

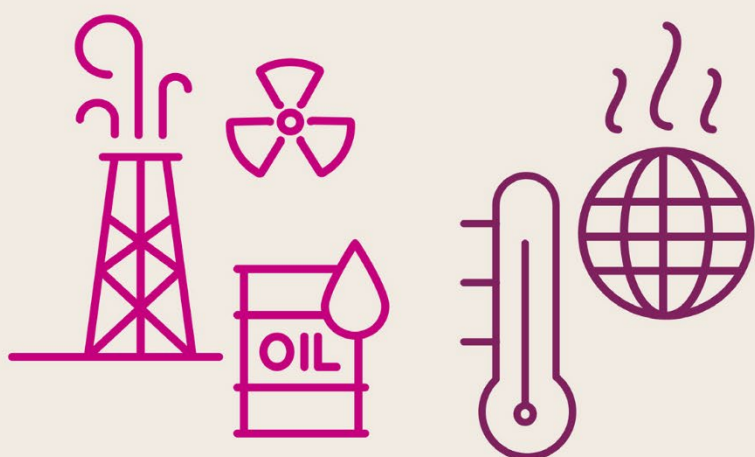


Climate Finance & Risk 2025

EMERGING CHALLENGES, POLICIES AND FINANCIAL STRATEGIES

10-12 December 2025

Macquarie University City Campus, Level 24, 123 Pitt Street, Sydney CBD



PROGRAM AND SPEAKERS

Day 1 (Wednesday, 10 December 2025)

9:15-9:45am	Registration
9:45-10:00am	Opening and welcome Vito Mollica , Deputy Dean Research and Innovation, Macquarie Business School Pavel Shevchenko (Co-Director of the Centre for Emerging Risks, Macquarie University) Stefan Trück (Director of the Centre for Transforming Energy Markets, Macquarie University)
10:00-10:40am	Martina Linnenluecke (University of Technology Sydney) Mona Mashhadi Rajabi (University of Technology Sydney) <i>Informed trading and the fossil fuel industry's influence over UN climate meetings</i>
10:40-11:20am	Andrea Macrina (University College London) <i>Climate-Contingent Convertible Bonds Provide Financial Agility and Resilience</i>
11:20-12:00	Yongyang Cai (The Ohio State University) <i>Long Coalition Leads to Shrink? The Roles of Tipping and Technology-Sharing in Climate Clubs [online]</i>
12:00-1:00pm	Lunch
1:00-1:40pm	Stefan Trück (Macquarie University) <i>Financial Analysis of Solar and Battery Power Purchase Agreements</i>
1:40-2:20pm	Zsuzsanna Cserekyei (RMIT University) <i>Quantifying the effect of energy policies on electricity generation investments in Australia's National Electricity Market</i>
2:20-3:00pm	Derek Bunn (London Business School) <i>Unintended carbon emissions from electricity storage operations</i>
3-3:30pm	Afternoon tea
3:30-4:10pm	Qihe Tang (University of New South Wales) <i>Pricing Carbon Emission Permits under the Cap-and-Trade Policy</i>
4:10-4:50 pm	Christina Nikitopolous (University of Technology Sydney) <i>Attribute associations of municipal green bond yield spreads: A demand perspective</i>
4:50-6pm	Reception drinks (level 24, 123 Pitt Street)

Day 2 (Thursday, 11 December 2025)

9:30-10:00am	Arrival
10:00-10:40am	Eric Ofosu-Hene (Leeds Beckett University) Spatial-temporal modelling of excess heat related mortality in the United Kingdom by age, gender and deprivation via the KGR-Skater framework [online]
10:40-11:20am	Zili Yang (Binghamton University) Common Climate Actions vs. Differentiated Carbon Pricing: the Social Cost of Carbon (SCC) Formation Based on the Lindahl Equilibrium [online]
11:20-12:00	Richard Matear (CSIRO Australia) <i>Assessing Australia's Future Climate Risks, a summary of the National Climate Risk Assessment</i>
12:00-1:00pm	Lunch
1:00-1:40pm	Pasin Murapanthorn (Maejo Univeristy) <i>Do Carbon Emissions Affect Firm Value? Panel Evidence from Thailand's Capital Market [online]</i>
1:40-2:20pm	Matteo Malavasi (UNSW Business School) <i>Climate Risks and Their Influence on Climate Beliefs and Actions Across Australia</i>
2:20-3:00pm	Tanja Tippett (University of Cape Town) <i>Climate-economy models impacted by stochastic uncertainty</i>
3:00-3:30pm	Afternoon tea
3:30-4:10pm	Chi Truong (Macquarie University Business School) <i>Seasonal Volatility and Stochastic Two Factors Model - Implications for Intermittent Renewable Energy Project Evaluation</i>
4:10-4:50pm	Gareth Peters (University Of California Santa Barbara) Marta Campi (University of Zurich) <i>Graph Signal Processing: Tensor Valued Signal Reconstruction for Green Bond Yield Curve Reconstruction [online]</i>
	Hadi Sehatpour (University of Technology Sydney) [poster presentation] <i>Municipal Green Bond Spread Sensitivity to Macro-Financial and Environmental Conditions</i>

Day 3, Industry Day (Friday, 12 December 2025)

