

KIER DISCUSSION PAPER SERIES

KYOTO INSTITUTE OF ECONOMIC RESEARCH

Discussion Paper No.740

“The Impact of the European Union Emissions Trading Scheme
on the Finnish Economy”

Seiji Ikkatai, Ikuma Kurita, and Katsuhiko Hori

November 2010



KYOTO UNIVERSITY
KYOTO, JAPAN

The Impact of the European Union Emissions Trading

Scheme on the Finnish Economy:

Interviews with Four Business Companies in Finland

Seiji Ikkatai*, Ikuma Kurita, and Katsuhiko Hori

The Research Center for Advanced Policy Studies,
Institute of Economic Research,
Kyoto University

November 18, 2010

1. Introduction

We visited and interviewed the Confederation of Finnish Industries EK—the representative organization of Finnish industries—and three Finnish companies under the European Union Emissions Trading Scheme (hereafter EU ETS), introduced by the Confederation in December 2009.

The following questions were asked in the interviews:

- Q1. How do you evaluate the introduction of the EU ETS and environmental tax regarding CO₂ reduction?
- Q2. Has the EU ETS changed the behavior of your company from the viewpoint of CO₂ reduction activities? If so, could you show us the change?
- Q3. Do you consider that regulations such as the EU ETS lead to innovative environmental technologies and long-term increase in company profit?
- Q4. How do you evaluate the EU decision that more emissions quota would be auctioned in the scheme after 2013?
- Q5. How do you calculate the CO₂ reduction cost?

Moreover, general issues related to global warming were discussed in the interviews.

* Corresponding author. E-mail: ikkatai@kier.kyoto-u.ac.jp

2. Interviews with Business Companies in Finland

The interviewed companies are listed in the following table.

Table 1: List of Organizations Interviewed

Company	Location	Date
Company A	Helsinki, Finland	Feb 11, 2010
Company B /Oil Refinery	Helsinki, Finland	Feb 11, 2010
Confederation of Finnish Industries EK	Helsinki, Finland	Feb 12, 2010
Company C /Energy Company	Helsinki, Finland	Feb 12, 2010

The results of the above interviews are reported below.

2.1. Company A

A1: The EU ETS is not a policy but an instrument.

- The EU ETS is reasonable from a macroeconomic viewpoint, but it is not good from a microeconomic viewpoint because it is applied to companies in the EU while it is not applied to those outside despite the existence of worldwide market competition. And also the implementation and more precisely allocation until 2013 is not done based on efficiency/benchmarking (which ensures level playing field between companies inside EU ETS)
- We appreciate that in the future the free allocation is determined based on benchmarking (i.e. the efficiencies of equipments). But as the overall reduction target is at least -20%, it seems that even for the best operations allowances are not distributed as a free allocation based on need.

A2: It could be said either way.

- We have made effort to save energy since the energy-saving

program in 1990's. And even before this we have considered energy (coal) saving as due cost element.

- We have changed to consider the R&D project from an environmental viewpoint, the cost, benefit, and the image value of the energy-saving efforts as well.

A3: There are three ways to abide by the cap under the EU ETS: the decrease in output, innovation, and the purchases of emissions credits.

- As for innovation, the advanced breakthrough technologies that are under development at present could be put to practical use within five years if all things in the very large development projects go well.
- When we are making efforts to invest in new technologies we take the increase in the energy and CO₂ price into account, but it's the combination of energy markets, EU ETS (so energy consumption and supply balance and climate change actions together is causing this)
- We cannot judge whether it will make profit since it depends on the relationship between its benefit and cost and the situation of the global economy, but at least, we will be at a disadvantage in the global economy due to the discrepancies of the mid-term targets among countries (e.g. the 3% reduction compared to 1990 in U.S. and 20% in EU) and at the moment unilateral implementation of instruments such as EU ETS.

A4: Auction is basically good. It is fair among firms within the EU. We can compete with its cost imputed to prices, and the companies who succeed to hold down their abatement costs can be at an advantage.

- However in reality at the moment, it is totally wrong system from a viewpoint of global competition (i.e. for the sectors that are in global competition).

A5: We do not calculate it actually as EU ETS markets gives to prices for reduced CO₂ ton automatically.

- Our decision follows the observation of three factors of the

abatement cost, the EU ETS prices, and the CDM credit prices.

Others:

- In principle, it will be the best to cover the whole world by the unique system, but it will be difficult to agree the benchmark values for free allocation between all participants.
- The industrial structure also needs to be changed under the situation that we have to reduce emissions by 80% before 2050. It also requires changes from demand side, as well as from supply side, specifically, preferences and life styles of consumers. Moreover, while we need to create productions caring not only about the abatement cost of CO₂ emission but also about lifecycle cost that includes material cost, we should notice that the EU ETS focuses only on the CO₂ emission in the production processes.

2.2. Company B / Oil Refinery

A1: We recognize the importance of the climate changes. We need to do something to mitigate the global warming and to accommodate to it, and the EU should contribute to cope with this problem as a top runner in the Kyoto Protocol's first commitment period. However, we need take the same action all over the world.

- Regarding the EU ETS, it was worthy as a preparation period, although there was a problem with fairness during the first period from 2005 to 2007.
- Nobody wants to pay cost in the short run, but we cannot have the business chances without it. However, we should notice that biogasoline reduces CO₂ emission at the consumption stage while the EU ETS is concerned in CO₂ emission at the production stage.

A2: We are continuously making effort to improve the processes of oil refining.

- Our interest in the environmental issues has been changed from the water quality through the air to CO₂. And it caused the consideration in fuel usage to be added in our business strategy.

