

What, and where next, for carbon trading?



A Climate-KIC panel debate
Brussels, 24 September 2013

Report





The Debate

A group of experts from politics, industry and academia met in Brussels on 24 September 2013 to discuss one of the most contentious matters on the current political agenda: the European Emissions Trading System (EU ETS), and other emerging international emissions trading schemes.

The EU ETS is a key instrument of the European Union's efforts to combat climate change and reduce industrial greenhouse gas emissions. It is the biggest international system for the trade of greenhouse gas emission allowances and operates in 28 EU countries as well as Iceland, Liechtenstein and Norway. The system limits the emissions of carbon dioxide (CO₂) generated by more than 11,000 power stations, energy-intensive industrial plants and commercial airlines in these countries.

The panel, moderated by Jonathan Tyler, Chief Commercial Officer of Climate-KIC, included John Ashton, commentator and adviser on climate change politics and former UK diplomat; Pierre Dechamps, Adviser for Energy, Climate Change and the Environment at the Bureau of Policy Advisers to President Barroso of the European Commission; Christoph Grobbel, Chief Finance Officer at South Pole Carbon and Jörg Rothermel, Head of Energy, Climate Protection, Raw Materials at the German Chemical Industry Association (VCI).

Climate-KIC

Climate-KIC is the European Union's largest public-private innovation partnership focused on climate change, consisting of dynamic companies, the best academic institutions and the public sector.

The organisation integrates education, entrepreneurship and innovation resulting in connected, creative transformation of knowledge and ideas into economically viable products or services that help to mitigate climate change. Climate-KIC aims to stimulate creativity and entrepreneurship by supporting the development of start-up companies and innovative projects in the climate area.

Climate-KIC is one of three Knowledge and Innovation Communities (KICs) created in 2010 by the European Institute of Innovation and Technology (EIT). The EIT is an EU body whose mission is to create sustainable growth. Climate-KIC supports this mission by addressing climate change mitigation and adaptation.

www.climate-kic.org





Report

What, and where next, for carbon trading? A Climate-KIC panel debate

Climate-KIC recently held its first in a series of debates on topics relevant to climate change. A group of experts from politics, industry and academia met to discuss one of the most contentious matters on the current political agenda: the European Emissions Trading System (EU ETS), and other emerging international emissions trading schemes. The panel, moderated by Jonathan Tyler, Chief Commercial Officer of Climate-KIC, included John Ashton, commentator and adviser on climate change politics and former UK diplomat; Pierre Dechamps, Adviser for Energy, Climate Change and the Environment at the Bureau of Policy Advisers to President Barroso; Christoph Grobbel, Chief Finance Officer at South Pole Carbon and Jörg Rothermel, Head of Energy, Climate Protection, Raw Materials at the German Chemical Industry Association (VCI). Climate-KIC made it clear at the beginning of the debate that it explicitly took a non-partisan stance on this subject, and the views expressed are those of the panellists.

John Ashton set the stage for the debate with a short provocation. This is about politics, not policy, he argued. Rapid transformational change from a carbon intensive energy system to a carbon neutral energy system in all major economies – the aim of the ETS in the EU – will shift the pattern of power-relations in societies. In his view, the European Union hasn't yet summoned the critical mass of political will to convince all stakeholders that governments are serious about making this transformation. Because this is such a transformational project, and because price signals drive change that is essentially marginal and incremental, not structural, emissions trading can only ever be a secondary, not a primary policy tool, in driving the transition. In a sense, the cost of capital for low carbon infrastructure matters more than the price of carbon. That, he argued, is widely understood in the City of London but was not understood by many policymakers as the ETS was being established, and valuable time on other fronts has been lost. The EU is in a decisive phase in the battle between the forces of 'business as usual' and those of transformation, while 'business as usual' in fact hasn't delivered growth and competitiveness as expected. He regards the next phase of negotiations – the international summit in New York in 2014, followed by the UNFCCC in Paris in 2015 – as crucial for the global effort to build a growth model that is low carbon, resource efficient and resilient to shocks, and thus to respond effectively to climate change.

