

Global scenario and other science issues and opportunities for climate-related finance, investment, and transition risk assessment: Session 1, Part 1

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Snowmass Workshop 2019
Snowmass, CO

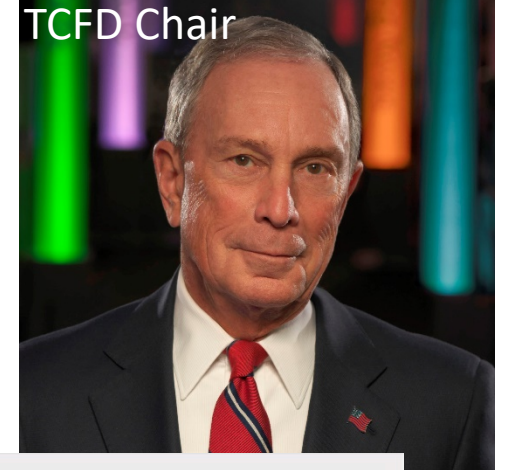
Monday, July 23, 2019

Task force on Climate-related Financial Disclosures TCFD

- Climate finance issues are not new— development banks, the insurance industry, etc.
- Central bank concern trace back to 2015 and a speech by Mark Carney, Chair of the Financial Stability Board (FSB) and Governor of the Bank of England (BoE) at the time of COP 21.
- **Motivated by concerns for financial stability following the Great Recession of 2008.**
- Mark Carney got the G20 Finance Ministers and Central Bank Governors to ask the Financial Stability Board (FSB) to form the Task Group on Financial Disclosure (TCFD)
- The TCFD was chartered by the FSB in 2016
- Its job is to monitor and make recommendations about the global financial system particularly with regard to climate-related financial risk and disclosure.



Michael Bloomberg



The Task Force's 32 international members, led by Michael Bloomberg, include providers of capital, insurers, large non-financial companies, accounting and consulting firms, and credit rating agencies.