A3: If the EU ETS price is sufficiently high, it may lead innovation, but

it will also lead the carbon leakage. In addition, on one hand, an increase in the EU ETS price will cause the reduction of its demand, but on the other hand, it will cause the increase in consumer awareness, which pushes to innovate in low-carbon products.

- The occurrences of innovation and profit depend not only on the EU ETS price but also on the changes in the oil prices.

A4: The EU's oil refineries will suffer a serious loss from the global competition when auction is introduced. The Russian oil refineries will gain an advantage by exporting it to Finland.

- We are anticipating that new products like renewable diesel would ameliorate the situation.

A5: We do not calculate it practically. We decide the production and business plan considering the various factors.

Others:

- We are making effort to design and put to practical use more clean products with the four changes taking into account: the changes in raw materials, the development of legal systems, the climate changes, and dieselization.
- Actually, there is no room to improve the oil refining processes technologically any longer since our industry consumes little energy to produce.
- We are paying attention to the CCS, since it is a national project. But it is also the fact that it costs enormous amounts of money and energy to achieve its aim. We think that the government should invest more to the development of renewable energy rather than to the CCS.

2.3. Confederation of Finnish Industries EK

A1: We are anxious that an increase in the carbon price should raise the energy price.

A2: We are changing from the existing oil and coal fuels to low-carbon energy fuel like biomass.

- With this as a turning point, we made the Energy Efficiency Agreement with the Ministry of Trade and Industry.
- The use of heat pump, as well as the supply by the district heating, is getting prevailing as heat supply in household.

A3: We hope so.

- But the firm's profit depends on the economic environment like GDP level.
- While it has a large impact on the existing carbon-intensive firms, it will yield green firms.

A4: We object to it even now. We are concerning that it is applied only within the EU but not outside.

Others:

- We have a negative view regarding border adjustment. We need the system of free trade.
- On one hand, we are expecting that power consumption in Finland will continue to increase although it fell down in 2008 compared to 2007 due to economic recession. On the other hand, we need to fill the gap between the power supply and demand while the two of the four nuclear power plants become obsolete.

2.4. Company C / Energy Company

A1: We were critical in the introductory phase because ETS should be global. Also, there are several levels: global, EU, country, region, company.

- In addition, there are several targets. Renewable, non-ETS linked etc. Different targets are inside the main target.
- Taxes and other mechanism for example feed-in are country based. In these circumstances it is challenging to realize a level playing field.
- However, ETS as a mechanism works as planned: CO₂ has a price and emissions have decreased in EU, according to survey.

A2: We have changed our behavior, but the fact is that we should

generate energy even under the EU ETS unless consumers change their awareness on energy consumption.

- While the EU ETS price is low at present, the CO₂ abatement cost depends on the changes in the primary energy prices.

A3: We are aiming at the achievement of carbon neutral company by 2050.

- While regulations lead innovation, they also have the aspect that tends to restrict firm's growth and financial capacity.
- The financial capacity and a clear perspective of the long-term policy hold the key to realize innovative technology.

A4: When the cap and trade system is not global and the emission targets are relatively low outside EU increasing auctioning volume in EU ETS will only lead cost increase in EU.

- The share of distribution by auctioning will become one driver to determine the auction price.
- The EU needs to care about unfairness between industries with and without the application of the EU ETS and between countries inside and outside the EU. Especially, the latter includes the carbon leakage problem, which will be resolved if the worldwide institution or carbon market could be established.

A5: We calculate the marginal abatement cost in part of investment planning.

- We need to consider comprehensively the factors such as the share of free allocation and the target share of renewable energy production rather than to compare between the marginal abatement cost of CO₂ and the EU ETS price.

3. Summary of the Interviews

The interviews clarified how the companies view and respond to the introduction and implementation of the EU ETS. The results of the interview are summarized in this section.

1. In general, all companies supported the general framework of the EU

ETS and shared the view that they must implement some measures to tackle global warming. However, most of them criticized the actual manner of implementation. In particular, they expressed concerns about the allocation and carbon leakage problems.

2. While some companies mentioned that they have constantly made efforts to conserve energy even before the introduction of the EU ETS, some companies stated that the EU ETS has in fact changed their behavior. For example, one of them pointed out that the EU ETS influenced it to use low-carbon energy resources like biomass instead of fossil fuels. This seems to indicate that Finnish companies affirmatively take actual measures against global warming, triggered by the implementation of the EU ETS.
3. Most companies anticipate that the EU ETS will promote innovative environmental technology, although this depends on the future economic situation. One company aims to practically apply advanced breakthrough technology that it has been developing within the next five years.
4. While most companies supported the distribution of emissions quota by auction, they were concerned about the actual implementation because of the carbon leakage problem.
5. Regarding the marginal abatement cost, all but one company answered that they do not calculate it. However, we could not obtain information about the actual calculation process from the company that calculates it.
6. Interestingly, the Confederation of Finnish Industries EK, objects to border adjustment, stating that this contradicts the idea of free trade.

4. Concluding Remarks

Since 2006, we have interviewed the EU companies, asking similar questions throughout. A comparison of past interviews with the interviews conducted in this year reveals the following features:

1. Similar to the past interviews, companies complained about the method of the actual emissions quota distribution.
2. In contrast to past interviews, the Finnish companies seem to have changed their behavior because of the introduction and implementation of the EU ETS. Some of them answered that they have begun to use

low-carbon energy resources like biomass instead of fossil fuels; others mentioned that they have shifted their focus from water quality to CO₂ emissions.

3. Finally, the companies generally seem to support the auction of emissions quota, although they tend to oppose its actual implementation because of critical problems like global competition. This is in contrast to the past interviews, where they were completely against the auction.