



Workshop on Policy Interactions and Overlapping Policies

Tuesday, 17 February 2015

Venue: Fondazione Eni Enrico Mattei
Palazzo delle Stelline
Corso Magenta 63, 20123 Milano



Climate policy-making in today's world is complex. Transaction and enforcement costs are significant and affect the effectiveness and efficiency of policy instruments. Developments in related policy fields, such as energy policy, may influence the performance of climate policy instruments, while path dependency could lead to a lock-in on carbon intensive technological paths and hinder the penetration of low carbon technologies. Furthermore, modern economies do not operate in autarky. European climate policies may impact upon the competitiveness of European producers, which, in turn, may affect both the policies' environmental effectiveness and economic efficiency. Issues of equity are also likely to affect the political feasibility of a particular policy instrument. Opting for solely economically first-best solutions can easily hamper action and stall progress. All these considerations highlight the need for carefully considered, realistic policy design.

This workshop discusses how climate and energy policies interact and how policy portfolios which comprehensively address these complexities need to be designed. The workshop presents and discusses new insights from research conducted in ENTRACTE, a research project funded under the 7th Framework Programme of the European Union.





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08.30 – 8.45 **Welcome address by Prof. Carlo Carraro (Coordinator, Climate Change and Sustainable Development Programme, FEEM)**

08.45 – 10.45 **Environmental Policy, Innovation and the EU-ETS (Chair: FEEM)**

**Invited Speaker: Margaret Taylor (Lawrence Berkeley National Laboratory):
“Retrospective review, innovation and appliance standards”**

Abstract: We use point of sale data, energy data, third party quality data and product manual data to investigate the role of energy efficiency regulation - minimum standards in particular - on innovation in five appliances over the period 1987-2012. We find that, when compared to government estimates, we observe prices to be lower than expected and quality higher than expected under regulatory conditions. We discuss possible reasons for our findings, and in particular, the role of regulation in initiating new iterative problem-solving cycles in design teams.

Elena Verdolini (FEEM): “The impact of policy and uncertainty on innovation in the wind industry: evidence from European countries”, joint with Valentina Bosetti and Pierre Jockers

Abstract: We empirically test the hypothesis that frequent changes to environmental policies weaken innovation focusing on wind technologies innovation in Europe. We use patent data as a measure of innovation. Inspired by the real option literature, we isolate the “surprise element” of policy and construct time-varying policy and policy uncertainty proxies based on information on installed capacity in wind for 18 European countries between 1995 and 2009. We show that a higher level of policy commitment in EU countries is associated with higher innovation in wind energy technologies. Such effect is however lower (and possibly offset) in those countries where policies are more uncertain. These results are robust across different proxies for innovation and the inclusion of various control variables.

Luca Taschini (LSE), “The EU ETS Reform: A Responsiveness Mechanism”, joint with Sascha Kollenberg

Abstract - The paper is motivated by the European Commission's proposal to implement a Market Stability Reserve (MSR) that would help improve the responsiveness of the EU ETS to unforeseen events. The paper's objective is to investigate different designs of the MSR and how they impact carbon market performance as measured by (i) total allowances in circulation; (ii) abatement pathways; (iii) aggregate compliance costs; and (iv) allowance price dynamics. A supply-side MSR is primarily aimed at tackling future extreme and unanticipated variations in allowance demand due to changes in economic circumstances, overlapping policies and technological advancements. With this mind, the EC's proposal for a (volume-based) MSR has the potential to improve policy resilience by allowing the EU ETS to respond, in a predictable manner, to unanticipated shocks. Whether the parameters of the MSR (withholding and injection thresholds, in particular) are set properly and whether the MSR can ensure that the system is resilient to different possible contingencies need to be investigated.

Discussion

10.45 – 11.00 **Coffee Break**





11.00 – 13.00

Environmental Policies, Energy Policies and Rebound (Chair: Taran Fæhn FCO)

Invited Speaker: Karen Turner (University of Strathclyde), “International spillover and rebound effects from increased energy efficiency in Germany”, joint with Simon Koesler and Kim Swales

Abstract: The pollution/energy leakage literature raises the concern that policies implemented in one country, such as a carbon tax or tight energy restrictions, might simply result in the reallocation of energy use to other countries. Our research addresses these concerns in the context of policies to increase energy efficiency, rather than direct action to reduce energy use. Using a global CGE simulation model, we extend the analyses of ‘economy-wide’ rebound from the national focus of previous studies to incorporate international spill-over effects from trade in goods and services. Our focus is to investigate whether these effects have the potential to increase or reduce the overall (global) rebound of local energy efficiency improvements. In the case we consider, increased energy efficiency in German production generates changes in comparative advantage that produce negative leakage effects, thereby actually rendering global rebound less than national rebound. The presentation at the ENTRACTE workshop will focus in particular on downward pressures on economy-wide rebound effects that result more generally from changes in competitiveness as well as the capacity and pricing decisions of energy suppliers.

Florian Landis (ZEW), “Interactions of EU climate and energy policy and their distributive effects”, joint with Peter Heindl.

