

<https://www.linkedin.com/in/catherinemarshallcfa/>



## Matthew McCarten, Oxford Sustainable Finance Programme

Dr Matthew McCarten leads the Spatial Finance theme within the Oxford Sustainable Finance Programme. He is responsible for carrying out research at the intersection of sustainable finance and data science, with a particular focus on the integration of earth observation and machine learning into traditional financial analyses, as a part of the Spatial Finance Initiative. His research is focussed on assessing climate change related risks, opportunities and impacts using asset level data. His current work revolves around building asset level datasets and understanding the financial risk exposure to climate change for the Cement and Iron & Steel sectors.



## Ellie Mulholland, Commonwealth Climate and Law Initiative

Ellie Mulholland is the London-based Director of the Commonwealth Climate and Law Initiative, a non-profit legal research and stakeholder outreach project focused on the intersection of climate change and existing companies and securities laws. Ellie is an Australian-qualified lawyer and in 2017 was named in Australia's Lawyers' Weekly '30 Under 30' while working at Allens Linklaters.



She continues to practice law part time, advising private and public sector clients on climate risk governance and disclosure for commercial law firm MinterEllison. Ellie sits on the steering committees for the Oxford University Sustainable Law Programme and The Chancery Lane Project, as well as the Technical Working Group for the Climate Disclosure Standards Board. Ellie assisted the World Economic Forum with its effective climate governance initiative, authoring the legal chapter of the white paper that was launched at Davos in January 2019.

## Darius Nassiry, Climate Finance Advisors

Darius Nassiry specializes in renewable energy, international development, emerging markets, disruptive technologies, and sustainable finance. He serves as a senior advisor with Climate Finance Advisors, a management consulting firm based in Washington, DC, where he provides expertise on sustainable finance, climate disclosure and climate-related investments. He has served as an advisor to the Asian Development Bank (ADB), Climate Bonds Initiative, the German Corporation for International Cooperation (GIZ), and the Norwegian Investment Fund for Developing Countries (Norfund).



He has also served with the Overseas Development Institute (ODI), Rocky Mountain Institute, the Center for Global Development, the Global Green Growth Institute (GGGI), where he advised the director-general, and the Millennium Challenge Corporation (MCC), where he developed investment programs in Asia and launched the agency's climate change initiative.



Darius began his career as a U.S. diplomat in Mexico and Kenya. He holds a master's degree from Princeton University and a bachelor's degree from Carleton College.

<https://climatefinanceadvisors.com/>

<https://twitter.com/dnassiry>

## Dirk Röttgers, OECD

Dirk Röttgers is Policy Analyst of the OECD Centre on Green Finance and Investment at the OECD Environment Directorate. He has worked in the field of energy economics, climate mitigation policy and green infrastructure finance for more than 10 years, and more than 4 of those at the OECD. His current analytical work focusses on empirical analysis of institutional investment in sustainable infrastructure. As part of the OECD Centre on Green Finance and Investment, Dirk also regularly represents the OECD at high-level events and is responsible for organising OECD events on green finance policy.



Dirk holds a PhD in economics from the Leibniz University of Hanover and a master-level economics degree from the Georg-August University Göttingen.

<https://www.oecd.org/cgfi/>

## Susanne Schmitt, WWF-UK

Susanne is a conservation professional with more than 20 years' experience at the intersection of the fields of biodiversity, sustainable finance, geo-spatial intelligence, the extractives industries and sustainable natural resource management.

She is one of the founders of the geo-spatial WWF-SIGHT tool and approach. Following her innovative work on biodiversity and extractives, sustainable finance and conservation intelligence, Susanne is now focusing on developing spatial finance work for WWF-UK and the wider WWF network. Working closely with other members of WWF-UK's Sustainable Finance team and the Conservation Intelligence team, she advocates for greater use of geo-spatial and asset-level data and tools to support sustainable financial decision making that contributes to protecting and restoring nature. She holds a DPhil in Biogeography from the University of Oxford and a BA (Hons) in Geography and Economics from the School of Oriental and African Studies, University of London.





## Clarisse Simonek, Ossiam

Clarisse is an investment professional specialized in responsible investment, with executive and non-executive experience. She has worked for asset owners, fund managers and social enterprises across Europe and the Americas and is passionate about ventures that meaningfully combine profitability and sustainability at both the company and market level.



Clarisse is a Director and Head of Responsible Investment and Sustainability for the smart-beta investment firm Ossiam. She is a trustee at various social enterprises and charities, and helped set up a network to help young professionals become pension trustees. She is also the academic advisor for the CFA's ESG Investing certification and the co-author of its curriculum.

Previously, Clarisse was the Portfolio Manager at Local Pensions Partnership's (LPP) Investment Strategy, which advises trustees on asset allocation, and has oversight of asset classes and responsible investment/climate risk.

