

**MAKE THE ECONOMIC CASE FOR THE PARIS AGREEMENT: MODELLING THE
MACROECONOMIC CONSEQUENCES OF CLIMATE CHANGE ACTION**

*Workshop organised in the context of the OECD project on Growth, Investment and the Low-carbon
Transition: Constructing a Climate-resilient Future for the G20*

WORKSHOP PROGRAMME

Paris, 24-25 November

Day 1: 11h30-18h45

Day 2: 9h30-18h15

Châteaufort City Monceau Rio, 4 Place Rio de Janeiro, 75008 Paris

In the Paris Climate Agreement, the international community committed to the objective of limiting global warming to well below 2°C or even 1.5°C above pre-industrial levels by peaking global greenhouse gas emissions (GHG) as soon as possible and to reach net-zero GHG emissions in the second half of this century.

Meeting this objective requires near-term policy action to set economies on low-carbon pathways in order to avoid locking in carbon-intensive infrastructure. These pathways will need to include policies to price greenhouse gas emissions as well as investment in low-carbon technology and infrastructure. Climate change adaptation will also require (additional) investment to increase the resilience of the natural and economic systems to shocks emanating from climate change. Policies to transform urbanisation and land-use patterns are also critical.

At the same time, the impact of policies to boost investment in low carbon pathways should be seen in the broader current macroeconomic context of persistent low economic growth, low investment and low interest rates. This is particularly the case for OECD countries, many of whom are stuck in a low-growth trap and subdued investment. For the emerging economies, the challenge is to catch-up with high-income levels in a sustainable fashion.

In the context of the upcoming German G20 Presidency, the OECD is looking at ways on how the potential for growth could be unleashed while transitioning to a lowcarbon and climate resilient economy. The results of this analysis will be presented in an OECD study on *Growth, Investment and the Low-carbon Transition: Constructing a Climate-resilient Future for the G20*. The aim of this workshop is to provide insights on the near and long-term macroeconomic impacts of climate mitigation and adaptation actions across different G20 economies and to show how key impacts can be included in a macroeconomic model. The workshop will also explore how policies can help sustain strong economic growth while engaging in low-emission and climate-resilient pathways, and how these pathways impact broader measures of human wellbeing.

24 NOVEMBER

Welcome from 11.30am

Introductory remarks by Christian Kastrop, Director, Policy Studies Branch, Economics Department of the OECD and Anthony Cox, Deputy Director, Environment Directorate of the OECD. 12h30-12h50.

Lunch 12h50-13h50

Introductory remarks by Carolin Zerger, Policy Adviser, Division on International Climate Finance, International Climate Initiative, German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety. 13h50-14h00.

Session 1: Macroeconomic impacts of climate change mitigation policies 14h00-16h15. Chair: Anthony Cox, Environment Directorate, OECD.

- **Meeting the 1.5° climate target - an assessment using the E3ME-FTT model.** *Presentation by Richard Lewney, Cambridge Econometrics. Discussant: Ruben Bibas, Environment Directorate, OECD. 14h00-14h30.*
- **Using the Oxford Economic Model to model the impacts of key climate mitigation action.** *Presentation by Keith Church, Oxford Economics. Discussant: Annabelle Mourougane, Economics Department, OECD. 14h30-15h00.*
- **Modelling macroeconomic consequences of green investment pathways.** *Presentations by Olivier Durand-Lasserve and Dennis Dlugosch, Economics Department, OECD. Discussant: Richard Lewney. 15h00-15h45.*
- **General discussion.** What is the likely impact of key climate mitigation action, notably an increase in carbon prices and additional investment, over the short, medium and long term, in advanced economies and in emerging-market economies? What are the strengths and weaknesses of different modelling approaches? To what extent do multipliers of low-carbon ("green") investment differ from those of high-carbon ("brown") investment? What may be the economic impacts of other key policies (such as land use and urbanisation policies)? 15h45-16h15.

Coffee break. 16h15-16h45

Session 2. Macroeconomic impacts of R&D and of the roll-out and integration of low-carbon technologies. 16h45-18h45. Chair: Andrés Fuentes Hutfilter, Economics Department, OECD.

