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“The Impact of the European Union Emissions Trading Scheme on the Polish Economy:  
Interviews with Four Companies in Poland”

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# The Impact of the European Union Emissions Trading Scheme on the Polish Economy:

Interviews with Four Companies in Poland

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## **Abstract**

This paper reports the results of interviews with four Polish companies. They indicate that Polish companies tend to evaluate the effects of introducing the European Union Emissions Trading Scheme (EU ETS) in 2005 positively. The regulations provided the alternative view that firms need to consider the environment in their business model and obtained valuable information for the improvement of energy losses. However, there are also several negative views related to the implementation of EU ETS. Some firms are concerned that the economic competitiveness of Poland will be adversely affected by the regulations, as the country is dependent on coal.

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## 1. Introduction

In December 2010, we mailed a questionnaire and request for interview to about 100 Polish companies that have combustion equipment of a size large enough to be covered by the EU ETS. We received three acceptances and one reply to the questionnaire by the mail.

In the interviews, we asked the following questions:

- Q1. How do you evaluate the introduction of the EU ETS and environmental tax regarding CO<sub>2</sub> reduction, in light of the recent economic recession?
- Q2. Has the EU-ETS changed the behavior of your company from the viewpoint of CO<sub>2</sub> reduction activities? If so, could you expound on what changes have occurred?
- Q3. Do you think that regulations such as the EU-ETS lead to innovative environmental technologies and a long-term increase in company profit?
- Q4. How do you evaluate the EU proposal that more emissions quotas should be auctioned in the scheme after 2013?

In addition to the above questions, we asked about and discussed other general issues surrounding the EU ETS and global warming. The Polish companies interviewed are listed below.

**Table 1: List of Companies Interviewed**

Company	Location	Mode	Date
Company A / district heating	Suburban Warsaw, Poland	Interview	Feb 10, 2011
Company B / district heating	Suburban Warsaw, Poland	Interview	Feb 10, 2011
Company C / oil related	Suburban Warsaw, Poland	Interview	Feb 11, 2011
Company D / steel related	Suburban Warsaw, Poland	Mail	Feb 9, 2011

## 2. Interviews with Companies in Poland<sup>1</sup>

### 2.1. Company A / district heating

Q1. How do you evaluate the EU ETS and environmental tax in light of the recent economic recession?

- From a macroeconomic viewpoint, it has become important to be economically efficient since the economic transition in 1989, which caused the closure of inefficient firms and promoted the adoption of new technology. However, it is now difficult to foresee the economic situation after the global recession, the changes in systems including the EU ETS, and the degree of the increase in energy and electricity prices.
- From a microeconomic viewpoint, it is important to comply with laws and regulations, as well as to be economically efficient. However, increases in energy prices affect the life of residents.
- An increase in the clients of district heating led to an increase of emissions, causing the problem of the cap constraint of the allowances. To avoid this, improvement of energy efficiency is needed.
- Moreover, there is a problem regarding competition of large companies against small companies that are not covered by the EU ETS.

Q2. Have you changed your behavior because of the EU ETS?

- We have added one employee and trained all staff to comply with the environmental regulations.
- As a result of considering environmental factors in our operational structure, we have started to examine the introduction of biomass and solar systems.
- We plan to introduce a cogeneration system.

Q3. Does the EU ETS induce innovation in environmental technology and yield long-run profit?

- It promotes innovation in new technology in general, but the problem

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<sup>1</sup> Notice that the content of the interviews in the followings is rearranged and summarized by the authors so as not to change speakers' intentions.

is that its regulations have become onerous financial constraints for introducing new technology in small companies; they import new technology rather than develop it domestically.

Q4. How do you evaluate the EU proposal of the emissions quota auction after 2013?

- It has disadvantages for Poland in the EU because the country is dependent on coal.
- We are also concerned that the regulations might weaken the economic competitiveness of Poland.
- The current environment of uncertainty makes it difficult for us to foresee the economic situation and the trend of other countries after 2013.

Others:

- At present, no taxes other than the VAT are levied on coal, natural gas, or electricity.
- The EU ETS covers combustion equipment over 20MW. However, it is not evaluated according to the output base but according to the fuel input base. For example, it is beneficial to reduce fuel input by increasing thermal efficiency, even if the amount of heat is equivalent. Recently, the thermal efficiency of the equipment of our company was improved, and the amount of fuel input was reduced. Thus, it will be below the criterion of the EU ETS and we will exit the EU ETS.

## 2.2. Company B / district heating

Q1. How do you evaluate the EU ETS and environmental tax in light of the recent economic recession?

- Various obligations and regulations will improve the environmental quality, but the procedure for monitoring, distributing quota, and certifying emissions was somewhat troublesome. Also, a problem arose in that necessary information was not conveyed in these procedures.
- In the first period of the EU ETS (2005–2007), there was a sufficient number of quotas distributed. However, even though we merged with another company and integrated and improved its facilities, we could not receive additional quotas. Thus, our verified emission was substantially over the distributed quota in the second period (2008–2012). After that, we could receive additional quotas by negotiating with the government, and the shortage was settled.
- Despite early confusion, we have a sufficient quota at present.
- However, we are concerned about issues of equity, in the sense that companies with small combustion equipment are not covered by the EU ETS.

