Carbon Pricing for Low-Carbon Investment

Executive Summary

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About CPI

Climate Policy Initiative (CPI) is a policy effectiveness analysis and advisory organization whose mission is to assess, diagnose and support the efforts of key governments around the world to achieve low-carbon growth. CPI is headquartered in San Francisco and has research centers around the world which are affiliated with distinguished research institutions. Research centers include: CPI at Tsinghua, affiliated with the School of Public Policy and Management at Tsinghua University; CPI Berlin, affiliated with the Department for Energy, Transportation and the Environment at DIW Berlin; CPI Rio, affiliated with Pontifical Catholic University of Rio (PUC-Rio); and CPI Venice, affiliated with Fondazione Eni Enrico Mattei (FEEM). CPI is an independent, not-for-profit organization which receives long-term funding from George Soros.

About Climate Strategies

Climate Strategies is an international organisation that convenes networks of leading academic experts around specific climate change policy challenges. From this it offers rigorous, independent research to governments and the full range of stakeholders, in Europe and beyond.

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1 Introduction

The EU European Trading Scheme (EU ETS) started operating in 2005 and was established with the EU Climate Package of 2008 as a permanent mechanism for Europe. Now in its second phase, policymakers are evaluating its success to date and considering next steps for its evolution. With the ultimate goal of a low-carbon economy, key questions have been: does the ETS facilitate a shift from carbon-intensive investments to low-carbon investments? What improvements can policymakers apply to accelerate low-carbon investment?

To answer these questions, Climate Policy Initiative (CPI) and Climate Strategies conducted a multi-institute analytical project, "Carbon Pricing for Low-Carbon Investment" from February to December 2010. Led by CPI Berlin director Karsten Neuhoff, participating organizations included London School of Economics, DIW Berlin, ETH-Zürich, ISI-Fraunhofer, Universidad Carlos III de Madrid and University of Erlangen-Nürnberg. Studies in the project include the following:

Climate Change, Investment and Carbon Markets and Prices – Evidence from Interviewing Managers
Ralf Martin (LSE), Mirabelle Muûls (Imperial College) and Ulrich Wagner (Universidad Carlos III de Madrid)

Relative Importance of Different Climate Policy Elements for Corporate Climate Innovation Activities: Findings for the Power Sector
Karoline Rogge (ISI Fraunhofer), Tobias Schmidt (ETH Zürich) and Malte Schneider (ETH Zürich)

The Role of CDM Post-2012
Alexander Vasa (CPI) and Karsten Neuhoff (CPI)

Emissions Trading Schemes under IFRS - Towards a true and fair view
Madlen Haupt (CPI) and Roland Ismer (University of Erlangen-Nürnberg)

This policy summary describes key findings and implications from the studies included in the project and the workshops hosted in Berlin and Paris. Papers from the studies can be found at www.climatepolicyinitiative.org and www.climatestrategies.org.

2 ETS Effectiveness

One objective of the European Emissions Trading Scheme, to reduce the investment in carbon-intensive assets, has been successfully achieved. Of the allowances that were reserved in 2006/2007 for new or expanded carbon-intensive installations, only 16 percent had actually been requested by 2009. It is however difficult to assess to what extent this result should not also be attributed to the more attractive investment opportunities in renewable energy sources, and the economic constraints imposed with the financial crisis.

This leads to the main question of whether the EU ETS has, in addition to reducing investment in carbon-intensive programs, also contributed to increased investment in low-carbon technologies. This could be measured against explicit targets or against 'business as usual' scenarios. However, explicit targets are only defined for renewable energy sources and it is difficult to create a 'business as usual' scenario against the background of financial and economic crisis.

We evaluate the investment response to EU ETS by assessing its impact on three steps companies typically follow in the investment process.[1]

First, the low-carbon policy framework must capture the attention of the relevant decision makers in an organization in an environment of many competing interests and pressures.

Second, the policy framework must allow companies to assess the new opportunities and challenges of the framework when making operational, investment and strategic decisions.

Third, the policy framework must provide an enabling environment that allows business to realize low-carbon projects.

In the following summary, we present the results of the project, addressing these three requirements for low-carbon investment choices, and explore options for policymakers to further catalyze low-carbon investment.