From a macro perspective – what are the alternatives to an ETS, if we are trying to regulate carbon markets?

Christoph Grobbel: Fundamentally, there are three ways of regulating a market and addressing the topic of reducing emissions: first, some kind of trading scheme, which we have now in the emission trading scheme; second, taxes, or subsidies as the opposite of it. Third, you can regulate a system with rules and laws, let's say on insulation of buildings, construction of power plants, etc. The question now is: What is the right instrument for which part of the industry? For the industry sectors that are today covered by the EU ETS, I think it was a good idea to implement the ETS. First of all, agreeing on a tax across a number of countries in a European context was not an alternative – we've expanded from 15 to 25 countries at that time and



The ETS only covers certain industry sectors at the moment, such as power generation, aluminium and chemicals production, and commercial aviation. Where is the system heading in the long term?

it's impossible to agree on an aligned tax across all European member states. If you remember the abatement cost curves by McKinsey, showing abatement potential on the x-axis and cost on the y-axis, you'll see a whole lot of opportunities on one end of the curve to reduce emissions at zero cost. In this area, you're best off with just regulating and enforcing new laws, on energy saving lightbulbs, for example. On the other end of the curve, there are high cost options for emission reductions. These are political decisions: if you want to, say, bring down the cost of solar photovoltaics, you can calculate how much in subsidies need to be poured into this to make it happen. Every doubling of installed capacity brings down the cost by 15%, and this is true across almost all industries. This is how subsidies are calculated to achieve a certain cost level, and from here you can pick and choose. We see this in Germany with solar photovoltaics. The middle of the curve is well suited for an emissions trading system. There is a homogenous group of industries, for which you can calculate emissions. Here, you can let the market take over and figure out the right price. The only problem is a misalignment of policy instruments, or even an overlap, for example the directive of energy efficiency and the EU ETS, with both targeting the same companies. The success of one policy instrument brings down the price in the ETS – that's the problem we are facing now, and hopefully will tackle.

The ETS only covers certain industry sectors at the moment, such as power generation, aluminium and chemicals production, and commercial aviation. Where is the system heading in the long term?

Pierre Dechamps: There are good reasons to only cover certain sectors. If you look at the abatement costs of CO₂, it's for the middle-range costs that the ETS is best suited. There are some very expensive abatement technologies which we might want to have in the longer term for the transition to a low carbon economy. Another aspect is the number of installations that we have in the ETS and the administrative cost associated to them. If we were to levy the ETS onto any small fugitive emission, it would become quite impossible to organize, and extremely expensive. There is probably scope to extend the coverage of the ETS. This is one of the five or six measures looked at in the structural reforms that the commission put forward almost a year ago, structural reforms that are going to be discussed by the parliament over the next months, in order to prop up the price in the ETS. We have had attempts on the aviation industry – not too successful so far, due to the dangers of starting a trade war as there is an extraterritorial dimension in there. We would have the same sort of difficulties for maritime transport. The number of exceptions that we have in the ETS might be one of the reasons why the ETS is not working as it should to control the emissions, at least from a price perspective. We know the number of exceptions, we know why they are there, but a reduction of all exceptions would probably start to solve the problem of a carbon price which does not reflect its true social cost. In terms of scope, it remains the main instrument in taking us onto the decarbonisation pathway. It's already planned beyond 2020 – the 1.74% reduction per annum is without any end – but if you do the calculations, the -1.74% per year does not take us where we want to be by 2050. It's not enough at this stage. This is another possible structural reform: an increase of that percentage. It is going to be discussed in our 2030 plans.

Christoph Grobbels: Pierre has pointed out a number of criteria which should be applied when defining which other sectors or gases should be included into





the EU ETS. The question is – what is the goal? The goal which is discussed now is to increase demand in the system, while the discussion should be around finding the best instruments to regulate individual sectors. These are two different goals. I like measures that bring the price to a more reasonable level and that bring more ambition to the European policy. Nevertheless, we should rather discuss not only increasing demand, but finding the best instrument for each industry.

