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Research by Conducting Interviews in European Companies”

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The Effects of the EU ETS on Companies: Research by Conducting Interviews in European Companies

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Abstract

We study the effects of the European Union Emission Trading Scheme (EU ETS)—which was introduced in January 2005—on companies by conducting interviews in some German and UK firms. In this paper, we demonstrate that although the introduction of the EU ETS has increased awareness of the importance of efforts to reduce global warming and emission costs, it has had little influence on the companies' CO₂ abatement efforts during the first period.

1. Introduction

Since January 2005, the EU has introduced the EU ETS in order to control greenhouse gas emissions, including CO₂ emissions; this scheme is the first of its kind in the world. We are primarily interested in studying how the EU ETS affects the management of the concerned companies, its effectiveness in reducing greenhouse gas emissions, and its economic effects. In this regard, we visited some German and UK companies that have facilities covered by this scheme and met the concerned officials in the companies to discuss their EU ETS introduction-related activities.

2. The Outline of the EU ETS

The EU is obligated to reduce greenhouse gases by up to 8% within the first commitment period (2008–2012) of the Kyoto Protocol. This protocol set the obligations for each country; however, the EU's obligation to achieve the target as a whole could be

replaced by each country's individual obligation. Therefore, based on the burden sharing agreement, the EU allocated the CO₂ emission reduction obligations to each country. The government of each country obtained the approval of the EU Commission for their National Allocation Plan (NAP), which decides the allocation of each facility covered by the EU ETS based on its domestic laws. Subsequently, the initial allocations for CO₂ emission were distributed to each facility based on this NAP.

The EU ETS currently covers CO₂ emissions from all of the larger sources in the power and heating sector, oil refineries, and coke ovens and the production of ferrous metals, cement clinkers, glass, tiles, bricks and porcelain, pulp, paper, and board—about 11,000 installations in all. The commitment period is divided into the first phase (2005~2007) and the second phase (2008~2012); the initial allocation for the first phase has already been completed. The penalty for the failure to achieve the target has been set as 40€ for the first phase and 100€ for the second phase.

Thus, companies that have facilities covered by the EU ETS should reduce CO₂ emissions as per the initial allocation by the end of the first phase. If they fail to do so, they must purchase EU Emission Allowances (EUA) from the market equivalent to their exceeded CO₂ emissions. On the other hand, companies that have achieved excessive CO₂ emission reduction can sell them as EUAs in the market. The EUA price rose after the opening of the market to 30€ in April 2006; however, the price fell to almost half that value and has continuously decreased to a present value of less than 10€. This is because of the prediction that the market will loosen in the first phase.

3. Research Methodology

First, we obtained a list of companies that have facilities covered by the EU ETS; we were supported by the Japan External Trade Organization (JETRO) in Düsseldorf. We then sent letters to the companies located in London and Düsseldorf requesting them to agree to respond to our questionnaire during a research meeting. Our main questions were as follows: First, how do you evaluate the introduction of the EU ETS and the environmental tax regarding CO₂ emission reduction; additionally, what is your prediction regarding the EU ETS after the first commitment period of the Kyoto Protocol? Second, has the EU ETS changed the behavior of your company from the viewpoint of CO₂ emission reduction activities? If so, could you show us the change? Third, do you believe that regulations such as the EU ETS lead to innovative environmental technologies and long-term increases in company profits?

Responding to this letter, a UK and a German company informed us of their readiness for participation. With the kind support of the Embassy of Japan in the UK, three

additional UK companies consented to the interview. Thus, a total of five meetings were arranged. The types of companies were glass and ceramics manufacturers (Germany), air terminal facility management, electric power, and steel (UK).

The meetings were held in London and Ludwigshafen from October 16–19, 2006.

4. Results

(1) Company A (in Germany): Glass and Ceramics Manufacturer

[Q 1] How do you evaluate the introduction of the EU ETS?

- The EU ETS has made us very busy because we have to process complicated cost calculations and a large amount of documentation.

[Q 2] Has the EU ETS changed the behavior of your company?

- At the moment, the EU ETS has not changed our behavior significantly because we had already set voluntary targets to reduce energy consumption.
- We recognize that it is important to compare the marginal abatement cost of CO₂ and the price of emission permits. However, in effect, it is difficult to measure the abatement cost. The EU ETS also enhances our ability to monitor our own development.

[Q 3] Do regulations such as the EU ETS lead to innovative environmental technologies?

