Assessing Europe’s current climate policy landscape to make it fit for the future – An insight in ENTRACTE’s current research

Editorial

While the European Union is currently discussing its climate policy framework for the years after 2020 and international negotiations are taking place to prepare a global agreement by the end of 2015, actions in several dimensions affect these debates and reveal the complexity of climate policy-making.

So leads a national policy like the rapid expansion of subsidized renewable energy production in Germany and its interaction with supra-national instruments such as the EU Emission Trading System (EU-ETS) to a situation in which the country will probably fail in reaching its own emissions reductions goals. At the same time, the EU-ETS struggles with an oversupply of emission permits. These examples show that a functioning climate policy needs careful design and holistic thinking.

This is the contribution the ENTRACTE research project envisages. The ENTRACTE research project is funded under the 7th Framework Programme of the European Union and is coordinated by the Centre for European Economic Research (ZEW) in Mannheim, Germany. Nine partners from six European countries collaborate in the ENTRACTE consortium within the project’s lifetime of 36 months, starting September 2012.

This newsletter gives an overview about the recent activities of ENTRACTE. It presents research highlights conducted within the project and shows important dissemination activities of ENTRACTE.
Market Concentration and Transferable Quotas

Excess EU ETS Allowances and the Allowance Price

Excess allowances in the European Union (EU) Emissions Trading System (ETS) have consistently pressured CO2 permit prices downwards. Initially trading for over $20/tCO2 (see Fig 1), prices dropped precipitously in April of 2006 when it first revealed that firms had allowances much in excess of their emission needs. While they rebounded for the first three years of Phase II, they have since resumed their downwards decline, despite the EU emission quota being gradually tightened in every other year. Is it possible for firms to abate emissions efficiently when the ceiling is not stringent enough?

![Figure 1: EU ETS (spot) allowance prices per ton of CO2, 2005 to 2014](image)

Abatement and the EU ETS

This raises two critical issues that regulators should be concerned about. Firstly, is the EU ETS market operating efficiently and secondly can electricity prices, following the commencement of the EU ETS, be partly explained by the activities of utility companies in the allowance market? An examination of the empirical evidence indicates that permit prices can be linked to underlying cost-based fundamental drivers (especially for Phase II) such as coal, oil and gas prices, and weather. But these do not consistently explain the permit price, casting doubt on the possibility that permit markets are fully working as regulators intended. For Phase I of the EU ETS, Hintermann (2013) argues that the exercise of market power by major emitters RWE and Vattenfall undermined the efficient functioning of the EU ETS since these firms consistently held more permits relative to their projected emission needs. To complement the theoretical analysis, in the next step we analyze empirically whether observed higher electricity prices are attributable to market power of firms operating in the respective EU electricity markets.

References


Samuel Jovan Okullo, TSC

The report on Market Concentration and Transferable Quotas / Market Power and EU ETS can be found on the ENTRACTE website. Please click here for the complete report.
Modelling Different Designs of a Market Stability Reserve (MSR)

The MSR in the EU ETS context

As part of the EU 2030 energy and climate framework, the European Commission (EC) has proposed introducing a Market Stability Reserve in the EU ETS starting with 2021. The purpose of the MSR is to address the current surplus of allowances in the market as well as future imbalances of supply and demand, in order to meet the (current and future) EU ETS targets in a cost-effective manner.

The EC’s proposal envisions an MSR that would provide control over the supply of allowances in the market. Its intervention in the market would be rule-based (also known as trigger-based). In particular, it would withhold or inject allowances if the total number of allowances in circulation (TNA)\(^1\) in a given year exceeds or falls below a pre-determined withholding or injection threshold respectively. The intervention size would also be pre-determined.

MSR designs and market performance

The study assesses the impact of different MSR designs on the carbon market’s performance until 2050, as measured by (i) total allowances in circulation (or reserve size); (ii) abatement pathways; (iii) aggregate compliance costs; and (iv) allowance price dynamics.

Three types of MSRs are modelled, depending on the triggers used. A volume-based MSR is triggered when the TNA exceeds (drops below) the allowance withholding (injection) threshold measured in terms of allowance volume; this is similar to the MSR proposed by the EC. A mean-price MSR is triggered when the price of allowances is lower (greater) than the withholding (injection) threshold measured in terms of an average of prices over a reference period. Lastly, a price-trend MSR is triggered when the price of allowances over a specified period falls (rises) compared to a pre-defined reference period.