Pierre Dechamps: We are addressing a problem: Climate change and greenhouse gas emissions. We have a vision 2050, we have intermediate dates with objectives. The ETS as it is at the moment is aligned towards 2020 objectives. When we discuss our 2030 objectives, we will have to revise the ETS trajectory itself. When we discuss the objectives for 2050 – at the moment we only have a vision – we will need to adapt the ETS in time to provide a predictable framework for the industry. Our difficulty is that we are not addressing a problem that has a solution in mathematical terms. We are addressing industrial sectors with very long lead times, and we have to try to provide predictability and the best pathway towards our vision 2050. Only from the point of view of controlling emissions, the ETS works perfectly well. For its secondary objective, which is to provide a signal for longer term investments to put us onto another trajectory, the price is too low. From that point of view, it does not work. Also to act as an example for the rest of the world, it does not work, because the price is too low.

Jörg Rothemel: This is the most important question for me: What is a long term investment, and what objectives do we need to induce such investments? If we're only looking at the numbers of the current ETS, which has a reduction factor of 1.74% per year until 2020 – reflecting a reduction of 21% from 2005 emissions level – I can just further calculate with 1.74% until 2050. The emissions trading sectors – energy and industry – have already reduced their emissions until 2005 by roughly 20% in comparison to 1990. We will reduce emissions by another 70% from 2010 until 2050 if we stick to the present 1.74% reduction factor. This is our contribution to the overall European reduction target of 50 to 80%. We don't need a new objective – if we stick to the current objective until 2050, the emissions trading sector will deliver the reduction target.

John Ashton: It's important to remember that we're dealing with the real economy, and people taking decisions in the real economy are part of what Isaiah Berlin called 'the crooked timber of humanity'. For a start, decision makers can never look at a single price signal. They are faced by a barrage of lots of different price signals, coming from all directions. Secondly, the decision makers that will actually determine whether you can mobilize investments in green infrastructure, whether you can get out of coal and gas for electricity or whether you can get out of liquid hydrocarbon fuels for transport – are people who don't just care about today's price. They are making investments depending on their expectations on what is going to happen to prices over decades ahead in markets that are essentially policy-driven. If you can't talk about it in concrete terms, which is about the structural transformation you're trying to bring about in the economy – no more coal and gas for electricity without CCS (editor's note: carbon capture and storage), no more liquid hydrocarbon fuels for transport, no more gas fired heating in buildings – unless you can bring that to life politically, it doesn't matter what we are doing in the technocratic bubble of the ETS, because the political foundation of it will not be stable. That kind of transformation can never be achieved by stealth. The political



We're still a reference point for communities around the world who are trying to emulate what we do.

class around the European economies at the moment are very uncomfortable about telling people when tough decisions are inevitable. That the era of cheap energy, for example, is behind us. You can only have transformation if you choose it. That means: making it explicit in the political choices that are being offered. If you trace back this problem of the ETS to its origin, it's that – in my view – we haven't done that. Because this is such a transformational project, and because price signals drive change that is essentially marginal and incremental, not structural, emissions trading can only ever be a secondary, not a primary policy tool, in driving the transition. In a sense, the cost of capital for low carbon infrastructure matters more than the price of carbon. That is widely understood in the City of London but was not understood by many policymakers as the ETS was being established, and we lost valuable time on other fronts.

The recent recession is very central to the debate in the press: the ETS proved not to scale correctly. There was a deterioration of the carbon price. How would you go back designing an ETS now, or in other words: how would you modify the ETS to compensate for those changes in demand?

