

“Climate policy co-benefits for public revenues and economic growth”

in the framework of 21st EAERE Conference

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organized by Fondazione Eni Enrico Mattei (FEEM) and International Center for Climate Governance (ICCG)

As a result of the global economic downturn, national budget deficits have been growing as a percent of GDP and public spending for infrastructure development has been reduced. Some economists argue that public investment in new energy technologies might be part of the solution to support economic growth. It could help support innovation, develop more advanced technologies and provide competitive and first mover advantages. On the other hand, O. Blanchard indicates that, even if the transformation of the energy sector might favor economic activity, the amount involved is small compared to what is needed to restore growth in Europe.

The impact assessment of the 2030 climate and energy framework suggests that the EU climate and energy objectives for 2030 may have positive impacts on GDP and employment if carbon auction revenues are used to lower labor costs or invest in energy efficiency and renewable energies. According to IEA, global energy supply investment need by 2035 is US\$40 trillion, of which US\$6 trillion in renewable energy. In Europe the investment need is US\$2.2 trillion in the electricity transition to replace ageing infrastructure and meet decarbonisation goals. Half of this investment is foreseen in the renewable energy sector (IEA, 2014).

Beyond mitigation, adaptation may raise similar discussions. Global estimates of adaptation investment needs through 2050 across various sectors (agriculture, forestry and fisheries, water supply, human health, coastal zones, infrastructure, and extreme events) are in the range of US\$70-100 billion annually (World Bank, 2010). While adaptation expenditures in 2012 are estimated to be around US\$395 million (Schalatek et al., 2012), there is evidence of under-investment in adaptation. According to CPI 2014 global landscape of climate finance, the final uses of global climate finance in 2013 mainly target mitigation actions (91%). Only a small fraction (7%) addresses adaptation measures. As the countries that are likely to be the most impacted by climate change are developing countries, this imbalance may increase economic inequalities between richer and poorer countries.

Comparing the impacts of climate change and the costs of investment to prepare to it would allow making decisions on how to best reconcile current public budget constraints and needs to invest and prepare our economies towards more resilient and low carbon paths, in an equitable manner. The objective of this parallel session is to demonstrate that climate policy can be beneficial to economic growth, and to define an optimal climate policy able to transform climate change from a burden into an opportunity for promoting sustainable development.

CHAIRPERSON:



Prof. Carlo Carraro

FEEM, ICCG, Ca' Foscari University of Venice, Italy

Carlo Carraro is Professor of Environmental Economics and Econometrics at Ca' Foscari University of Venice, where he has been President from 2009 to 2014 and Director of the Department of Economics from 2005 to 2008. In 2008, he has been elected Vice-Chair of the Working Group III and Member of the Bureau of the Nobel Laureate Intergovernmental Panel on Climate Change. He is Director of the Climate Change and Sustainable Development Programme of the Fondazione Eni Enrico Mattei, and Director of the International Centre for Climate Governance (ICCG). He is a member of the Green Growth Knowledge Platform Advisory Committee and of the Scientific Committee of the International Human Dimensions Programme. He is a research fellow of the CEPR (Center for Economic Policy Research), and CESifo (Center of Economic Studies), and Associate Research Fellow, CEPS (Center of Economic Policy Studies). He belongs to the Board of Directors of the Euro Mediterranean Centre on Climate Change (CMCC).

SPEAKERS:



Prof. Thomas Sterner

University of Gothenburg, Sweden

Thomas Sterner is professor in environmental economics and in 2012-2013 he was on sabbatical leave from Gothenburg and worked as Chief Economist at the Environmental Defense Fund. His main area of work at the EDF was on instrument design for climate policy. As professor of environmental economics in Gothenburg Thomas Sterner has during the last two decades built up the Unit for Environmental Economics with a staff of about a dozen PhDs and another dozen graduate students. The unit gives a unique PhD program in environmental economics with a large participation of graduate students from developing countries (financed by the Swedish International Development Cooperation Agency, Sida), masters and undergraduate programs and a large number of other research and teaching activities. Thomas Sterner's main research interests lie in the design of policy instruments. Within this broad area he has focused on a number of applications: resource management in developing countries; economics of energy use and climate change, where he has looked at the efficiency of various other policy instruments in the area of transport, industry and energy; comparative efficiency of economic policy instruments in various sectors, which focuses on empirical comparisons of the efficiency of policy instruments used in various sectors or countries. **His contribution will help to define an optimal climate policy able to transform climate change from a burden into an opportunity for promoting sustainable development.**