- We are not completely convinced of that assertion.

[Other Comments]

- Our CO₂ emission allowance is 95% of the baseline (the averaged actual emissions from 2000–2005).
- One of the most difficult aspects of the emissions trading in Europe is the difference in the schemes among the member countries. Every country has a different scheme.

(2) Company B (in the UK): Airport Terminal Facility Management

[Q 1] How do you evaluate the introduction of the EU ETS?

- Our CO₂ emission allowance is 85% of the baseline. We expect to have some surplus because the energy sources are being switched to LNG and energy-saving measures are being promoted. Therefore, the introduction of the EU ETS is beneficial for us in

that we can sell the surplus emission permits.

[Q 2] Has the EU ETS changed the behavior of your company?

- We have voluntarily been reducing greenhouse gas emissions in order to cut costs and enhance our reputation. Therefore, the introduction of the EU ETS has not changed our behavior significantly.
- Rather than the EU ETS, the Climate Change Levy has a greater impact on our company. This is because the Climate Change Levy is less uncertain than the EU ETS.

[Q 3] Do regulations such as the EU ETS lead to innovative environmental technologies?

- In the case of our company, no.

[Other Comments]

- The municipal ordinances in London stipulate that we should replace 10% of our energy sources with renewable ones when we extend the new terminal buildings. We are currently formulating a plan to address this issue.

(3) Company C (in the UK): Power Company (Affiliated Energy Trader)

[Q 1] How do you evaluate the introduction of the EU ETS?

- From the point of view of our company, we are positive about the scheme because we can now trade another commodity.
- The negative aspect of the scheme is the speculative investment that distorts the market.

[Q 2] Has the EU ETS changed the behavior of your company?

- Probably, no. This is because power companies can easily pass on the EUA costs to their consumers. Although this could affect the consumers, the EU ETS will not essentially change the behavior of power companies.

[Q 3] Do regulations such as the EU ETS lead to innovative environmental technologies?

- Yes, they do. For example, with this scheme, the participants are earnestly working toward developing carbon capture technologies. Moreover, such R&D investments

will ensure financial profits for them in the long run.

[Other Comments]

- The CO₂ emission allowance for the UK power industry is 85% of the baseline.
- The CO₂ emission cap for the sector has become more severe because the power industry in the UK faces less competitive trade pressure.

(4) Company D (in the UK): Power Company

[Q 1] How do you evaluate the introduction of the EU ETS?

- It might be somewhat difficult to reduce CO₂ emissions with the EU ETS because it is nearly impossible to predict future carbon prices as compared to the long-term payouts of investments made to reduce CO₂ emissions.

[Q 2] Has the EU ETS changed the behavior of your company?

- The EU ETS has changed our behavior to some extent in that we will switch fuels from coal to gas (and vice versa) in our plants in response to the carbon price fluctuations to optimize the production cost of electricity. However, this cannot be undertaken for new physical investments for CO₂ emission reduction in the long run.

[Q 3] Do regulations such as the EU ETS lead to innovative environmental technologies?

- Hopefully, yes; the carbon constraint will lead to investments in innovative technologies. However, that constraint will not usually bring financial profits to companies in the long run because these investments require capital expenditure.

[Other Comments]

- The allowance for the UK electricity sector in 2005 was 135 million tons and the actual emissions were 172.6 million tons. We will buy emission permits to cover the gap and we have no option other than to pass the cost (approximately 800 million euros) on to the customers.
- We have collaborated with some universities and are now making constructive suggestions regarding environmental policy to the UK government.

(5) Company E (in the UK): Steel Manufacturer

[Q 1] How do you evaluate the introduction of the EU ETS?

- The EU ETS is very demanding for our sector. This is because the UK steel industry is facing very severe international competition and cannot completely pass on the CO₂ emission reduction costs to the customers. We have already reached the point where we cannot make any more progress without a substantial change in technology.

[Q 2] Has the EU ETS changed the behavior of your company?

- Effectively, no. In fact, we had some tough negotiations with the UK government and explained to them that our investment plans had already been fixed and that we are facing very severe international competition. Consequently, we effectively obtained a 100% allowance (relative to the BAU CO₂ emission). This means that the EU ETS has not significantly changed our behavior.
- However, the EU ETS has probably made our employees aware of the importance of CO₂ emission reduction. The idea of pricing CO₂ emissions can be included in future investment plans.