Pierre Dechamps: If we didn't have the ETS now, we would probably not be able to establish anything like it because circumstances have changed drastically in between 2008 and now. We could try to have adaptive mechanisms: Automatic adaptation in the ETS quantities as a function of the economy and the price levels of the ETS. This again is part of the so-called structural reforms which are going to be discussed. They have defenders and opponents. On the one hand, you could say it's not good to try and manage the price by reserves, auctions and other instruments, because we should primarily let it work as a market. On the other hand, you could say that there are good reasons to support the price and make sure that it does not go below or above a certain level. We would probably not be able to design an ETS now because the circumstances have changed so much towards more arguments centered on competitiveness. Yes, it would be good to have an adaptation to quantities that are put to auction. One of the basic flaws of the ETS, when you look at it as a market, is that there is no adaptation of the quantities supplied. There is variation of the demand, which had to be expected. There is no adaptation whatsoever, without a political decision, on the supply side.

John Ashton: Despite the crisis of the ETS, we should not underestimate our accomplishment in getting this far. The commodity that we are trading is not like anything that we've constructed before. It is not a physical thing that we are trading, it is a negative thing – the absence of a unit of emissions. It is not like a currency, although it has some features with it in common. It took us hundreds of years to work out how to construct and regulate currencies in a stable way, and we still haven't worked it out, we still have currency crises. In the meantime, we have carried on with this experiment, we have developed a lot of experience and extremely valuable methodology. That's all worth a lot, and a return on the political capital we've invested. Despite the gloom here, we're still a reference point for communities around the world who are trying to emulate what we do.

Jörg Rothermel: The question we are discussing at the moment is about whether the current emissions trading system is working in a proper way, meaning that the price is correct. But what is the correct price for emissions trading? An energy company, for example, will say that they need a price of, say, €40 per ton to build





a low carbon gas fired power plant. A company that wants to install a CCS needs a different price. A solar photovoltaics or wind energy constructor again needs a different price. There is no correct price, but at three, four or five Euro per ton, the ETS will not induce any further investments in new technologies. But the question is: do we need these investments at the moment? We have to ask whether it is possible to invest in renewables to increase energy efficiency and at the same time not disturb the ETS. It is disturbed by other instruments like subsidies for renewables. If we only consider CO₂ reduction, we don't need further instruments next to the ETS. If we consider investments in new technologies, it may be useful to have additional instruments, but we have to realize that those have an influence on the ETS. If we only want to control the price of CO₂, it would be better to have a tax. Then it's really in our hands to fix a price, and we don't need a complicated system like the ETS.

Christoph Grobbel: The overall policy measures are clearly not balanced at the moment. In Germany for example, we have feed-in tariffs: Subsidies of 20 billion Euro per annum. The resulting emission reduction, per definition, is zero. Per definition, they reduce zero tons of CO₂, because they only feed into the power system which is part of the EU ETS, bring down the price in the EU ETS and allow for old coal plants to run. I just learned that E.ON is shutting down two CCGT plants (editor's note: combined cycle gas turbine), very efficient gas power plants. Our system is a combination of green electricity on one side, and very inefficient coal power plants on the other side. The effect of 20 billion Euro is completely lost. That means: we have cheap reduction opportunities in the sectors covered by the ETS with 5 Euro per ton, and at the same time we spend ten times more for emissions reduction on the other end. This is clearly not efficient, has caused big frustration and led to a credibility problem. Last year, Caisse des Depots in France calculated that two thirds of demand in the ETS between 2008 and 2020 is taken out of the system by conflicting policy measures. People don't believe in a joint European climate policy anymore. If we had a strong target for 2030, and people would believe that by then, we were on track for 2050, they would invest in energy efficiency technologies now, and buy credits now. If you were the owner of a coal power plant and you wanted to secure your long term production, you would probably buy credits and drive up the price. The problem is the credibility. Europe is not leading on a global scale anymore, even though it has been leading China and the US in setting up their own schemes. But they have learned from European mistakes and are now setting up more stable systems, in terms of prices, with reserved prices in auctions, for example.