The TCFD expanded from 32 to 38 members in 2018

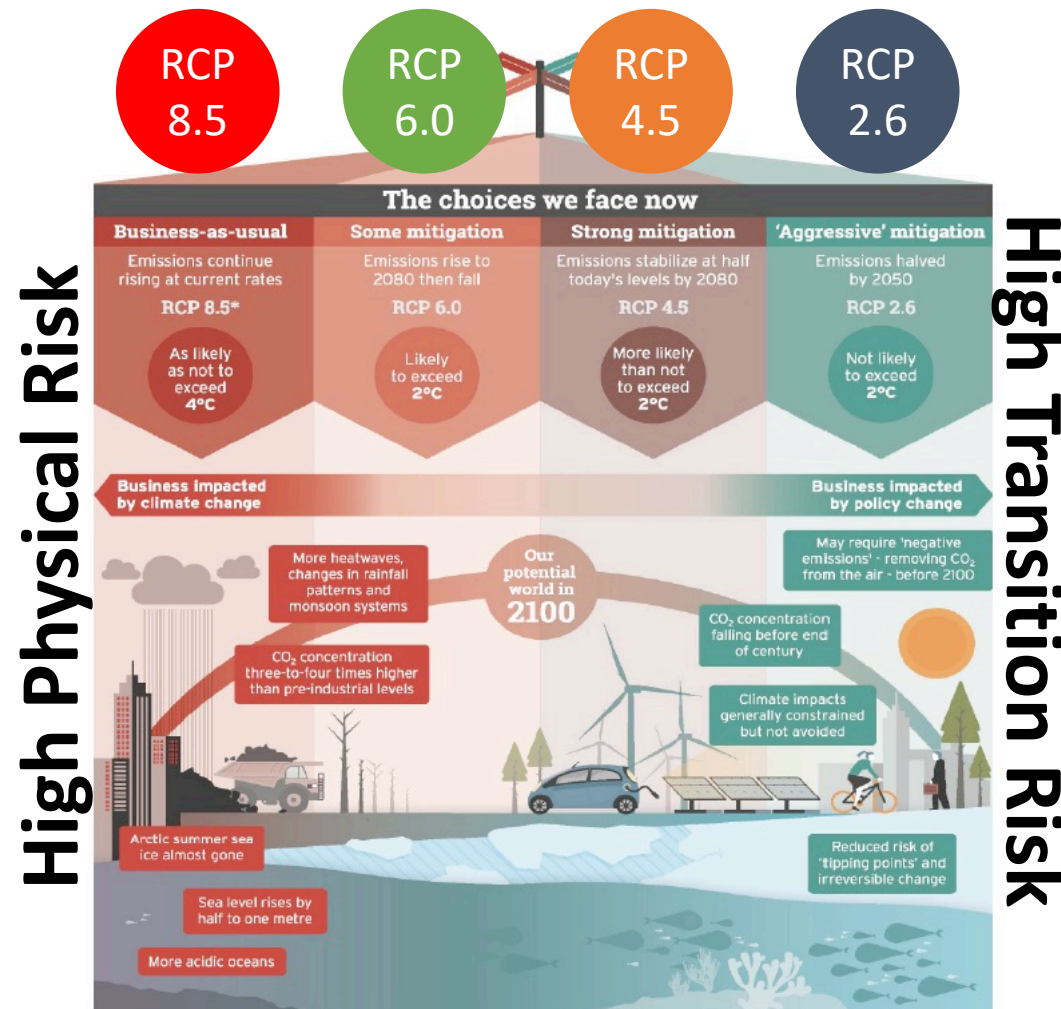


Information needs for climate-related risk evaluation

- Information about the **Physical Risks** presented by climate change
 - Relevant risks will vary by entity
 - Not every company is exposed to sea level rise or crop failure, though supply chains might be
- Information about the **Transition Risk** (policy and technology risks)
 - Climate policy could strand assets, or change technologies and infrastructure

The TCFD references four **Representative Concentration Pathways (RCPs)**

4 climate forcing scenarios, developed for the climate modeling community, to explore a range of climate change futures



*The four RCP (Representative Concentration Pathway) scenarios each project a certain amount of carbon to be emitted by 2100 and, as a result, lead to a different amount of human-driven climate change. Climate change will continue after 2100 and elevated temperatures will remain for many centuries after human CO₂ emissions cease.

Source: Intergovernmental Panel on Climate Change, Fifth Assessment Report (AR5), Climate Change: Action, Trends, and Implications for Business, Cambridge University Press, 2013. <http://www.cisl.cam.ac.uk/business-action/low-carbon-transformation/ipcc-climate-science-business-briefings/climate-science>.

The TCFD & BoE Conference on Climate Scenarios

- October 31-November 31, 2017, London
- Discussed scenario analysis and how it can help companies assess climate risks in their strategic planning and risk management processes.
- IEA Scenarios
- IAMC scenarios

Elmar Kriegler

PIK, Co-Chair of the IAMC Finance Scientific Working Group

Christophe McGlade

Oil & Gas Analyst, International Energy Agency (IEA)



Seb Henbest

Head of Europe, Middle East & Africa, Bloomberg New Energy Finance

Some initial use of Integrated Assessment Models to assess climate-related risk

- Oliver Wyman was commissioned by the UN Environment Finance Initiative (“UNEP FI”) Working Group, to develop a pilot approach for climate-related transition risks and opportunities for 16 banks’ corporate credit portfolios.

