

## 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
	Powering Down Coal	Stefan Lavelle, Carbon Tracker Initiative
	Panel and discussion	Stefan Lavelle Boyan Yanovski, PIK Knut Hechtfisher, Ubitricity Ramona Liberoff
14.45-16.15	Session 2: Coal phase-out: perspectives, past experiences and political economy	Pao-Yu Oei, TU Berlin
	How to phase out coal globally? Vested interest, distributional concerns and just transitions	Jan Steckel, MCC
	Panel and discussion	Jan Steckel Joerg Baur, GIZ Karsten Smid, Greenpeace
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
	The Ambitions of COALitions	Stephen Bi, PIK
	Finding Feasible Coal Phaseout Pathways: Linking Plant-by-Plant Analysis with Integrated Assessment Modeling	Sha Yu, PNNL
	The feasibility of fossil fuel phase-out to meet climate targets: learning from past experience	Jessica Jewell, Chalmers University of Technology
	Panel and discussion	
	Workshop dinner	

Day 2: Tuesday, February 18		
9.00-10.30	Session 4: Macroeconomic and financial implications of fossil phase-out: the DSGE approach	Francesca Diluio, MCC Jan Minx, MCC
	Assessing climate-energy policies with DSGE models	Fabio Di Dio, JRC
	Carbon bubble, monetary policy and macroprudential regulation	Barbara Annicchiarico, Tor Vergata University
	Power generation and structural change: Quantifying economic effects of the coal phase-out in Germany	Christoph Schult, IWH
	Panel and discussion	
10.30-11.00	Coffee break	
11.00-12.30	Session 5: Sectoral modeling of international coal phase-out	Christian Hauenstein, TU Berlin Franziska Holz, DIW
	Integrated coal scenarios for the U.S. case - Assessment from a sectoral perspective	Christian Hauenstein, TU Berlin, Franziska Holz, DIW Berlin
	Effects of the coal phase-out on the German electricity market	Leonard Goeke, Mario Kendzioriski, Pao-Yu Oei, TU Berlin
	Country-based perspectives on coal mining phaseout – committed emissions and comparative transitional challenges	Greg Muttitt
	Panel and discussion	
12.30-13.30	Lunch	
13.30- 14.40	Session 6: Modelling the political economy of a national coal phase-out	Joerg Lingers, WWU Andreas Loeschel, WWU
	The Political Economy of Negotiating International Carbon Markets	Wolfgang Habla, ZEW
	The Political Economy of Just Transitions	Peter Newell, University of Sussex
	Panel and discussion	
14.40-17.00	Session 7: Discussion in break-out groups and feedback in plenary session (including coffee break)	
17.00-18.00	Conclusion and wrap-up	Rick van Der Ploeg, University of Oxford