Main results

By withholding or injecting allowances, volume-based and mean-price MSRs can re-distribute abatement efforts across the compliance phase and thus help reduce total costs from the otherwise delayed abatement.

All else being equal, total abatement efforts are increasing with the MSR size. A higher (lower) volume-based (price-based) withholding threshold reduces the pressure on total abatement required; a lower (higher) volume-based (price-based) injection threshold increases the pressure on total abatement required. A rise (drop) in the withholding (injection) quantity increases the pressure on the total abatement required.

The figure below illustrates the results from modelling the market’s performance under the EC’s proposed MSR. The aggregate compliance costs in this case score the second lowest of all MSR designs that were modelled.

Policy considerations

The context in which supply management mechanisms are currently being discussed is linked to the argument that fundamental changes in the demand for permits make the original policy levels no longer optimal. Before introducing an MSR designed to make allowance supply responsive, it is thus essential to clarify the specific objectives that the mechanism will seek to deliver. This study argues that 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 / or technological advancements. In other words, the ultimate objective of the MSR is to mitigate the impacts of excessive oversupply and undersupply in the carbon market.

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 timely and predictable manner, to unanticipated shocks. By inducing earlier abatement, it can also help reduce aggregate compliance costs. Whether the parameters of the EC’s MSR are set properly and whether the MSR can ensure that the system is resilient to all possible

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\(^1\) The EC calculates the TNA in year \(t\) as the sum of allowances issued from 2008 to year \(t\) plus the international credits used from 2008 to year \(t\), minus the sum of emissions from 2008 to year \(t\) and allowances in the MSR in year \(t\).
Future contingencies will be investigated as part of future research.

Luca Taschini & Corina Comendant, LSE

The report on Market Stability Reserve / EU-ETS: Reform and Expansion can be found on the ENTRACTE website. Please click here for the complete report.

Renewable Energy Supply in Europe

Until the Fukushima accident in Japan in February 2011, nuclear power was by many seen as an important part of a low-carbon future. The accident sparked security concerns and anti-nuclear sentiments in many European countries causing three EU member states to phase out nuclear power. In Belgium, three reactors are to be phased out by 2015 and the remaining four reactors will be shut down by 2025. In Germany, the seven oldest reactors where shut down very fast and a plan for a complete phase out of nuclear by 2022 was agreed upon. In Switzerland, the parliament agreed not to replace any of the country’s nuclear reactors, which will result in a complete phase-out by 2034.

We examine the outcome if EU-30, that is, all EU member states plus Iceland, Norway and Switzerland, follow the long-run strategy of Belgium, Germany and Switzerland to phase out nuclear power. We focus on two questions. First, to what extent will a phase out of nuclear power be replaced by supply from other electricity technologies? Second, how will a phase out change the composition of electricity technologies?

We use the numerical multi-good, multi-period model LIBEMOD\(^2\) to analyze impacts of a nuclear phase out. In the model, eight energy goods are extracted, produced, traded and consumed in each of the 30 European countries. In each country, electricity can be produced by a number of technologies; nuclear, fuel based technologies, fossil-fuel based CCS, hydro, wind power and solar. LIBEMOD determines all prices and quantities in the European energy market as well as prices and quantities of energy goods traded globally. In addition, the model determines emissions of CO2 by country and sectors.

We run LIBEMOD for 2030 under the assumption that the proposal of the EU Commission to reduce GHG emissions by 40 percent in 2030 relative to 1990 is implemented. In our reference scenario we assume that the nuclear capacities in 2030 reflect decisions taken in 2014 or earlier at the country level with respect to whether nuclear plants will be phased out or new nuclear capacity will come online before 2030; aggregate nuclear capacity is therefore around 20 percent lower in the reference scenario than in 2009. In the other scenarios, see Table 1, we consider either a 50 percent or a 100 percent EU-30 wide nuclear phase-out.

As seen from Figure 1, a complete nuclear phase out in EU-30 by 2030 has a moderate impact on total production of electricity. Lower nuclear production is to a large extent replaced by more renewable electricity production, in particular wind power and bio power.

![Figure 1: Electricity production in EU-30 in 2009 and 2030 (TWh)](image)

In the reference scenario the share of renewable in (total) energy consumption is 28 percent, see Figure 2, that is, one percentage point above the Commission’s proposal for 2030. With a complete nuclear phase-out the share increases to 35 percent. For the electricity market, the share of renewable in electricity production is 69 percent after a complete nuclear phase-out.