[Q 3] Do regulations such as the EU ETS lead to innovative environmental technologies?

- In the short term, no. However, the answer could be yes in the long term. The EU ETS by itself has not led to innovative technologies thus far. However, the scheme has made people aware of the importance of CO₂ emission reduction. Therefore, the technological innovation could potentially take place in about 20 years.
- With respect to the question concerning the company's financial profits, the answer is probably no, because the costs involved in developing a new technology are very high.

[Other Comments]

- The EU steel sector cannot fully pass on the CO₂ emission reduction costs to its customers. This is because iron is one of the most commonly traded commodities in the world and we have to compete with rivals that have not ratified the Kyoto Protocol.

5. Summary of Results

After an investigation of the companies in Germany and the UK, we obtained the following results.

The evaluations of the EU ETS differ for each type of industry; some firms feel that this scheme has heavily burdened them from the viewpoints of procedure and severe global competitiveness. On the other hand, some other firms welcome this scheme because it generated new trading. Further, each firm has responded to this scheme assiduously and it is being vigorously implemented. However, some enterprises expressed the concern that the price determined in the EUA market has been distorted by speculation, although it was recognized that the EUA price theoretically shows the marginal abatement cost of CO₂ emissions.

With regard to whether the EU ETS had influenced company behavior, the general opinion was that there was no significant influence. The reasons for this are as follows: First, the amount of the initial distribution was restricted to those areas in which many types of businesses were located. Second, some firms can easily pass the abatement cost along to consumers. Third, it would be difficult for firms to make investments to reduce CO₂ emissions by only taking into account EUA price trends, because it is difficult for them to forecast these trends. However, most firms agreed that the awareness regarding the relationship between global warming measures and enterprise management deepened with the recognition of the importance of global warming measures and the CO₂ emissions cost.

Moreover, as for whether the introduction of the EU ETS can lead to the development of innovative environmental technologies, most firms recognize the possibility of such innovation but do not expect to earn potential profits due to these technologies.

6. Discussion

We now discuss the effects of the EU ETS on firms from the viewpoints of economic efficiency, equity, transparency, simplicity, and efficacy for environmental improvement.

Economic efficiency

The EU ETS was introduced as a system that efficiently reduces CO₂ emissions in the EU region by inducing cost minimization behavior for the firms' CO₂ emissions abatement. However, the EU ETS actually results in a low incentive to invest in environmental technology and to convert new facilities, at least during the first period. Therefore, the incentive of the firms' cost minimization behavior of CO₂ emission abatement in the short run may be very low and may not act sufficiently from an economic efficiency viewpoint. This is because many installations received higher levels of initial allocations and the future trend of the EUA price is uncertain.

Equity

The EU ETS can ignore equity. This is because some firms are not entirely satisfied with the level of the initial allocation they received, while other firms need not carry out abatement efforts because of the excess allocations they received.

Transparency

It is thought that there was a lack of transparency in the process by which the governments decided the amounts of initial allocations to each enterprise in the first period. This may have resulted in adjustments between specific types of businesses due to political considerations.

Simplicity

It appeared to be fairly simple for the firms to understand the EU ETS. However, they expended significant amounts of time and energy to calculate the emissions levels. As a result, many firms experienced increased costs as a result.

Efficacy for environmental improvement

The introduction of the EU ETS generally had little effect on the firms' behavior. Therefore, the effectiveness of the EU ETS on CO₂ emission reduction could not necessarily be higher during the first period. However, we recognize that the EU ETS led to the enhancement of the monitoring function and the concern for the problem of global warming.

7. Conclusion

We greatly benefited by interacting directly with some of the officials in charge of the EU ETS in European businesses. We were able to exchange candid opinions with them, even though this investigation was not able to conduct many case studies.

The EU ETS is an extremely ambitious system that uses the market mechanism. It appears that each country undertook a political adjustment to be the first to introduce and establish the EU ETS as each industrial area. Therefore, we found that the EU ETS has given firms major incentives to invest in CO₂ emission reduction during the first period. However, a more severe distribution of the EUAs in the second period of the EU ETS (2008–2012: the first commitment period of the Kyoto Protocol) is expected to gradually reveal positive effects on the firms' capital investment and so on. It is worth considering a UK firm's important comment that the government's clearly indicating

the direction of a long series of environmental policies seems important in order for the firms to decide on environmental investments to reduce CO₂ emissions. Thus, it is necessary to refer to the environmental policies in our countries in the future.

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