Pierre Dechamps: A few words on the interaction of policies: If we go back to 2008, when the energy and climate change package was set up, there was the greenhouse gas reduction objective with the ETS as an instrument; the renewables were in there, and the energy efficiency directive was in there, planned to increase by 20%. All this was in the impact assessment of what the ETS was supposed to achieve and how it was supposed to be working. Yes, there are reductions in the amount of allowances needed by the market caused by renewables, but it was planned. The surplus of allowances that we are now building up until 2020, which is of the order of 2 billion emission allowances, is coming from other factors – the economic crisis, and the influx of international credits, CDM credits (editor's note: Clean Development Mechanism) and the like. This is another factor that could be



The European idea is to get away from small projects and really tackle an entire sector in developing countries, helping them set up their own schemes, and eventually buying credits from that new scheme.

addressed in the discussions of structural reforms. I don't like the idea to blame energy efficiency or renewables for the low price in the ETS. Without additional policy measures, we would not be on track with renewables.

What will the future of CDM look like, especially for micro scale projects?

Christoph Grobbel: Around 1.7 gigatons of international credits were planned from the beginning in the EU ETS. The only surprise is: there are four times as many credits available now and the price for international credits has crashed as well, they are worth even less than EU credits. If we had less international credits, their price would be closer to the European ones. I believe the future of individual projects is very bad. There is no support whatsoever from the main buyer, Europe, to buy any credits from individual projects. There is a certain support, however, for new market mechanisms. The European idea is to get away from small projects and really tackle an entire sector in developing countries, helping them set up their own schemes, and eventually buying credits from that new scheme.

Jörg Rothermel: The problem is the isolation of the European system. We have no international agreements on reduction targets in other regions. If we had caps in other countries, we could have a higher demand for credits, and the price would rise. We decided to combine the markets and to allow the use of credits as a safety valve for the price in the EU ETS. It is the only connection between the European market and the rest of the world. This was the reason why we allowed the use of CDM credits. Currently we are the only region in the world with such a system, and with a demand, but there is a huge amount of credits out there and this has led to the low price of the credits.

What are the other two big economies – the US and China, neither of which has a full ETS in place yet – trying to do in the future?

Pierre Dechamps: I'd like to start by saying a few words – speaking on my own behalf, not on behalf of the European Commission – on the issue of competitiveness. I find it a worrying debate that if you look at the competitiveness of an industrial sector, you would want to have minimal environmental guidelines, a minimum cost of carbon, and minimize the cost of labour in comparison to your competitors. It appears to be a race to the bottom, for the entire global economy. If we had a decrease in cost of labour in all those industrial sectors, it would take our GDP's down in a spiral. I wonder if the debate should not be centered around productivity rather than on competitiveness, which, in economical terms, is different. There are other values attached to productivity than to pure competitiveness. But this is really a parenthesis.

On the US and China: it is true that regional trading schemes are emerging, which is interesting. They are in different circumstances, and the Chinese are betting a lot on selected renewable sectors, which is good. The US recently have seen their greenhouse gas emissions going down because of a massive switch from coal to gas, which is good as well. I see it as good news, especially in the context of international climate change negotiations in 2015 in Paris. The emission reductions that will be achieved in China based on renewables, and that the US are already achieving based on a switch to gas, are things they can logically put on the table. The US administration could very well come to Paris and say that they have reduced their greenhouse gas emissions by x percent, compared to the past. They are in a better position now than they were at the Copenhagen negotiations.





Why aren't we just taxing products coming from energy intensive sectors by calculating the emissions they have produced retrospectively?

John Ashton: I would say, be careful what you wish for. We have a global climate policy system and a global trade system which are both very fragile at the moment. If we make a wrong step, we risk bringing both down in ruins. I actually think that if we lose the aspiration of maintaining an open global economy and trade and investment system, we lose everything and end up in fragmentation. We can't afford that. Border tax adjustments of the kind that you suggest are so emotive that they would carry a great risk, even if they would work in an economic model. There is an intellectual case for it, but it's the real economy that matters, that's where we live.