- **R&D strategies for decarbonisation.** *Presentation by Valentina Bosetti, Economics Department of Bocconi University and Fondazione ENI Enrico Mattei (FEEM). Discussant: Dimitri Zenghelis, Grantham Institute on Climate Change and the Environment. 16h45-17h15.*
- **The macroeconomic impacts of renewable energy deployment.** *Presentation by Alvaro López-Peña, International Renewable Energy Agency. Discussant: Jean Chateau, Environment Directorate, OECD. 17h15-17h45.*

- **Promoting the development of bioenergy in Indonesia: A dynamic computable general equilibrium analysis.** *Presentation by Hidayat Amir, Ministry of Finance, Indonesia. Discussant: Valentina Bosetti.* 17h45-18h15.
- **General discussion.** What is the economic case for front-loading efforts to boost R&D and deploy renewable energy? What are the short-term and long-term macroeconomic impacts, in the context of the decline in productivity growth observed in recent years? How do they relate to other key policies to mitigate climate change, notably carbon pricing, and policies towards urban development and land use? 18h15-18h35.
- **Wrap up:** key policy recommendations from Day 1. 18h35 – 18h45

25 NOVEMBER

Session 3: The wellbeing and distributional impact of climate change mitigation and adaptation. 9h30-13h00. *Chair: Carolin Zerger, German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety.*

- **Taking a broader view of climate change mitigation policies.** *Presentation by Thomas Sterner, Department of Economics, University of Gothenburg. Discussant: Carolina Grottera, Center for Integrated Studies on Climate Change and the Environment, Federal University of Rio de Janeiro.* 9h30-10h00.
- **Macroeconomic and higher order effects of climate change adaptation policies.** *Presentation by Francesco Bosello, University of Milan and Fondazione ENI Enrico Mattei (FEEM). Discussant: Thomas Sterner.* 10h00-10h30.

Coffee break. 10h30-11h00

- **The transition to a low carbon economy and its effects on jobs and welfare – a long-term scenario for Brazil** *Presentation by Carolina Grottera. Discussant: Tara Caetano, Energy Research Centre, University of Cape Town.* 11h00-11h30.
- **The long-term structural economic consequences of climate damages and mitigation action: insights from the OECD's ENV-Linkages model.** *Presentation by Rob Dellink, Environment Directorate, OECD. Discussant: Zou Ji, National Center for Climate Change Strategy and International Cooperation, National Development and Reform Commission, China.* 11h30-12h00.
- **General discussion.** What is the impact of decarbonisation policies on employment? How can the impact of decarbonisation policies on other dimensions of human well-being, beyond GDP and consumption, be quantified? What is the evidence on co-benefits, in terms of health outcomes and pollution, equity and on poverty? What can we learn from country experiences thus far in both advanced and emerging-market economies? How do decarbonisation policies relate to the development needs of emerging economies and developing countries and to Sustainable Development Goals? 12h00-12h30.

Lunch. 12.30-13h30

Session 4. Impacts on reallocation, stranded assets, and government budgets 13h30-17h30. Chair: Christian Kastrop, Economics Department, OECD.

- **Company- and sector-level financial risks and opportunities in the transition to (well below) 2° C.** *Presentation by Nicole Röttmer, The CO-Firm GmbH. 13h30-14h00.*
- **Adjustment costs and structural change resulting from climate change mitigation and adaptation.** *Presentation by Dimitri Zenghelis. Discussant. Francesco Bosello. 14h00-14h30.*
- **The impacts and trade-offs of stranding power sector assets in South Africa.** *Presentation by Tara Caetano. Discussant: Alvaro López-Peña. 14h30-15h00.*

Coffee break 15.00-15.30

- **Some fiscal implications of climate change mitigation policies.** *Presentation by Richard Tol, Department of Economics, University of Sussex. Discussant Andrés Fuentes Hutfilter, Economics Department, OECD. 15h30-16h00.*
- **Making Climate Mitigation Policies a Lever for Restructuring the Chinese Economy.** *Presentation by Zou Ji. Discussant Meriem Hamdi-Cherif, Centre International de Recherche sur l'Environnement et le Développement. 16h00-16h30.*
- **General discussion.** Are the macroeconomic modelling tools capable of capturing the fundamental structural change due to deep decarbonisation? Does climate change mitigation and adaptation require more intense reallocation of resources across sectors than has been experienced in recent decades, in many economies? Which economies are likely to be the most affected? How should stranded assets be modelled in a macroeconomic model? What is the impact of stranded assets in a scenario where firms gradually adjust to the green path, as compared to a scenario where the adjustment is delayed by ten years or so? What other (structural, financial, innovation, etc.) policies facilitate the transition? 16h30-16h50.
- **Wrap up:** key policy recommendations from Day 2. 16h50 – 17h00

Closing remarks by Andreas Schaal, Director, Global Relations Secretariat, OECD: 17h00