[1] Barr, Stimpert, Huff, 1992. Cognitive change, strategic action, and organizational renewal. Strategic Management Journal, 13(S1), 15-6.

3 Capturing attention of companies

We first explore whether the EU ETS, as part of the low-carbon policy framework, captures the attention of the relevant decision makers in an environment of many competing interests and pressures. For most organizations it is the combination of long-term climate policy objectives with EU ETS or technology specific support schemes that matters for strategic decisions.

The role of EU ETS in the policy framework

- For power generators the relevance of long-term climate policy targets for innovation and investment activities is highly correlated with the relevance of the EU ETS. (ISI-Fraunhofer/ETH Zürich survey of 65 power companies).
- Companies with higher expectations of the future stringency of permit allocation are more likely to pursue low-carbon innovation (LSE/Imperial/Carlos III interviews with 800 manufacturing companies).
- For producers of renewable energy technologies, technology specific support schemes are important for decisions about innovation and sales. However, relevance of technology specific support schemes is highly correlated with both long-term targets and EU ETS (ISI-Fraunhofer/ETH Zürich).
- The analysis points to the importance of combining long-term climate policy targets (as expressed in emission targets, renewable targets, and the EU ETS cap), economic incentives created by carbon prices emerging from EU ETS, and tailored technology support schemes, to encourage low-carbon investment.

Stringency

The survey results show that for many companies, climate policy is still a less important factor in investment decisions than other aspects of the business environment (ISI-Fraunhofer/ETH Zürich). One reason is likely to be the stringency of the ETS:

- About 40% of companies report that the stringency of the EU ETS in phase II allowed them to continue business as usual. For phase III this share declined to 10% - illustrating that companies expected during the survey in 2009 increased stringency of EU ETS post 2012.
- Moreover, the share of companies that expect fundamental change in their operations and investment increased from 4% to 10% between phase II and III. (LSE/Imperial/Carlos III)

The surveys suggest that the current 20% emission reduction target and the level of resulting carbon prices encourage many companies to consider climate policy a relevant topic. However, most companies do not yet consider the stringency sufficient to trigger a shift to low-carbon strategies.

Free Allowances

With the ETS' free allowance allocation, costs of CO_2 emissions are not accounted for, while investment costs are attributed to the budgets of business units. The LSE survey revealed that within the EU ETS, companies that fall just short of the thresholds established for free allowances, i.e., those who need to pay for their allowances after 2012, are more engaged in climate-change related product innovation, than companies that will continue to receive free allowances. This result suggests that the ongoing practice within the EU ETS of free allowances for the manufacturing sector leads to less innovation.

4 Providing Clarity for Decision-making

We next explore whether the climate policy framework provides clarity for decision-making. In particular, we explored whether the EU ETS cap, the CDM as a complementary policy to the ETS, and financial accounting practices, impact companies' abilities to assess opportunities.

ETS Cap

The EU ETS directive has set a cap on ETS emissions that declines at a rate of 1.74% per year from 2013, unless reset, until 2050. This creates a clear, long-term framework to inform company strategy on policy constraints. As the EU ETS translates the scarcity of emissions credits into a carbon price, it also encompasses an enforcement mechanism to deliver the cap.

However, the resulting trajectory from the current cap reduction schedule results in emission reductions of only 51% by 2050 for total EU emissions, well below the commitment of 80-95% formulated by the EU and Member States.[2] This points to a need for further tightening of the EU ETS cap to align the policy instrument with the policy objective.