Prof. Ottmar Edenhofer

Potsdam Institute for Climate Impact Research (PIK), Potsdam, TU Berlin, Germany

Ottmar Edenhofer is Professor of the Economics of Climate Change at the TU Berlin - Berlin Institute of Technology and Co-Chair of Working Group III of the Intergovernmental Panel on Climate Change (IPCC), which won the Nobel Peace Prize in 2007. He is Deputy Director and Chief Economist at the Potsdam Institute for Climate Impact Research (PIK) and currently leads Research Domain III - Sustainable Solutions - which is focusing on research in the field of the Economics of Atmospheric Stabilisation. In 2012 he was appointed director of the newly founded Mercator Research Institute on Global Commons and Climate Change (MCC) and supports the Science-Industry Cooperation, the Workgroup Climate, Energy and Environment within the German National Academy of Sciences Leopoldina as an active member, and furthermore advises the World Bank within the advisory committee of the Green Growth Knowledge Platform. Under his leadership, Working Group III has carried out the Special Report on Renewable Energy Sources and Climate Change Mitigation which was published in 2011. Professor Edenhofer's research explores the impact of induced technological change on mitigation costs and mitigation strategies, as well as the design of instruments for climate and energy policy. He specializes in the Economics of Atmospheric Stabilization, Social Cost-Benefit Analysis, Sustainability Theory, Economic Growth Theory, Environmental Economics Welfare Theory and General Intertemporal Equilibrium Theory. **He will give his contribution to the understanding of the interlinkage between climate policies and economic growth.**



Dr Carolyn Fischer

Resources for the Future (RFF), Washington, USA

She is a senior fellow at Resources for the Future and associate director of its Center for Climate and Electricity Policy. Since 2012 she is a Visiting Professor at the School of Business, Economics, and Law of the Gothenburg University. She has been consultant for the World Bank. She is currently a Marie Curie Fellow at Fondazione Eni Enrico Mattei. Her research focuses on policy mechanisms and modeling tools that cut across a variety of environmental and resource management issues. In the areas of climate change and energy policy, she has published articles on designing cap-and-trade programs, fuel economy standards, renewable portfolio standards, energy efficiency programs, technology policies, the Clean Development Mechanism, and the evaluation of international climate policy commitments. A recent focus of her research is the interplay between international trade and climate policy, options for avoiding carbon leakage, and the implications for energy-intensive, trade-exposed sectors. In areas of natural resources management, she has addressed issues of eco-certification, wildlife conservation, invasive species, and biotechnology, with particular emphasis on the opportunities and challenges posed by international trade. **She will contribute by focusing on environmental and technology policy options and their co-benefits for economic growth.**



Prof. Francesco Bosello

FEEM, CMCC, State University of Milan, Italy

He graduated at the Ca' Foscari University of Venice, he received a Master degree in economics from the University College of London (UK) and a Doctoral degree in economics from the University of Venice. He is presently associate researcher at the Fondazione Eni Enrico Mattei (FEEM) of Milan, assistant professor of economics at the University Statale of Milan and affiliate scientist of the Italian "Euromediterranean Center for Climate Change" (CMCC). His main interests are focused on climate-change policy and modelling with particular emphasis on negotiation aspects of international environmental agreements and on optimal policy design considering adaptation and mitigation options. He is being currently involved in several research projects (VECTORS, FEEM SI, DYNAMIX, CLiMiP, CPF) and he is undertaking research activities concentrated in the area of climate change impact assessment and in the design of optimal mitigation and adaptation strategies developing integrated assessment modelling tools. Climate change impact studies tackled within these programmes concern for instance: health, extreme events, sea-level rise, agriculture, tourism. **His contribution will focus on climate policy co-benefits for public revenues.**

Names of the Policy Session Organizers:

Carlo **Carraro**, *Director at Fondazione Eni Enrico Mattei (FEEM), Director of the International Center for Climate Governance (ICCG), Professor at Ca' Foscari University of Venice, Italy*

Isabella **Alloisio**, *Scientific Coordinator ICCG, Researcher at Fondazione Eni Enrico Mattei (FEEM) and Euro-Mediterranean Center on Climate Change (CMCC), Italy*