



The conference is the 4<sup>th</sup> edition of a yearly event co-organized by Institut Louis Bachelier and Banque de France, with the participation of Finance For Tomorrow and the Institute for Climate Economics -I4CE-.

The objective of the conference is to bring together academics, finance practitioners and regulators, to discuss together research issues related to the integration of climate risks (more generally environmental issues) into macro-economic modelling/forecasting and into the risk assessment of the financial sector.

The 25 November 2019 will touch upon a number of key research areas as identified, for instance, in the annex 2 of the NGFS technical document entitled 'Macroeconomic and financial stability/Implications of climate change, July 2019' that are related to data gaps, macro-modelling forecasting and uncertainties, macro stress-testing and the mispricing of assets.

*REGISTRATION REQUIRED AND SUBJECT TO CONFIRMATION. LIMITED SEATS*

*Please note that the conference will be held in English.*

**8:45-9:10** Registration and coffee

Moderator for the event: **Stéphane Voisin**, Green & Sustainable Finance Program –The Green Datalab- The Climate Chain, Institut Louis Bachelier

### 9.20-9.30 Opening by host

Speaker: **Denis Beau**, Deputy Governor, Banque de France

### 9.30-9.45 Bridging the data gaps for an efficient analysis: the use of climate data for the financial sector

Speaker: **Peter Tankov**, ENSAE ParisTech, Paris-Saclay University, Institut Louis Bachelier, The Green & Sustainable Finance Program

'Climate Data for Physical Risk Assessment in Finance', Alexis Tantet and Peter Tankov, (September, 2019)

*The paper discusses what climate data are necessary to evaluate some dimension of physical climate risks, namely the type, frequency and severity of expected climate hazards and introduces some guidelines to help select a dataset for that purpose.*

### 9.45-10.25 The issue of the mispricing of climate risks in financial markets: the case of sovereign bonds

Speaker: **Irene Monasterolo**, Vienna University of Economics and Business

'A climate risk assessment of sovereign bonds' portfolio, Stefano Battiston, Irene Monasterolo (2019)

*Starting from the observation that traditional financial pricing models cannot accommodate the deep uncertainty that characterize climate risks, the authors develop a novel climate risk assessment methodology that contributes to fill the gap. They introduce climate change in the calculation of sovereign bond spreads considering countries' debt conditions and the carbon-intensity of their revenues with a view to support investors and financial supervisors in the understanding of climate-related risks and strategies for their mitigation.*

### 10.25-10.45 Coffee break

### 10:50-11:30 Sharing experience on methodological and practical challenges: the Netherlands's stress-test exercise

Speaker: **Edo Schets**, DNB, Member of the Workstream 2 of the Network for greening the financial system –NGFS–

'The heat is on: a framework for Measuring Financial Stress Under Disruptive Energy Transition Scenarios', Robert Vermeulen, Edo Schets, Melanie Lohuis, Barbara Kölbl, David-Jan Jansen and Willem Heeringa (February 25, 2019)

*The paper presents a comprehensive framework for analyzing financial stress under scenarios with a disruptive transition to a low-carbon economy. The approach is a 'top down approach' starting with*

*the definition of stress scenarios using two dimensions: climate policy and energy technology, then modelling their macro-economic and industry-specific implications and finally assessing their financial implications for the Dutch financial institutions.*

11:30-12:10 Integrating technological change into the modelling of climate macro-economic impacts

Speaker: **Jean-François Mercure**, Exeter University and Cambridge Centre for Energy, Environment and Natural Resource Governance (C-EENRG)

'The macroeconomic impact of stranded fossil fuel assets', J.-F. Mercure, H. Pollit, J.E. Vinuales, N. R. Edwards, P.B. Holden, U. Chewpreecha, P. Salas, I. Sognnaes, A. Lam & F. Knobloch (2018) or more recent work

*The authors use an integrated global-economy environment model to study the macro-economic impact of stranded fossil-fuel assets (SFFA), the attached distributional effects with winners and losers. The paper shows how 'stranding' results not only from climate policy but also from ongoing technological transition.*

12:10-13h15 Lunch Break

13h20-13h30 Introduction of the afternoon session

12:10-13h15 Lunch Break

13h20-13h30 Introduction of the afternoon session

Speaker: **Pierre Ducret**, Chair of Finance for Tomorrow, Chair of I4CE –Institute for Climate Economics

13:30-14:10 Uncertainties, carbon pricing and green investments

Speaker: **Christian Gollier**, General Director, Toulouse School of Economics, co-author of several IPCC reports and chair of the European Association of Environmental and Resource Economists –EAERE

'The cost-efficiency carbon pricing puzzle' (July, 19, 2019)

*The paper discusses that future social and private benefits of most investments in renewable energy are uncertain by nature and touches upon how uncertainties affect the efficient rate of growth of carbon price and what they mean in terms of investment yields for investors.*

14.10-14.55 Banque de France Young Researcher Prize for Green Finance and Panel with selection committee's members on green finance research advances/gaps

By **Ivan Odonnat**, Deputy General Director, DG Financial Stability and Operations, Banque de France

With members of the selection committee: **Christian Gollier, Ben Caldecott, Peter Tankov.**

*The Banque de France has decided in 2018 to fund a Prize for young researchers aimed at advancing the frontiers of knowledge in Green Finance. The conference will host, for its 2019 edition, the award session of this prize.*

*The conference will profit from the expertise of the members of the selection committee to touch upon a few research issues relevant for the appropriation of climate risks by the financial sector.*

15:00-15.25 Coffee Break

15.30-16.45 Policy panel: making the integration of climate risk concrete for the financial sector

Moderator: **Michel Cardona**, Senior Advisor, Financial Sector, Risks and Climate Change, I4CE

**Mr Paul Hiebert**, Head of Systemic Risk and Financial Institutions Division, European Central Bank – ECB-, co-chair of the ESRB Project team on climate risk monitoring.

**Dr Ma Jun**, Director of the Center for Finance and Development at Tsinghua University, Member of the Monetary Policy Committee of the People's Bank of China (PBOC), NGFS Workstream 1 Chair

**Morgan Després**, Head of Secretariat, Network for greening the financial system –NGFS-, Deputy Director, Financial Stability Department, Banque de France

**Martin Spolc**, Head of the Sustainable Finance and Fintech unit, European Commission's Directorate General for Financial Services

*The policy response to climate change is a main factor for the transition. The central banks and the supervisory authorities are public authorities that can help the financial sector play their part in the transition, be it imperfectly. The panel will allow leading institutions to share information on their policy and agenda in this field.*

16.45-16.55 Concluding remarks

**Jean-Michel BEACCO**, CEO at Institut Louis Bachelier