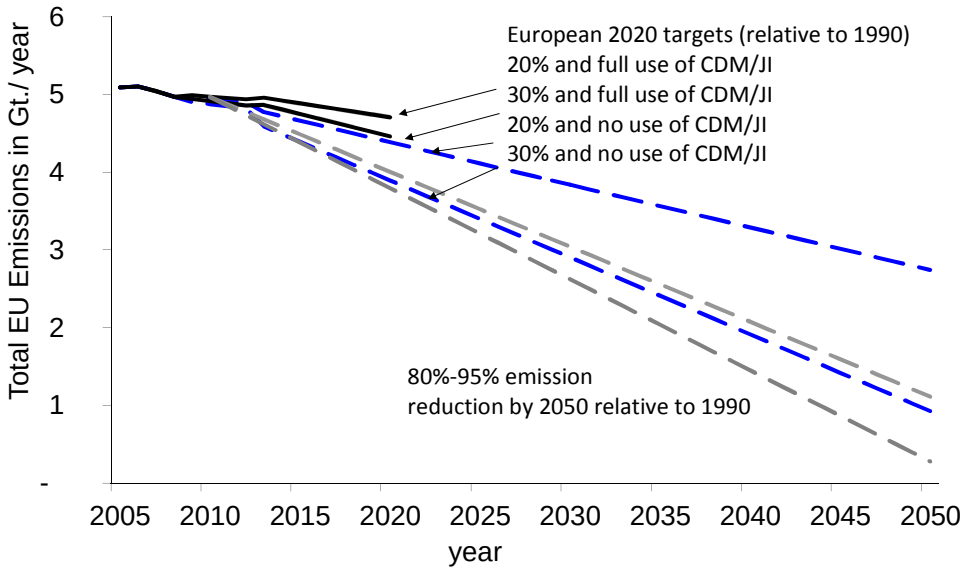
CDM

A major challenge for investors in interpreting the climate policy framework emerges from the Clean Development Mechanism (CDM). Installations covered by the EU ETS can use CDM credits, called Certificates of Emission Reductions (CER), to cover a share of their verified emissions. Under existing rules, the use of CERs could allow emissions from EU ETS installations to exceed the current cap by an average of 5.4% in the period 2008-2012. How much of this potential is ultimately used is uncertain, as is the affect that using CERs will have on the ultimate price of EU ETS Allowances. Currently, CERs trade at a 25% discount to ETS allowances. One interpretation of the discount is that the market expects that there will be more CERs available than can be absorbed under current market rules and that CERs have been bid down in price as a result. However, there are other possible reasons for this discount, and uncertainty generated by the relationship between CER and ETS markets increases the difficulty in basing investment decisions on the ETS price.

Use of the CDM mechanism reduces the effective target for EU emissions reductions. Figure 1 compares the EU emissions trajectory at the 20% and 30% reduction targets with and without CDM against the ultimate objective of reducing EU emissions by 80%-95% by 2050. Only a 30% target without CDM would fall within a linear path to the long term reduction target.

[2] This sentence and the corresponding Figure 1 have been updated on 4th February 2011 - initially 47% instead of 51% total EU emission reductions were projected for 2050. EU Presidency Conclusions EU October 2009: http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/110889.pdf

Figure 1: Impacts of offset use on EU emissions trajectory and low-carbon opportunities[3]



The objective of the CDM mechanism is to link climate policy in developed and developing countries, but CDM is increasingly scrutinized for its effectiveness as a co-operation mechanism. In particular it is questioned whether CDM emission reductions are additional, whether differences between mitigation costs and allowance prices create rents that are not available for mitigation, and whether uncertainty about prices limit the contribution CDM can make to finance low-carbon projects.

The focus of negotiations in Copenhagen and Cancun on Nationally Appropriate Mitigation Actions (NAMAs) points to the importance of domestic policies and measures. The CDM mechanism is structurally less suited to support national governments in their implementation. Revenue and rents from the CDM mechanism can even create incentives to delay domestic action and NAMA implementation. Thus, support for NAMA implementation in developing countries might be more effective, if some EU companies buy allowances from auctions and some of this revenue is used internationally, than if EU companies buy CDM credits.

The analysis points to the need for a strategy to phase out the use of offsets (CDM/JI) to provide a clear investment framework for Europe. It does require that alternative financial support mechanisms for low-carbon development in poorer countries be appropriately resourced.

Accounting Practices

Current International Financial Reporting Standards (IFRS), of particular importance for listed European producers, do not capture the impact of the EU ETS adequately and can thus misinform strategic management choices and investor assessments. For example, prevailing accounting practices do not capture the value of free allowance allocation and treat them differently than allocations that are purchased, even though the two e of allocations have equal economic value. The differential treatment creates distortions between countries and sectors with different free allocation levels, and hides potential future risk exposures that will emerge with declining shares of free allowance allocation (Haupt/CPI and Ismer/University of Erlangen-Nürnberg).