9:30-10:00am	Arrival
10:00-10:40am	Brad Archer (CEO, Climate Change Authority, Australian Government agency) <i>Federal climate adaptation and resilience policy: where are we now and where to from here?</i> [online]
10:40-11:20am	Kate Simmonds (Investor Group on Climate Change) <i>Valuing climate risk and resilience in investment portfolios</i>
11:20-12:20pm	Panel Discussion: Climate change risks and opportunities Rade Musulin (Principal at Finity Consulting, Australia) Adam Creighton (Chief Economist at the Institute of Public Affairs) Richard Matear (CSIRO Australia) Graham Sinden (Head of Climate Risk, Australian Prudential Regulation Authority) Moderator: Andrea Macrina
12:20-12:25pm	Group photo of speakers (next to the conference room)
12:20-1:20pm	Lunch
1:20-2:00pm	Daisuke Murakami (Institute of Statistical Mathematics, ROIS, Japan) <i>Gridded Shared Socioeconomic Pathways based on spatial econometric model with the rank-size rule</i> [online]
2:00-2:40pm	Kylie Anne Richards (Director at Australian Future Fund) <i>From term structure to portfolio: an AI-powered framework for green bond spread analysis and investment strategies</i>
2:40-3:10pm	Afternoon tea
3:10-3:50pm	Witsanu Attavanich (Kasetsart University) <i>Impacts of Climate Change on Thailand's Agriculture</i> [online]
3:50-4:30pm	Rade Musulin (Principal at Finity Consulting, Australia) <i>Navigating Extreme Uncertainty: How Financial Institutions Must Adapt to Succeed</i>
4:30-6pm	Closing remarks and Reception drinks

Climate Finance and Risk 2025	
Date	10-12 December 2025
Venue	Macquarie University City Campus Level 24, 123 Pitt Street Angel Place Sydney CBD
Participation	in-person or zoom

**CLIMATE FINANCE AND RISK 2025**

This workshop series was successfully hosted in the Institute of Statistical Mathematics, Japan in 2023 and 2024. This year, it is hosted by the Centre for Emerging Risks and Centre for Transforming Energy Markets in Macquarie University Business School in Sydney.

OVERVIEW

Climate change stands as one of the most daunting global challenges we face today. With palpable consequences on society, the economy, and our environment, its looming impacts are anticipated to intensify. Indeed, it poses a significant threat to the stability and growth of the global economy. Statistics, Actuarial and Financial Mathematics play a crucial role in mitigating the effects of climate change on the public. Actuarial and Financial Mathematics provide tools for assessing and managing risk, while Statistics, which forms the basis of machine learning and data science, offers methods to model, assess, and monitor climate processes. This workshop aims to bring together experts in mathematics, statistics, and environmental studies; industry practitioners; and regulators to explore the challenges and opportunities of climate change.

Organising committee

Prof Pavel Shevchenko, Chair (Macquarie University)
 Prof Stefan Trück (Macquarie University)
 Prof Tomoko Matsui (Institute of Statistical Mathematics, Japan)
 Prof Gareth W. Peters (University of California Santa Barbara)
 Prof Andrea Macrina (University College London)
 Dr Eric Oforu-Hene (Leeds Beckett University)
 Dr Pasin Murapanthorn (Maejo University, Thailand)

WHO SHOULD ATTEND

- Climate risk analysts
- Environmental scientists
- Data, analytics and modelling specialists
- Regulators and policy advisors
- Academics in economics, finance, mathematics, statistics
- Researchers across sustainability and ESG
- Finance and investment experts
- Actuaries and insurance professionals



<https://sites.google.com/view/climate-finance-risk-2025/home>

EMERGING RISKS RESEARCH CENTRE



Macquarie University Emerging Risks Research Centre delivers authoritative and interdisciplinary solutions for society and decision-makers facing novel and complex risks with global impact.

ABOUT US

Emerging risks are newly developing or evolving risks that are characterised by unique features of novelty, uncertainty, complexity and significant global impacts, often arising from: cybersecurity, digitalization, disruptive technologies, environmental changes, global pandemics, healthcare management

The centre's mission is to:

- advance the understanding, identification, assessment, and management of emerging risks through innovative and theoretically grounded approaches
- foster interdisciplinary collaboration
- share knowledge to empower stakeholders in effectively preparing for, managing, and mitigating emerging risks

OUR RESEARCH FOCUS

- Banking, finance and asset pricing
- Behavioural economics and financial literacy
- Climatic change and catastrophic risks
- Complex industry and corporate issues
- Cyber risk
- Energy and utility markets
- Insurance and risk analysis
- Regulation and government policy
- Superannuation

Find out more



TRANSFORMING ENERGY MARKETS RESEARCH CENTRE



For energy market stakeholders and decision makers, the Transforming Energy Markets Research Centre promotes world-leading interdisciplinary research that facilitates the smooth transition of existing, evolving and new energy markets to a decarbonised future.

ABOUT US

We're all about the redesign of the entire energy system. From the current structure of wholesale electricity markets, through to the creation and design of new markets and the integration of new energy sources and technologies, TEM research will light the path forward.

Drawing on interdisciplinary expertise in economics and finance, engineering, and law, TEM will investigate and illuminate options for change for energy market stakeholders and decision-makers as we address one of society's greatest challenges. From the inclusion of carbon credit units to the integration of new energy sources and technologies, such as hydrogen or the use of smart meters and distributed energy systems, energy markets will undergo rapid transformation as the economy decarbonises. TEM promotes interdisciplinary research on energy markets design, analytics, regulation, and innovation.

STRATEGIC PRIORITIES

- Energy market design and analytics
- Energy market regulation and acceptability
- Transformative energy technologies
- Carbon Emissions, Capture, Storage, Credits, and Markets

Find out more



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