![Figure 2: Renewable share in final energy demand in EU-30 by scenario](image)

Rolf Golombek, FCO

The complete report on Renewable Energy Supply in Europe can be found on the ENTRACTE website. Please click here for the complete report.

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\(^2\) see: [http://www.frisch.uio.no/ressurser/LIBEMOD/](http://www.frisch.uio.no/ressurser/LIBEMOD/)
Anti-leakage Polices in the Presence of Intermediate Goods

A setback to the implementation of climate policy is the concern that carbon emissions regulation in some countries may lead to an increase in emissions in other countries with less stringent regulation, a phenomenon known as carbon leakage. While leakage is generated through various mechanisms (see Jakob et al., 2014), leakage can occur when carbon regulation causes a production cost increase in regulated countries leading to a decrease in competitiveness and to a shift in production from regulated to unregulated countries. A salient instrument proposed to reduce carbon leakage and solve competitiveness concerns is the so-called full border tax adjustment (see Fisher and Fox, 2012). A full border tax adjustment (BTA) charges a price on the emissions associated with the production of imported goods while reimbursing the carbon price for exported goods.

Based on computable general equilibrium models some studies find that a BTA reduces carbon leakage only to a small extent (Böhringer et al. 2012), while Fisher and Fox find that a full BTA is an effective measure for reducing leakage (they also find that in some carbon-intensive US sectors, a full BTA is effective in restoring competitiveness). Even though there is mixed evidence on how BTAs affect leakage, theoretical approaches are relatively scarce.

An important feature of international trade data is that intermediate goods account for a larger share of imports than final goods. For example, among OECD countries during the 1995-2005 period, the share of intermediate goods was about 56% and 73% for goods and services, respectively (Miroudot et al., 2009). Taking this into account, we have developed an analytical two-country model of trade to analyze how carbon prices and a full BTA affect leakage and competitiveness in the presence of intermediate goods, as they have been neglected by the previous theoretical literature. The model consists of a regulated country, a non-regulated country and three producing sectors, namely, electricity, intermediate and final goods. We include emission abatement possibilities via an abatement technology. Electricity production generates emissions, and intermediate good producers use electricity (and other factors) in production. In turn, final good producers use intermediate goods (and other factors) in production. We introduce carbon prices which are charged in the carbon content of electricity. As carbon prices are implemented they increase the production cost of intermediate goods in the regulated country and competitiveness in this sector decreases. In particular, the intermediate good sector cannot afford to pay the same return to factors of production as it did in the absence of carbon pricing. As factors of production leave this sector they reallocate to final good production in the regulated country increasing the marginal productivity of intermediate goods. Hence, final good production and the demand of intermediates increase. Since the intermediate good sector in the regulated country has lost competitiveness, intermediate good production in the non-regulated country increases creating leakage. As intermediate good producers are only charged for the net content of emissions (i.e. total emissions minus abatement), abating emissions decrease their total cost of emissions. Thus, there is an incentive to abate. When introducing a full BTA, we find that it restores competitiveness in intermediate goods, but abatement incentives decrease and hence, global net emissions increase. Moreover, the BTA increases the cost of imported intermediate goods and hence, decreases competitiveness in the regulated region final-good sector. In other words: Once intermediate goods are considered, a BTA is not a silver bullet that restores competitiveness to all sectors. These findings are in line with Demailly and Quirion (2006) results. They find that a BTA reduces leakage and causes an increase in the price of cement affecting cement consumers. Our analysis hints that more sophisticated policies, which take into account all relevant equilibrium effects, including changes in production in regulated and non-regulated countries might be required to reduce leakage and counteract competitiveness concerns.

References


Beatriz Gaitan, PIK
Side Event at the UNFCCC in Warsaw

During the 2013 UN Climate Change Conference in Warsaw (COP19) on 20 November 2013, researchers from the ENTRACTE project organised together with researchers from the CECILIA2050 project a side event titled “Triggering innovation for decarbonisation” discussing effects of the ETS on innovation and which policies would be most effective and efficient in decarbonising Europe and the world. The COP 19 Side-event was hosted by the European Commission, DG Research and Innovation in their EU pavilion and jointly chaired by the ENTRACTE coordinator, Prof. Andreas Löschel (ZEW and University Münster), and the CECILIA2050 coordinator, Benjamin Görlich (Ecologic Institute).