[3] The factors used for the continuation of mitigation beyond 2020 were the linear reduction factors of the total EU cap from the period 2010-2020, resulting in a yearly reduction beyond 2020 of the cap by 55 million tonnes in the 20% and by 99 million tonnes 30% case.

A fair value approach allows for the initial recognition of free allowances at their true economic value. The subsequent use of a deferred income position can adequately reflect the benefit of free allocations and offsetting liability in quarterly reports. Further clarifications with respect to the coherent accounting treatment of hedging strategies seem crucial to ensure transparency.

5 Create an enabling environment for low-carbon projects

In addition to attracting companies' attention and providing clarity for decision-making, the policy framework must ultimately contribute to business environment that allows for the realization of low-carbon investment. While the carbon price can contribute to the financial viability of a low-carbon project, uncertainty about the future carbon price may complicate decision-making particularly for financing of projects.

Carbon Price Uncertainty

One option for increasing the stability of the carbon price is the banking of CO_2 allowances. Accounting provisions under the IFRS can support this practice if they differentiate between the treatment of allowances held for speculative purposes and for compliance purposes. It will be important for future IFRS to ensure that the banking of CO_2 allowances for mid-term compliance does not result in misleading profit figures due to mandatory quarterly re-evaluations at fair value. Such requirement would not only discourage companies to bank allowances, but could even create a situation where at times of volatile carbon prices, companies decrease their banking of allowances to reduce volatility in quarterly reporting.

To reduce uncertainty over CO_2 prices, many have suggested introducing a price floor. This could be implemented, for example, with a pre-announced reserve price across EU ETS allowance auctions. By eliminating the risk of very low carbon prices, price floors can reduce the risk for financing and reduce the cost of capital. In our study's surveys, the importance attributed to long-term climate policy targets points to an additional aspect to be considered in the design of price floors. If a price floor is set not only to address the risk of a very low carbon price, but to compensate for an insufficiently stringent emission trajectory, then the link between the carbon price and the emission target is broken. This might undermine the positive interactions between short-term incentives and long-term climate policy frameworks. This suggests that it is better to strengthen emission targets than to use a price floor if the stringency of EU ETS is perceived to be insufficient by policymakers.

Required payback time for Investments

The LSE survey shows that corporate investors typically require that energy efficiency investments pay back in less than four years. In cases where equipment and buildings are used over the long-term, policies should provide support for a longer-term perspective (e.g., policies that facilitate the use of energy service companies to assume the longer-term costs of energy efficiency programs).

Importance of other factors for project realisation

The ISI-Fraunhofer survey indicated that the ETS alone may not be sufficient to drive low-carbon investments. The study pointed to a variety of other factors that companies consider more important than the ETS for investment choices. For example:

- power generators report that access to fuel and public perception that affects the permitting process are important factors for investment decisions, and
- power technology companies consider technology-specific policies such as feed-in tariffs as the most important factors for sales and R&D investments.

This points to the importance for governments and private actors to identify the necessary actions by private and public actors for their implementation This is in line with the commitment of all developed countries in the UN negotiations in Cancun to formulate low-carbon development strategies or plans (III A 45).

6 Conclusion

The ETS was designed to deliver a carbon price for Europe, with specific provisions to ensure its robustness in the absence of carbon pricing regimes in other parts of the world. To date, it has been an essential and effective policy instrument in Europe, though a number of adjustments to the scheme, as well as complementary policies, will be needed to accelerate low-carbon investment.

This project has focused on the role of European policy frameworks to facilitate this investment, ultimately catalyzing a low-carbon transformation as well as creating opportunities for companies and jobs. The EU ETS is an essential component of the policy framework to support low-carbon investment, because of the credibility it lends to targets in 2020 and beyond, and because the carbon price it delivers makes more low-carbon options viable.

This study has identified policy improvements that can be pursued at the national and European level, and applied to specific sectors or across all economic actors. The policy improvements can help capture the attention of investors, provide clarity for decision-making, and create an enabling environment for the realization of low-carbon investments.

In December 2010, after four years of negotiations between governments and industry, discussions about the scale, scope and benchmarks for free allowance allocations were concluded. This creates a long-term and robust framework to now jointly explore specific measures to accelerate low-carbon investments.