Jörg Rothermel: There was a proposal by the European Commission to tax emissions after they occurred, and to raise a tax on imported products. But it's hard to define a system to calculate these taxes. We would need to adapt the taxes to the prices we have for the same products within the EU. Also, this would only solve the problem of imports from other regions, but would not solve the problem of exports from the EU. The chemical industry in Germany that I am representing exports 80% of its production. Most of it goes to other European countries, but one third is exported to countries outside Europe. This problem would not be solved by an import tax on steel or chemical products. You can calculate a tax on an imported ton of raw steel, but how do you calculate the tax on an imported car or machine? It would be impossible to figure out the right number. Ideally, we would have the same conditions and one ETS for all regions of the world.

Editor's note: the transcript of the debate has been shortened to increase readability.



Speaker's bios

Christoph Grobbel *CFO South Pole Carbon*

Christoph joined the South Pole group in 2007 after 12.5 years with McKinsey & Company, Inc. where he worked as a Senior Expert for Emissions Trading and Electric Power & Natural Gas. At McKinsey Christoph was responsible for the Review of EU Emissions Trading Scheme for the EU Commission in 2005 and 2006 and advice to the UK Department of Industry and Trade concerning National Allocation Plan for 2008-2012 Kyoto period.

At South Pole he is the CFO, Chief Sales Officer and one of the main shareholders. With 16 offices around the globe South Pole is market leader in Gold Standard credits and was elected Best Project Developer in Environmental Finance's Voluntary Carbon Markets Survey in 2011, 2012 and 2013. Beyond high quality emission projects South Pole is very active in new carbon market consulting and climate friendly solutions.

Christoph holds an MSc in Mechanical Engineering from Karlsruhe University, an MSc in Energy Management & Policy from the University of Pennsylvania, Philadelphia, and IFP School, Paris, and a PhD in Economics in the field of Energy from Oldenburg University. His studies also included extensive internships in France and South Africa.

Jörg Rothermel *Head of Energy, Climate Protection, Raw Materials, German Chemical Industry Association (VCI)*

Dr Rothermel has been an expert in climate change policy, clean air issues, emissions trading and energy policy for almost two decades. He worked in different functions for a chemical company before joining the VCI in 1997, where he became Managing Director of the Sector Group Organic Chemical Industry, the most energy intensive sector within the chemical Industry.

Since 2001, he is also a member of the board of the German Agency for renewable raw materials (FNR), where he has been chairman of the board from 2005 to 2007 and again since 2010. Since 2010, he is Director of the Energy Intensive Industry Association in Germany (EID). Dr Rothermel holds a PhD in chemistry.



Pierre Dechamps

Adviser, Energy & Climate Change, Bureau of European Policy Advisers (BEPA) to President Barroso, European Commission

Dr Pierre Dechamps joined the Bureau of European Policy Advisers to President Barroso as the adviser for energy, climate change and the environment in January 2008. From 1998 to the end of 2007, he worked for the European Commission Directorate General for Research as project officer for clean coal technologies and later on for CO₂ capture and sequestration, after working in the industry for CMI (Cockerill Mechanical Industries), one of the world's leading heat recovery boiler manufacturers for power stations, where he quickly became the Head of the R&D Engineering Department.

Pierre worked for 5 years as an assistant at Liège University, in the power generation department, and holds an electro-mechanical engineering degree from Liège University, a Master of Science from Cranfield University and a PhD from Liège University.

John Ashton

Commentator and adviser on climate change politics; former UK diplomat

John Ashton is an independent commentator and adviser on the politics of climate change. He is also well known for the role he has played in climate diplomacy.

From 2006-12 John served as Special Representative for Climate Change for three successive UK Foreign Secretaries, spanning the current Coalition and the previous Labour Governments. The UK Foreign Office pioneered during this time a diplomacy-led approach to climate change that came to be widely admired.

He was a co-founder and, from 2004-6, the first Chief Executive of the think tank E3G. From 1978-2002, after a brief period as a research astronomer, he was a career diplomat, with a particular focus on China.

He is a Distinguished Policy Fellow at the Grantham Institute for Climate Change at Imperial College London. He holds visiting professorships at the London School of Economics and the London University School of Oriental and African Studies. He is a Trustee of the UK Youth Climate Coalition and Tipping Point, and a non-executive Director of E3G.



www.climate-kic.org