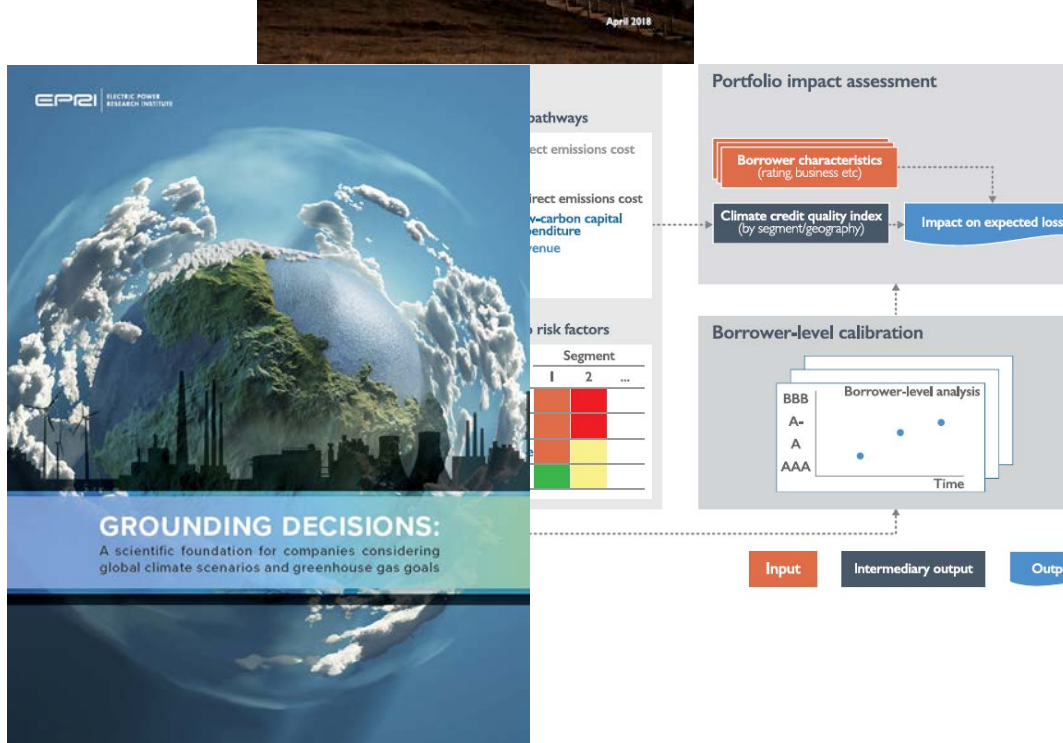


Box 3: Translating scenarios from two of the world’s leading transition scenario models
From PIK (REMIND) and IIASA (MESSAGEix-GLOBIOM)

- The analysis starts with a transition scenario with IAM results from PIK & IIASA (CD-LINKS)

■ EPRI: Grounding Decisions

- Used IAMs results to inform transition risk and goal setting



The 16 Banks

- ANZ,
- Barclays,
- BBVA,
- BNP Paribas,
- Bradesco,
- Citi,
- DNB,
- Itaú,
- National Australia Bank,
- Rabobank,
- Royal Bank of Canada,
- Santander,
- Société Générale,
- Standard Chartered,
- TD Bank Group,
- UBS

Central Banks and Supervisors Network for Greening the Financial System (NGFS)



1) Supervision (WS1 – chaired by Ma Jun from the People’s Bank of China):

2) Macro-financial (WS2 – chaired by Sarah Breeden from the Bank of England):

3) Mainstreaming green finance (WS3 – chaired by Joachim Wuermeling from the Deutsche Bundesbank):



Lessons from the interactions

- The central bank community has a deep knowledge and understanding of the financial world, and particularly risk assessment and management.
- Relatively less understanding of integrated assessment models and scenarios for energy, economy, land use and long-term climate goals.
- Scenario development works very well when the users and the producers jointly develop the scenarios, e.g. the MCS or climate scenarios.



Source: <https://www.frbatlanta.org/about/atlantafed/branches/miami.aspx>

Broader space of different but related activities considering global scenarios



XLI Global Change Forum
MIT Samberg Conference Center
Cambridge, MA • March 26-28, 2018

Science-Based Targets: Rationale and Challenges PRELIMINARY AGENDA



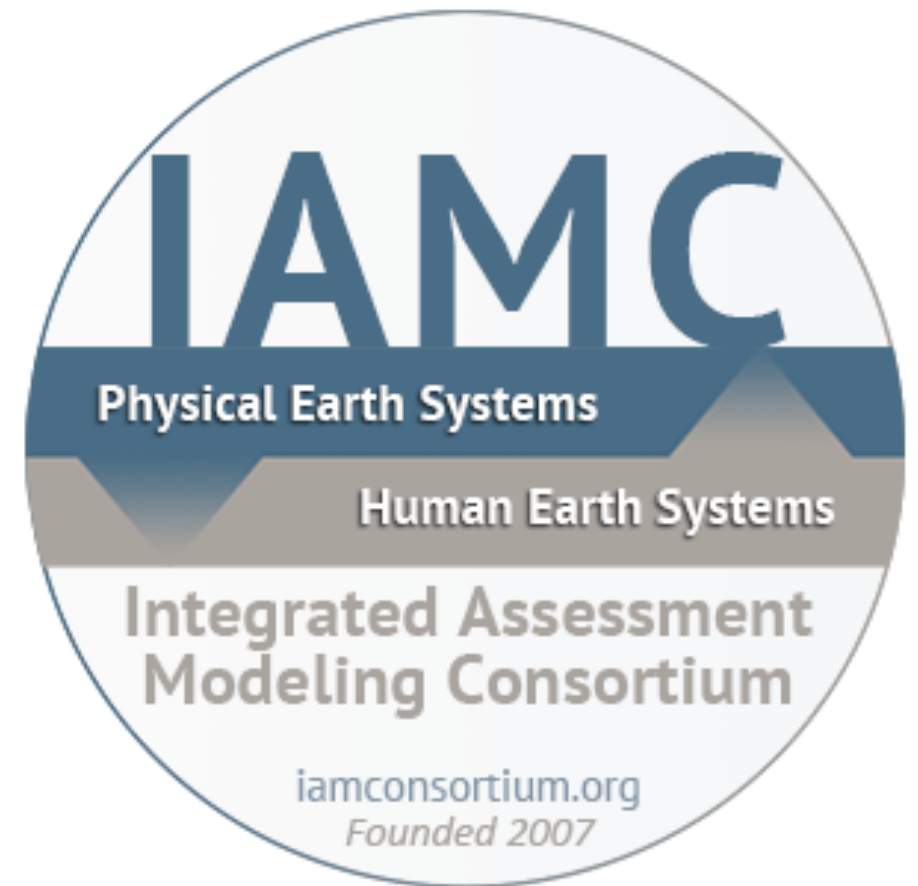
SCIENCE
BASED
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