Q2. Have you changed your behavior because of the EU ETS?

- The introduction of the EU ETS promoted the reduction of energy waste. Specifically, we received useful information through various calculations and examinations of coal calorie and its execution. Energy efficiency increased from 70% to 82%.
- At present, we are proceeding with thirteen projects. Nevertheless, the mayor hesitates to raise prices because our company is county owned.
- To compensate for the cost of these thirteen projects, we are thinking of using the EU fund, which is aimed at helping developing countries. We are currently applying for it. One of these projects includes the introduction of a cogeneration system.
- On the issue of fuel conversion to renewable energy, we are considering using wood pellets. However, the supply for wood is not stable, so we will not use it at present.

Q3. Does the EU ETS induce innovation in environmental technology and yield long-run profit?

- The EU ETS gives new perspectives on potential solutions and technology.

Q4. How do you evaluate the EU proposal of the emissions quota auction after 2013?

- We have not yet purchased allowances, so it is difficult for us to predict the future with such little information.
- If we were to pass the cost of purchasing allowances through to the customers, they might move from district heating to using natural gas.
- Because the benchmark amount of free allocation is also according to the top runner standards based on natural gas, it is not easy to exceed them.

Others:

- In the future, we will a) introduce new technology, b) improve energy efficiency, and c) repair the old equipment for reducing energy losses. These activities must be balanced and economical.

### 2.3. Company C / oil related

Q1. How do you evaluate the EU ETS and environmental tax in light of the recent economic recession?

- In general, we think it is a well-defined system.
- Common rules have been applied in other countries and regions, and they have examined a trade of allowances under the instruments. Thus, we can get information about cost, which makes it easy for us to make rational decisions. In the sense that the EU ETS leads to these kinds of changes in decision making, we evaluate the regulations in a positive manner.
- But it is also true that the more reduction of emissions we achieve, the harder it will be to achieve further reductions in emissions.
- We may have to shut our operation down if we can't buy a sufficient amount of allowances, as the rise in its price due to the expansion of production and the increase of emissions are linked to each other.
- In general, the global recession led to a contraction of production; it thus yielded a surplus of quotas and profit by selling its surplus. But because of the effort to invest in infrastructure after the recession in Poland, our company continues to expand production.

Q2. Have you changed your behavior because of the EU ETS?

- We could achieve savings on energy cost as well as CO<sub>2</sub> emissions by shifting our production from winter to summer if the abatement cost of countermeasures is lower.

Q3. Does the EU ETS induce innovation in environmental technology and yield long-run profit?

- It will promote the use of better technology for companies that consume a lot of energy and emit a lot of CO<sub>2</sub>. But, in the case of our company, the share of energy cost in total production cost is low. In other words, companies face different situations depending on the scale, production structures, and so on.
- If the development of environmental technology is limited, we will transfer our production outside countries covered by the EU ETS, where the cost is lower. If it is not possible to do this, we will cut

production.

Q4. How do you evaluate the EU proposal of the emissions quota auction after 2013?

- In the second period (2008–2012), we can sell allowances because we will have a surplus while we are expanding our production. But because the amount of free allocation decreases by 30% owing to introducing auction, we will face a difficult situation in the future.
- We are now making efforts to reduce greenhouse-gas emissions, but we may have to buy allowances in case it is inadequate for the future. In this case, we have to pay costs for not only production but also allowances.
- The price of allowances will rise in the future. However, the share of energy cost in total production cost is low in our company, so we believe it will not directly affect our business very much. But it may indirectly affect our business through the rise in electricity prices.

Others:

- There are three gaps for the EU ETS: 1) the gap between countries covered and not covered by the EU ETS, 2) the gap between the production and consumption sides, and 3) the gap of conditions among countries covered by the EU ETS.
- Regarding the first gap, countries in South America and China can make good investments because they haven't introduced the emission-trading scheme yet.
- Regarding the second gap, because the EU ETS covers only the production side and not the consumption side, customers don't care if we produce goods with lower emissions on the consumption side.
- Regarding the third gap, countries are in different situations. For example, Poland is dependent on coal, while it has cheaper energy and labor. Under such circumstances, we have to compete with other countries in the EU that have higher technology. In this situation, a rise in energy costs will cause a decrease in Poland's GDP. In other words, production cost is critical in competition, so a country or a company with a higher production cost structure will have to shrink or close its operation.

- Innovation in environmental technology is important for the EU ETS to succeed, and resources are required for innovation to succeed. These resources include economic, technological, and industrial factors. Although developed countries have such resources, Poland has a poorer resource base than these countries.
- With the current environment of uncertainty, companies without flexibility can't survive. A binding framework like the EU ETS is difficult for us in the short run, but it will make environment and business more compatible in the long run. In so doing, the consumer's outlook must change gradually, too.