Andreas Löschel explained the idea and concepts behind the ENTRACTE project and spoke about the importance to assess policies including their interactions with other instruments and targets.

Ralf Martin from Imperial and a member of the ENTRACTE consortium presented his work on the first installation level econometric evaluation of the EU ETS. Using French data he showed that the ETS had a significant and economically meaningful negative impact on carbon emissions of manufacturing firms regulated by the ETS.

As part of the CECILIA2050 project, Massimiliano Mazzanti (University of Ferrara) analyzed the effect of climate policies on companies’ innovation behavior, while Benjamin Görlich led a discussion about how to strike a balance between setting a robust carbon price signal and securing competitiveness. Eventually, Jakub Koniecki, Member of the Cabinet of EU Climate Commissioner Connie Hedegaard, brought in a policy maker’s perspective and summarized the Commission’s plans for future climate policy mixes.

The event concluded with a lively discussion touching on the trade off between stringency of climate policy and the threat of carbon leakage and the effectiveness of the EU preferred policy instrument of free allocations to deal with carbon leakage. Ralf Martin referred to some recent evidence generated by his team suggesting that overly generous allocations might stifle firms’ incentive to engage in “clean” innovation.

Ralf Martin, Imperial

ENTRACTE at ZEW’s Lunch-Debate in Brussels

On 18 March 2014, the Centre for European Economic Research (ZEW) launched its Lunch-Debate Series in Brussels. The goal of this series is to provide a forum for high-level experts from the policy and academic sectors to discuss key economic challenges in Europe and to explore innovative ideas in order to tackle the current crisis.

The Lunch-Debate Series features a dialogue between a ZEW economist and external experts, encouraging also the audience to join in on the discussion.

Kicking off this series, Prof. Andreas Löschel, Co-coordinator of ENTRACTE, Günther H. Oettinger, the European Commissioner for Energy, and two Members of the European Parliament, Prof. Vittorio Prodi and Sir Graham Watson, discussed the pros and cons of the 2030 Policy Framework for Climate and Energy as proposed by the European Commission in January 2014.

Andreas Löschel gave a short overview about the ENTRACTE project and its core themes, namely the interaction of climate and energy policy targets and instruments, arguing that the EC proposal has to be assessed in the light of these core themes. He also presented findings of the Impact Assessment of the EU
2030 Climate and Energy Framework in which ZEW was involved.

The speakers then engaged in a lively panel debate with the audience, consisting of approximately 120 participants from the European Commission and the European Parliament as well as industry associations, companies, research institutions and non-governmental organizations.

An enthusiastic applause concluded the first successful Lunch Debate on “Post 2020 Energy and Climate Protection Targets”.

*Oliver Schenker, ZEW*

**Policy Session at WCERE 2014 in Istanbul**

**Current Challenges for Emission Trading Systems**

The ENTRACTE project convened a successful policy session at the Fifth World Congress of Environmental and Resource Economists in Istanbul on June 30, 2014. The policy session brought together leading scholars from Australia, the United States, the European Union, and China. They discussed lessons learned and upcoming challenges in their respective jurisdiction concerning the design, as well as the political embedding of emissions trading schemes.

**Four Mayor Topics of Relevance for Emission Trading**

ENTRACTE co-coordinator Prof. Andreas Löschel welcomed interested researchers and panelists and gave an overview about the aim of ENTRACTE, its first findings, and its forthcoming tasks. Dallas Burtraw from Resources for the Future identified in his following talk four mayor topics of relevance for the market design of Emissions Trading Systems (ETS): allocation, prices, linking, and governance. He noted that auctioning as the preferred allocation method becomes increasingly accepted and the allocation less politically debated. But the three remaining topics of ETS market design are still discussed controversially. It is crucial to realize that emission markets are artificial markets set up by governments. Therefore, governmental interventions in those markets are less problematic than in other markets and price floors can be important instruments to ensure the functionality of these markets.

**Various Designs of Emission Trading Schemes in China, Europe, and Australia**

Following, Prof. Jing Cao from Tsinghua University gave an in-depth overview on China’s pilot regional emission trading schemes and their differences in design. She illustrated how these design elements, such as the included types of market participants, caused differences in trade volumes and price volatility.