The challenges for IAMs

- The role of models/scenarios? Which models?
- What data to produce? (*prices, quantities, markets*)
- What granularity? (*temporal, spatial, sectoral, technological*)
- What assumptions? (*socioeconomics, technology, policy, climatology*)
- Transparency and independence requirements (*standards, reporting conventions, rate of update and refresh*)
- What Institutional arrangements? (*how to make data available; process management*)
- What legal arrangements (*liability?*)
- What business model?

IAMC has created a Scientific Working Group Scenarios for Climate-related Financial Analysis



<http://www.globalchange.umd.edu/iamc/scientific-working-groups/financial-analysis/>

This Meeting's Contributions

- Build off last year's initial Snowmass discussion
- Summarize and advance relevant science, identifying opportunities, limitations, and research priorities
- Communicate learnings to advance dialogue and scientific research with a journal article planned that draws on meeting insights and participants
- Recognize that the climate-related finance, investment, and transition risk assessment community is highly diverse and will need products tailored to their specific needs.

Old versions

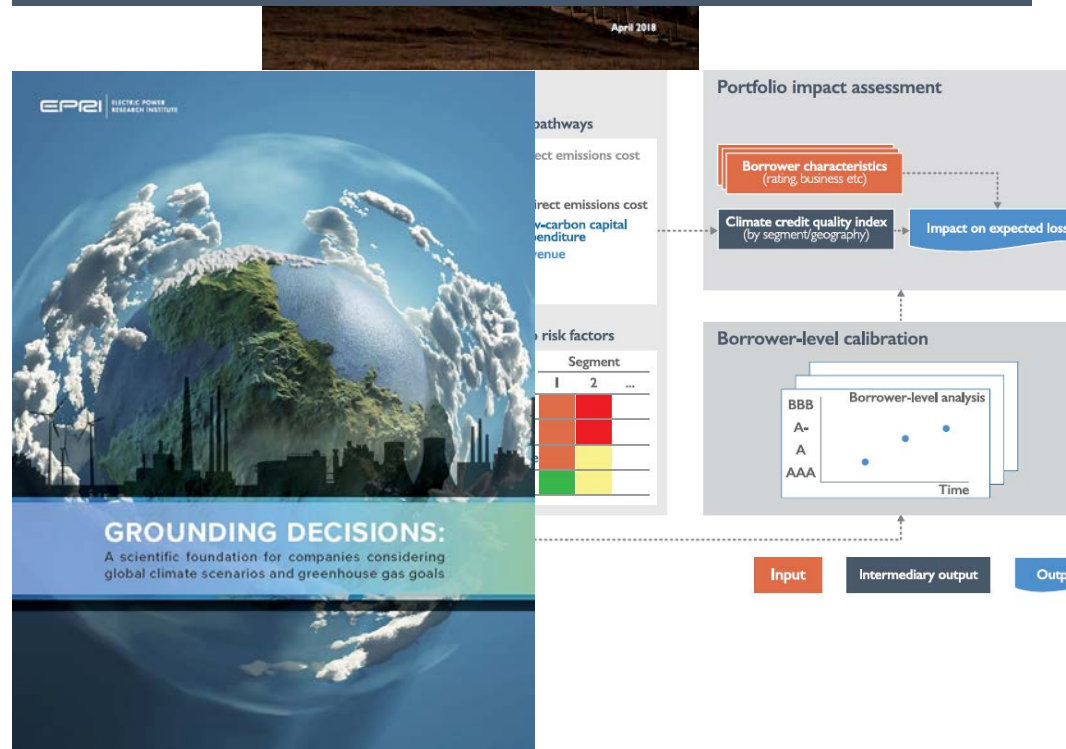
Some initial use of Integrated Assessment Models to assess climate-related risk

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- The analysis starts with the **transition scenario**
 - IAM results from PIK & IIASA (CD-LINKS)
- **EPRI: Grounding Decisions**
 - Used IAMs results to inform corporate transition risk



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