Clarisse holds a joint MBA-MSc with focus on corporate sustainability from HEC Paris / FGV and a Bachelor of Economics and Political Science from Swarthmore College. She also holds the Chartered Financial Analyst (CFA) and Certified Internal Auditor (CIA) designations.

<https://www.linkedin.com/in/clarissesimonek/>

## Caroline Sundin, MSCI

Caroline holds a M.Sc. in Environmental Engineering and Sustainable Infrastructure from the Royal Institute of Technology in Stockholm. After graduation she worked a year in research with integrated system analysis, mainly focusing on the water and agriculture sector. She later joined Carbon Delta, the Swiss Environmental Fintech start-up, which was acquired by MSCI last year and now forming the Climate Risk Center in Zürich. At MSCI, Caroline heads the project of the Asset Location Database, and also works on various geospatial analysis studies using the database.





## Jakob Thomä, 2° Investing Initiative

Jakob Thomä is Managing Director of the 2° Investing Initiative. He co-founded the 2° Investing network in New York (2015) and Berlin (2016) and manages the think tank's research on 2°C scenario analysis for financial institutions and companies.



Jakob led the development of the first 2°C scenario analysis tool for financial portfolios, which is now applied by more than 250 financial institutions worldwide. In addition, he leads the organisation's partnerships with a number of financial supervisors and governments, including as academic adviser to the Bank of England 2017-2018.

He holds a PhD in Finance from the Conservatoire National des Arts et Metiers in Paris. Jakob also teaches a green finance course at the School of Oriental and African Studies at the University of London.

<https://2degrees-investing.org/>

## Gabriel Thoumi, Planet Tracker

Gabriel is a CFA and FRM qualified research manager in debt, equity, and commodity markets. He brings over 15 years of experience with extensive technical knowledge on integrating scientific and ESG data into financial models to determine pricing signals and asset allocation strategies. He has led many successful global investment research programs and engagement strategies.



Gabriel serves as Director of Financial Markets at Planet Tracker, as well as chairman of the board of 2° Investing Initiative (U.S.) and adjunct finance lecturer at Johns Hopkins University.

## Nataliya Tkachenko, Oxford Sustainable Finance Programme

Nataliya is a Research Associate in Sustainable Finance at the Smith School of Enterprise and the Environment, University of Oxford. She obtained her PhD in Data Science from the University of Warwick, where she researched the role of semantic drift in unstructured web resources for event detection, segmentation and differentiation.



Her current research interests are focused on AI for detection and construction of sustainable assets as a novel category of investment objects and conservation finance initiatives.

<http://linkedin.com/in/nataliya-tkachenko-b5ab8324>

<https://twitter.com/FloodSmartCity>

## Luke Wakeling, Baringa Partners

Luke Wakeling is the methodology lead within the modelling team of Baringa Partner's Climate Change practice; the Baringa Climate Change Model quantifies the impact of transition & physical factors on the earnings & value of companies and financial assets under different climate pathways.



Luke is also a power markets expert, with experience in transaction advisory and long-term system modelling. Prior to joining Baringa Partners, Luke worked in oil & gas consulting where he supported extension and refinement of the Wood Mackenzie, Oil & Gas Carbon Risk model.

<https://www.baringa.com/en/climatechangescenariomodel/>

## Dieter Wang, World Bank

Since 2018, Dieter has been consulting the World Bank on sustainable finance, greening the financial sector and environmental stress tests. At the Long-Term Finance team of the Finance, Competitiveness & Innovation Global Practice, he is exploring alternative data sources, such as remote sensing or weather station data, and contributes to discussions with public and private sector partners.



In his PhD on financial econometrics he is researching the empirical link between sovereign yield curves and environmental risks.

<http://dieter.wang>

<http://linkedin.com/in/dieterwang>

## Scott Weichenthal, McGill University

Dr. Weichenthal is an Assistant Professor in the Department of Epidemiology, Biostatistics, and Occupational Health at McGill University in Montreal, Canada. His current research is focused on developing deep learning models to estimate environmental exposures (e.g. air pollution, heat, noise) on both a local and global scale using non-traditional data sources such as images and audio data.



<http://www.aiforearth.ca/>

<https://scottweichenthal.weebly.com/>

<https://twitter.com/WeichenthalS>

### **Lisa Wong, Affirmative Asset Management**

Lisa Wong is the UK Verification and Impact team lead at Affirmative Investment Management, a dedicated impact fixed income fund manager. AIM's Verification and Impact team has deep expertise in verifying impact bonds against AIM's mission to support the Paris Agreement and/or Sustainable Development Goals and impact measurement and reporting.

Previously she was at Nikko Asset Management focusing on emerging markets and green bond research and Citi in the Inclusive Finance group. She is a World Economic Forum Global Shaper. Lisa holds a MA (Cantab) from the University of Cambridge and a dual-degree Master of Public Administration (MPA) joint awarded by the London School of Economics and Columbia University.