Abstract: By distributing among its member states the emission allowances for auctioning within the EU emission trading system, the EU compensates countries if they have to abate emissions under more difficult conditions than others. Our study analyses the reliability of this redistribution mechanism if certificate prices and thus auctioning revenues are influenced by economic circumstances or interaction with other climate policy targets. We employ the PACE model with a household representation at the income quintile level to analyse EU wide distributive effects of climate policy and complementing inter- and intraregional redistributive policies that recycle revenues from the auctioning of emission allowances.

Brita Bye (FCO/CREE), “Energy efficiency measures and rebound effects: A CGE-analysis with energy-saving investments”, joint with Taran Fæhn and Orvika Rosnes

Abstract: While the introduction and reformation of energy instruments take place at high speed in the current European energy policies, the knowledge on how several energy instruments and goals interact lags behind. Norway is not an EU member and following EU energy and carbon policy standards is to a large extent optional. Norway is at present considering the consequences of similar goals. In this paper we analyse different energy efficiency policies for a small, open economy, Norway, that are designed to meet similar relative energy efficiency improvements as in the EU and how they interact with European and domestic carbon policies. We simulate the economic and emission effects of different goals for energy efficiency in households. We model endogenous energy efficiency investments in buildings – at an increasing cost – within a CGE setting. The goals are formulated as either a cap on energy use in dwellings or as a cap on energy intensity in dwellings. The energy efficiency instruments will interact with the carbon price and the energy goods prices through income and price effects that will generate economy-wide rebound effects having welfare and emission effects.

Discussion



13.00 – 13.50

Lunch

13.50 – 16.30

Environmental Policy, Competitiveness and Trade (Chair: PIK)

Invited speaker: Carolyn Fischer, “Overlapping Strategies for Reducing Carbon Emissions from the Transportation Sector”, joint with Soren Anderson and Alex Egorenkov

Herman Volleberg (TSC), “Choosing Corrective Taxes in the Presence of Administrative Cost”

Abstract: While in a first-best world pollution externalities should be addressed by emission taxes, these taxes seem to be too costly in a second-best world with monitoring and verification problems and other administrative costs. We discuss under which conditions alternative taxes (input taxes, output taxes) or a mix of them are more effective and efficient to correct pollution externalities in a model with administrative costs. We pay specific attention to exempting certain sectors from certain taxes that would be required in a first-best setting. In particular we discuss whether only upstream sectors or only downstream sectors need to be taxed. We relate our outcomes to the Pigouvian approach, the tax-interaction/double-dividend perspective, and the lifecycle analysis approach to environmental taxes.

Beatriz Gaitan (PIK), “Do border tax adjustments solve competitiveness concerns when carbon-intensive intermediate goods are used in production?”

Abstract: The direct effect of carbon pricing on carbon-intensive industries is an increase in their cost of production. This cost increase can potentially lead to decreases in profit margins or production, hence causing leakage and hampering competitiveness. Full border tax adjustments (BTA) are one of the salient instruments proposed to reduce carbon leakage and restore competitiveness due to unilateral climate policy. Our study focuses on analyzing BTAs in the presence of intermediate goods. Surprisingly, the theoretical literature has not addressed the role of intermediate goods yet, even though the largest share of international trade is that of intermediate goods. Further, most of the carbon-energy intensive industries are intermediate inputs and not final goods (among others cement, aluminum, chemicals). Using an analytical model of trade with abatement opportunities, we find that full a BTA can at best restore the output level of intermediate good producers, but hampers the output of final good producers which observe an increase in the cost of intermediate goods they use in production.

Ralph Martin (IMPERIAL), “The effect of the EU-ETS on emissions and employment”

Abstract: How do firms respond to regulation and market incentives? Does climate change policy cause companies to shift the location of production, thereby creating carbon leakage? Using comprehensive plant-level data for around 9,500 French manufacturing firms, this paper explores the economic and environmental response of plants to the European Union Emissions Trading Scheme (EU ETS) – the EU’s flagship climate policy. Our results suggest that ETS-regulated manufacturing plants in France reduced emissions by an average of 15.7%. The most marked reduction in emissions is observed during Phase II (2008-2013). In terms of economic outcomes, we find a statistically significant reduction in employment (10.4% in Phase II). We aim to understand whether these reductions are real global reductions in emissions or whether they are merely the result of carbon leakage. We examine the impact of the European Union





Emissions Trading System (EU ETS) on the geographical distribution of carbon emissions within multinational companies based on data from the Carbon Disclosure Project for the period 2007-2009. We find no evidence that the EU ETS has induced a displacement of carbon emissions from Europe towards the rest of the world.

Discussion

16.30 – 16.45

Coffee Break

16.45 – 18.15

Interactions in the EU climate and energy policies: Lessons learned and lessons to learn (Chair: ZEW)

Invited Speaker: Peter Vis (European Commission)

Andreas Löschel (ZEW and University Münster)

Frank Convery and Denny Ellerman (EnvEcon)

This Roundtable Discussion brings together four leading experts at the interface of environmental and energy economics and policy making. The debate will discuss how the ENTRACTE project findings can support the policy sphere best and how its most valuable insights need to be framed in order be relevant to the policy making process.

18.15

Conclusion of the workshop

