

## First PEGASOS Workshop

# Frontiers in modeling fossil fuels phase-out and stranded assets: a political economy perspective

February 17-18, 2020

Potsdam Institute for Climate Impact Research

Conference room in basement of building A56, Telegrafenberg, 14473 Potsdam

### Background

A timely fossil fuel phase-out is essential for meeting the international climate goals of the Paris Agreement. However, current national emission reduction commitments fall short of the required ambition to meet these goals. The organization of a global fossil fuel phase-out over the next few decades constitutes the very core of global climate negotiations.

Climate policies for a fossil fuel phase-out face substantial challenges. In stylized economic models, low-carbon transitions are typically smooth and rapid. Yet, in practice, they imply non-trivial structural changes to the economy, affecting multiple actors with contrasting interests. A serious consequence of strong climate policy is the need to retire investments into fossil extraction and production infrastructures – creating the risk of stranded assets. Understanding this complex political economy, as well as the magnitude and the risk of stranded assets is of crucial importance to assess the stability of the economic and financial system and reduce the costs of policy interventions.

In light of this, MCC, PIK, WWU and DIW will be hosting a two-day workshop to discuss the frontiers of modeling fossil fuel phase-outs and stranded assets, including ways to reflect their political economy aspects. The workshop takes place within the PEGASOS project, which analyzes the political economy of a global coal phase-out. The project is financed by the German Ministry for Research and Education (BMBF) as part of the funding program *Economics of Climate Change II*.

### Aims

The first part of the workshop will kick-off a debate among researchers and stakeholders on the most pressing issues raised by climate policies. We will explore how capital markets and investor strategies are changing to address the energy transition. We will then examine barriers and political concerns related to the fossil fuels phase-out, drawing from the case study literature and the real-world experiences of stakeholders. This will lead to a prioritized research agenda that ensures policy-relevance of envisioned developments. It will further provide a forum for discussion and debate on how policies able to overcome the inertia of the energy system can be designed and studied.

Following this context setting, in the second part of the workshop, participants will jointly reflect on the role played by models in informing policy design. What can we learn from different

categories of models? What are models currently unable to explain? Different modeling approaches will be introduced. We aim to advance the frontiers of modeling fossil fuels phase-out by discussing how current and emerging modeling approaches can aid our understanding of low carbon transitions, stranded assets, and their associated political economy. A particular focus will be given to discussions on how new insights may emerge as models interact with, and complement, each other. How to exploit potential synergies to provide a more comprehensive policy-oriented guidance?

To register for the workshop please contact: Francesca Diluiso [diluiso@mcc-berlin.net](mailto:diluiso@mcc-berlin.net).

## Agenda

Time	Titles	Co-chairs & Speakers
Day 1: Monday, February 17		
12.00-13.00	Light lunch and registration	
13.00-13.15	Welcome and Introduction	Jan Minx, MCC
13.15-14.45	Session 1: The role of the financial sector on the road towards climate neutrality	Francesca Diluiso, MCC
	This session gives voice to stakeholders from the investment and financial sectors. The goal is to understand how the investment scenario is changing in response to climate policy, how financial institutions are addressing the transition risk, and what type of new measures can be implemented to foster green investments.	Silvie Kreibiehl (TBC) EIB (TBC) Bundesbank (TBC) Gerhard Schick (TBC)
14.45-16.15	Session 2: Coal phase-out: perspectives, past experiences and political economy	Arwen Colell, MCC
	This session presents some preliminary results of the PEGASOS project. Different coal phase-out scenarios will be analyzed, along with evidences coming from historical coal transitions and case studies conducted in different developing countries. We will collect stakeholders' experiences to understand barriers, political concerns, and arguments against the phase-out and identify policies and compensation schemes politically feasible.	Jan Minx and Jan Steckel, MCC Jochen Harnisch, KfW (TBC) GIZ (TBC) NGOs (TBC) Industry (TBC)
16.15-16.45	Coffee break	
16.45-18.15	Session 3: Representation of fossil fuels in Integrated Assessment Models	Nico Bauer, PIK Stephen Bi, PIK
	IAMs models are traditionally biased toward demand-side policy evaluation. Recent evidence suggests supply-side policies restricting fossil fuels can be advantageous in effectiveness, efficiency, and political feasibility. This session	Stephen Bi, PIK Sha Yu, PNNL Jessica Jewell, Chalmers University of Technology

	will highlight the implementation of the fossil fuels sector in different IAMs and the potential for improvements in both representation and policy design.	
	Workshop dinner	
Day 2: Tuesday, February 18		
9.00-10.30	Session 4: Macroeconomic and financial implications of fossil fuels phase-out: the DSGE approach	Francesca Diluio, MCC Jan Minx, MCC
	This session highlights the recent contributions to include environmental policies in Dynamic Stochastic General Equilibrium models and provides some examples on how DSGEs are used to study macroeconomic and financial implications of the fossil fuels phase-out.	Fabio Di Dio, JRC Barbara Annicchiarico, Tor Vergata University and Francesca Diluio, MCC Christoph Schult, IWH
10.30-11.00	Coffee break	
11.00-12.30	Session 5: Sectoral modeling of international coal phase-out	Christian Hauenstein, TU Franziska Holz, DIW
	This session focuses on recent innovative applications of sectoral numerical modeling on coal phase-out scenarios. It shall broaden the discussions and address other coal-intensive economies outside Germany and Europe, namely the U.S.A. and China.	Christian Hauenstein and Franziska Holz, DIW Teng Fei, Tsinghua University (TBC) TBA
12.30-13.30	Lunch	
13.30- 15.00	Session 6: Modelling the political economy of a national coal phase-out	Joerg Lingens, WWU Andreas Loeschel, WWU
	This session captures the political-economic dimension of phasing out coal. It focuses on the role of relevant policies and on the way they affect the structural changes triggered by the phase-out. It shall also characterise potential political frictions caused by strategic behaviour of institutional actors.	Wolfgang Habla, ZEW Peter Newell, University of Sussex TBA
15.00-17.30	Session 7: Discussion in break-out groups and feedback in plenary session (including coffee break)	
17.30-18.00	Conclusion and wrap-up	