<https://affirmativeim.com/>

### **Matthew Wright, Impax**

Matt is part of the Listed Equities team at Impax, and leads on research and engagement on the topic of physical climate risk. Matt joined Impax in the summer of 2019, building a model enabling the assessment of exposure and vulnerability to several climate hazards at an asset, company and portfolio level over the next few decades. This involves the use of geospatial analysis, the application of global and regional climate models and the integration of asset level financial data. At Impax, Matt also supports Impax's impact investment work, sustainability research and the general investment process.



Matt has an MSc in Environmental Technology and a BSc in Geophysics from Imperial College London, and has previously worked as a Business Analyst and a co-founder for a start-up seeking to integrate climate change into the financial decision making process in 2018.

## Partners of the Spatial Finance Initiative

### Oxford Sustainable Finance Programme

The Oxford Sustainable Finance Programme at the University of Oxford Smith School of Enterprise and the Environment is a multidisciplinary research centre working to be the world's best place for research and teaching on sustainable finance and investment. We were established in 2012 to align the theory and practice of finance and investment with global environmental sustainability.

We research environment-related risks, impacts, and opportunities across different sectors, geographies, and asset classes; how such factors are emerging and how they positively or negatively affect asset values; how they might be interrelated or correlated; their materiality (in terms of scale, impact, timing, and likelihood); who will be affected; and what affected groups can do to pre-emptively manage risk. Since our inception we have conducted pioneering research on stranded assets and continue to undertake significant research on the topic.

The production of high-quality research on the materiality of environment-related factors is a necessary, though insufficient, condition for these factors to be successfully integrated into decision-making. Consequently, we develop the data, analytics, frameworks, and models required to enable the integration of this information.

We are pioneers and advocates of 'spatial finance', a term we have coined that refers to efforts to bring geo-spatial capabilities into financial analysis. As such we are developing new asset-level datasets through data science and combining these with new approaches to spatial analysis, scenarios, and stress tests.

We also research barriers to the adoption of practices related to sustainable finance and investment. This includes the role of governance, norms, behaviour, and cognition, as well as policy and financial regulation in shaping investment decisions and capital allocation.

The Oxford Sustainable Finance Programme is based in a world leading university with a global reach and reputation. We work with leading practitioners from across the investment chain (including actuaries, asset owners, asset managers, accountants, banks, data providers, investment consultants, lawyers, ratings agencies, stock exchanges), with firms and their management, and with experts from a wide range of related subject areas (including finance, economics, management, geography, data science, anthropology, climate science, law, area studies, psychology) within the University of Oxford and beyond.

### The Alan Turing Institute

The Alan Turing Institute, headquartered in the British Library, London, was created as the national institute for data science in 2015. In 2017, as a result of a government recommendation, we added artificial intelligence to our remit.

Our mission is to make great leaps in data science and artificial intelligence research in order to change the world for the better. Research excellence is the foundation of the Institute: the sharpest minds from the data science community investigating the hardest questions. We work with integrity and dedication.



Our researchers collaborate across disciplines to generate impact, both through theoretical development and application to real-world problems. We are fuelled by the desire to innovate and add value.

## Green Finance Institute

Established in 2019, the Green Finance Institute (GFI) is an independent, commercially focused organisation, supported by HM Treasury, the Department for Business, Energy and Industrial Strategy and the City of London Corporation.

As the UK's principal forum for public and private sector collaboration in green finance, we are uniquely placed to accelerate the domestic and global transition to a zero-carbon and climate-resilient economy through the mobilisation of capital.

We convene and lead mission-led coalitions, made up of networks of dynamic decision makers, to identify and unlock barriers to deploy capital at pace and scale towards impactful, real-economy outcomes.

## Satellite Applications Catapult

The Satellite Applications Catapult is an independent innovation and technology company, created by Innovate UK to drive economic growth through the exploitation of space. We work with businesses of all sizes to realise their potential from space infrastructure and its applications.

Based in Harwell, Oxfordshire, the Catapult was established in May 2013 as one of a network of centres to accelerate the take-up of emerging technologies and drive economic impact for the UK. We are a not-for-profit research organisation which is registered as a private company limited by guarantee and controlled by its Board.

The world is in the early stages of a new digital revolution, with space technology increasingly at its heart. Satellites are critical infrastructure, as fundamental to the global economy as the energy grid or internet, and space is a UK success story. In 2016, the industry was worth £13.7bn, and working with the wider UK space community and the UK Space Agency we will help grow this to £40bn by 2030.

---

## 2° Investing Initiative

The 2° Investing Initiative (2DII) is an international, non-profit think tank working to align financial markets and regulations with the Paris Agreement goals.

Working globally with offices in Paris, New York, Berlin, and London, we coordinate the world's largest research projects on climate metrics in financial markets. In order to ensure our independence and the intellectual integrity of our work, we have a multi-stakeholder governance and funding structure, with representatives from a diverse array of financial institutions, regulators, policymakers, universities, and NGOs.