Xavier Labandeira, Professor of Economics at the University of Vigo and the Climate Policy Research Unit at the European University Institute, as well as member of the ENTRACTE policy advisory board, then talked on the state of discussion in Europe and the advancement of the EU ETS after 2020. He clarified that the interaction with other policy instruments and targets, also on member state level, is crucial when aiming to understand the functionality of the EU ETS.

Prof. Frank Jotzo, also member of the ENTRACTE policy advisory board and Associate Professor at the Australian National University in Canberra, discussed the current state of climate policy in Australia. He emphasised the importance of politics for design choices, but also that design choices have a re-verse effect and matter for politics as well.

**Exchange on Lessons Learned as Key for Successful Climate Policy**

The individual experiences then got synthesised during the final round table discussion and the following question and comment round from the audience. This policy session showed that different lessons have been learned in different jurisdictions. An intensified exchange on lessons and evidence, as it is enabled through projects such as ENTRACTE, is key for a successful climate policy.

*Oliver Schenker, ZEW*
Publications

Designing an EU Energy and Climate Policy Portfolio for 2030: Implications of Overlapping Regulation under Different Levels of Electricity Demand
Florens Flues, Andreas Löschel, Benjamin Johannes Lutz, Oliver Schenker

The European Union’s current climate and energy policy has to operate under an ex ante unforeseen economic crisis. As a consequence prices for carbon emission allowances in the EU Emissions Trading System collapsed. However, this price collapse may be amplified by the interaction of a carbon emission cap with supplementary policy targets such as minimum shares for renewables in the power sector. The static interaction between climate and renewable policies has been discussed extensively. This paper extends this debate by analysing the efficiency and effectiveness of a policy portfolio containing a cap and trade scheme and a target for a minimum renewable share in different states of aggregate electricity demand. Making use of a simple partial equilibrium model of the power sector we identify an asymmetric interaction of emissions trading and renewable quotas with respect to different states of aggregate electricity demand. The results imply that unintended consequences of the policy interaction may be particularly severe and costly when aggregate electricity demand is low and that carbon prices are more sensitive to changes in economic activity if they are applied in combination with renewable energy targets. Our analysis of the policy interaction focuses on the EU, yet the conclusions may also be of relevance for fast growing emerging economies like China.

In: Energy Policy (forthcoming)
dx.doi.org/10.1016/j.enpol.2014.05.012

Energy Intensity Developments in 40 Major Economies: Structural Change or Technology Improvement?
Sebastian Voigt, Enrica De Cian, Michael Schymura, Elena Verdolini

This study analyzes energy intensity trends and drivers in 40 major economies using the WIOD database, a novel harmonized and consistent dataset of input–output table time series accompanied by environmental satellite data. We use logarithmic mean Divisia index decomposition to (1) attribute efficiency changes to either changes in technology or changes in the structure of the economy, (2) study trends in global energy intensity between 1995 and 2007, and (3) highlight sectoral and regional differences. For the country analysis we apply the traditional two factor index decomposition approach, while for the global analysis we use a three factor decomposition which includes the consideration of regional structural changes in the global economy. We first show that heterogeneity within each sector across countries is high. These general trends within sectors are dominated by large economies, first and foremost the United States. In most cases, heterogeneity is lower within each country across the different sectors. Regarding changes of energy intensity at the country level, improvements between 1995 and 2007 are largely attributable to technological change while structural change is less important in most countries. Notable exceptions are Japan, the United States, Australia, Taiwan, Mexico and Brazil where a change in the industry mix was the main driver behind the observed energy intensity reduction. At the global level we find that despite a shift of the global economy to more energy-intensive countries, aggregate energy efficiency improved mostly due to technological change.

dx.doi.org/10.1016/j.eneco.2013.10.015

Effective auctioning of European Union Emissions Trading Allowances in a Globalized Market for Carbon Dioxide
Jonathan Verschuuren, Floor Fleurke

The European Union Emissions Trading Scheme (EU ETS) is the largest trading program in the world to combat global climate change. However, the effectiveness of the system—scrutinized since its inception in 2005 by both economists and lawyers—is thus far flawed. The crucial importance of a well-developed implemented compliance chain has been neglected. Only after it was discovered that carbon trading fraudsters may have accounted for up to 90% of all market activity in some European countries, with criminals pocketing billions, according to European law enforcement agencies, the compliance issue received increased attention. The EU ETS legislation originally left a considerable amount of discretion to Member States. That decentralized approach pursued in the Directive has adversely affected the effectiveness of the system. Later amendments to the EU legislation on the ETS have gradually reduced the level of decentralization.

The latest changes made to the ETS, the ones that apply to the third trading phase (2013-2020), have greatly centralized the ETS. In particular, Auctioning Regulation 1031/2010 coordinates auctions by establishing
common auctioning platforms, sets forth sanctioning responsibilities of auction platforms in cases of suspected criminal or abusive behavior by participants, and endows financial and other competent national authorities with broad investigative and enforcement powers. In this contribution we will focus on how market abuse is prevented under this system, and we will examine what national and interregional regulators should take into consideration when designing and enforcing integrated auctioning systems.

in: Compliance strategies to deliver climate benefits
https://pure.uvt.nl/portal/en/publications/effective-auctioning-of-european-union-emissions-trading-scheme-allowances-in-a-globalized-market-for-carbon-dioxide%284e54bfa0-6f94-4eb0-9c16-0a769201f0e4%29.html

Environmental Policy Performance and its Determinants: Application of a three-level random intercept model
Elena Verdolini, Marzio Galeotti, Yana Rubashkina, Silvia Salini

We propose the use of a two level random intercept model to measure the degree of environmental policy performance of different countries and to study its determinants. Inspired by the literature on multilevel latent models and Item Response Theory (IRT), this framework treats policy commitment as a latent variable which is estimated conditional on the difficulty of the policy portfolio implemented by each country. We contribute to the study and scoring of environmental and energy policies in three main ways.

First, the model results in a ranking of countries which is conditional on the complexity of their chosen policy portfolio. Second, we provide a unified framework in which to construct a policy indicator and to study its determinants through a latent regression approach. The resulting country ranking can thus be cleaned from the effect of economic and institutional observables which affect policy design and implementation. Third, the model estimates parameters which can be used to describe and compare policy portfolios across countries. We apply this methodology to the case of energy efficiency policies in the industrial sectors of 29 EU countries between 2004 and 2011. We conclude by highlighting the future possible applications of this approach, which are not confined to the realm of environmental and energy policy.

Working Paper

After Monetary Policy, Climate Policy: Is Delegation the Key to EU ETS Reform?
Godefroy Grosjean, William Acworth, Christian Flachsland, Robert Marschinski

Since the crash of carbon prices in phase II of the EU ETS, many have argued that the low price mirrors structural failures requiring intervention. A wide range of reform options have been suggested, including delegating the governance of the carbon market to an independent authority. This paper analyses the debate by reconstructing the various arguments for or against reform. Three possible drivers of the price decline are investigated: (i) exogenous shocks; (ii) insufficient credibility; and (iii) market imperfections. It is argued that the extent to which a low price is problematic and warrants reform depends on the specific objectives

Working Paper

Environmental Regulation and Competitiveness: Empirical Evidence on the Porter Hypothesis from European Manufacturing Sectors
Yana Rubashkina, Marzio Galeotti, Elena Verdolini

This paper represents an empirical investigation of the “weak” and “strong” Porter Hypothesis (PH) focusing on the manufacturing sectors of European countries between 1997 and 2009. By and large, the literature has analyzed the impact of environmental regulation on innovation and on productivity generally in separate analyses and mostly focusing on the USA. The few existing studies focusing on Europe investigate the effect of environmental regulation either on green innovation or on productivity indicators such as exports. We instead look at overall innovation and productivity impact that are the most relevant indicators for the “strong” PH. This approach allows us to account for potential opportunity costs of induced innovations. As a proxy of environmental policy stringency we use pollution abatement and control expenditures (PACE), which represent one of the few indicators available at the sectoral level. We remedy upon its main drawback, that of potential endogeneity of PACE, by adopting an instrumental variable estimation approach. We find evidence of a positive impact of environmental regulation on the output of innovation activity, as proxied by patents, thus providing support in favor of the “weak” PH in line with most of the literature. On the other front, we find no evidence in favor or against the “strong” PH, as productivity appears to be unaffected by the degree of pollution control and abatement efforts. June.

Working Paper
associated with the EU ETS and the perception on the functioning of the market. A two-dimensional EU ETS Reform Space, comprising the degree of price certainty within the EU ETS and the level of delegation, is devised. Within the Reform Space, EU ETS reform options currently discussed are mapped. This descriptive structure offers a framework to clarify whether delegation responds to various concerns with respect to the EU ETS. Delegation might enhance flexibility under unforeseen circumstances, decrease policy uncertainty, and increase the credibility of long-term policy commitments. However, higher degrees of delegation face challenges regarding democratic legitimacy and political feasibility.

Working Paper: https://www.pik-potsdam.de/members/grosjean/Grosjean_Acworth_Flochslan
d_Marschinski_2014_IsDelegationKeytoEUETSReform.pdf

System responsiveness and the European Union Emissions Trading System

Luca Taschini, Sascha Kollenberg, Chris Duffy

Whether the European Union Emission Trading System (EU ETS) needs to be reformed, and if so how, is an important issue in the European policy debate. A key question is whether the objective of the EU ETS is solely to bring down greenhouse gas emissions at least cost, which it is achieving, or whether it also intended to deliver a price signal that induces low-carbon innovation, which it is not achieving on a significant level. The European Union Emissions Trading Directive is not explicit about the latter objective, giving those who argue that reducing greenhouse gas emissions is the only aim of the EU ETS, and that a reform of the system is therefore not necessary, a relatively good opportunity to do so.

This policy paper argues that reforming the EU ETS is justified whether or not one believes that stimulating low-carbon innovation is an objective of the EU ETS. In particular, this paper argues that a large part of the problem is that market agents believe there is an excessive market imbalance and, consequently, the price of allowances (EUAs) will remain low even when the European economy returns to growth. This arises because the regulator (the European Commission) is unable to respond to downward price shocks by withdrawing allowances.

The crucial point is to incorporate a responsiveness mechanism into the EU ETS so that it would change the perception of market agents that the price of EUAs can remain low for long periods after unexpected price shocks. A responsiveness mechanism would encourage regulated businesses to bank EUAs while the price is low. To be effective, the mechanism would have to be based on a transparent system of rules for determining when EUAs should be injected or withdrawn. The price trend over a given time period would appear to be the most transparent and simple trigger for a withdrawal or injection of EUAs. Here, the mechanism could extend Article 5 29(A) of the European Union Emissions Trading Directive which enables the injection of EUAs when, for more than six consecutive months, the EUA price is higher than the average price of the EUAs during the preceding two years. Accordingly, the mechanism would enable the withdrawal of EUAs, when for a given period (that which is stipulated in Article may or may not be the correct time period), the price trend is significantly lower than during a preceding pre-determined time period.

Once a withdrawal or injection of EUAs has been triggered, the European Commission will have to calculate the volume of EUAs to be withdrawn. This calculation should be based on the time remaining in the current market phase, the number of EUAs that remain to be auctioned and future projected emissions. If the mechanism described here is implemented, it could induce self-adjusting behaviour by market agents. When the price of EUAs either persistently rises or falls over a given time period (for instance 6–12 months), businesses will expect an intervention in the market. In particular, when there is a relatively higher rise in the price trend, businesses would face a situation where they expect an injection of EUAs. So, for those businesses in possession of excess of EUAs, it would seem to be in their interest to sell; for those businesses in shortage of EUAs it would seem to be in their interest to wait. When there is a relatively large decreasing price trend, businesses would face a situation where they expect withdrawal of EUAs. So, for those companies that are short of EUAs, it would seem to be in their interest to buy; for those businesses having an excess of EUAs it would seem to be in their interest to wait.

Policy Paper: http://www.lse.ac.uk/GranthamInstitute/wp-
content/uploads/2014/01/System-responsiveness-and-the-
EU-ETS.pdf
Planned Events & Workshops

February 17, 2015 – Workshop on Policy Interactions and Overlapping Policies (Milan, Italy)

On February 17, 2015 FEEM will host the Stakeholder Workshop on Policy Interactions and Overlapping Policies in its Milan offices.

The workshop will provide the perfect venue to present preliminary project results and interact with stakeholders, interested researchers and the wider public. The workshop will be organized to mirror the main research themes of the ENTRACTE project, namely the interaction of climate policies with Innovation and Technology Diffusion, Energy Policies and Competitiveness and Trade. Key outcomes of the workshop will be highlighting the lessons learned from the theoretical and empirical analysis carried out by the various research teams in the past two and a half years.

More details on the workshop agenda will be available soon on the ENTRACTE project website.

July or August 2015 - Brussels Final Conference (Brussels, Belgium)
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For further information on the project, please visit the project website:
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