## 2.4. Company D / steel related

Q1. How do you evaluate the EU ETS and environmental tax in light of the recent economic recession?

- In most cases, free allocation of CO<sub>2</sub> allowances for the second trading period (years 2008 to 2012) were based on actual emissions from 2005 to 2007. Allocations did not take into account anticipated growth in steel demand. Paradoxically, if there was not a global crisis in 2009, the Polish steel industry, not having a sufficient number of allowances, would have purchased quotas on the market. In this context, the EU-ETS did not impact our financial condition.
- However, the eventual implementation of the so-called carbon taxes will undoubtedly negatively impact our financial results. Electricity produced through furnace oil is a large item in our costs. The price of electricity in Poland is currently the highest in the EU. Introduction of the carbon tax for the energy industry will cause a further increase in energy prices and will negatively affect the financial situation of the Polish steel sector. This situation may result in the outflow of private capital from the Polish steel sector to other countries where steel production is not burdened by excessive taxation. Poland is already importing about 60% of the steel used in the country.

Q2. Have you changed your behavior because of the EU ETS?

- In general, not much. From the late 1980s to the present day, Steel-Works in Warsaw has completed a number of important projects to modernize the plant (for example, eliminating outdated technologies, changing the fuel in the furnace of rolling mill, constructing modern steel and rolling mills). The main motives of these investments were economic in nature (a significant reduction of costs and determination to remain at the market), but they also integrated environmental considerations. Thanks to this plant modernization, we have achieved a significant reduction in CO<sub>2</sub> emissions. In 2009, CO<sub>2</sub> emissions fell by around 690 thousand tons compared to 1988 (reduction of 90%, while reducing the production by approximately 33%). This huge effort, according to the original objectives of the Kyoto Protocol, should be rewarded by “early

action” incentives. Unfortunately, this didn’t happen.

- Currently, the Polish steel industry is modernized and restructured. Simple methods for achieving reductions in CO<sub>2</sub> emissions have been exhausted. We are therefore skeptical about large projects in this area. Of course, we continue with extensive efforts to improve our energy economy (reduced consumption of electricity and natural gas, maximum usage of process heat, etc.), which translates into reducing carbon dioxide emissions.

Q3. Does the EU ETS induce innovation in environmental technology and yield long-run profit?

- Yes, of course. In the steel sector, CO<sub>2</sub> emissions are closely dependent on companies’ energy management; thus, they have a significant influence on the economic situation of companies. In our plant, we emphasize the reduction of production energy intensity; thus, our technologies are becoming more environmentally friendly. The greatest impact of the EU-ETS on introducing environmentally friendly technologies can be observed in obsolete companies, which “slept away” the previous years. They did not previously modernize, and now they have the opportunity to use the EU-ETS system to reduce the costs of necessary investments.

Q4. How do you evaluate the EU proposal of the emissions quota auction after 2013?

- I have a negative view on the subject. Although our sector is included in the sector exposed to the “escape of CO<sub>2</sub> emissions,” we will get minimal allocation of free allowances. We will have to buy all the rest. We also fear that after 2012, the price of electricity in Poland will increase considerably, and this will certainly have a negative impact on our profitability.

Others:

- The entire iron and steel industry produces only about 5% of total CO<sub>2</sub> emissions in Poland (data from 2008, only for installations covered by EU-ETS). In Poland, the largest CO<sub>2</sub> emitter (approximately 75%) is the energy and heat sector, as it is based on

brown coal and hard coal combustion.

- In the iron and steel industry, integrated steel companies performing the full cycle of production, based on blast furnace technology, are most important CO<sub>2</sub> emitters. This is not our case. Our company is a “mini mill,” where the process is limited to a steel mill and two rolling mills. Our company produces less than 1% of CO<sub>2</sub> emissions of the Polish steel sector.

### 3. Concluding Remarks

After the transition of the country's political and economic system in 1989, modernization and privatization have drastically reduced greenhouse gas emissions in Poland. The reduction of greenhouse gas emissions seems to have peaked at the current stage. Moreover, Poland needs to balance the increase in energy consumption accompanied by economic growth after the political and economic transitions and the existence of the cap of emissions quota under the EU ETS. Thus, it becomes more and more important to improve their energy efficiency to cope with these issues. Fuel conversion is also an important issue in Poland. The country is trying to shift gradually away from coal, which is abundant in Poland, to natural gas, which has lower CO<sub>2</sub> emissions. However, the county-owned district heating companies seemingly have difficulty raising prices to compensate for the cost related to improvement of energy efficiency and fuel conversion.

Regarding the effects of introducing the EU ETS in 2005, the Polish companies we interviewed tend to evaluate it positively. They mentioned, for example, that it provided the alternative view that they need to consider environmental factors in their business, and that they obtained useful information for the improvement of energy efficiency by measuring it to verify the amount of emissions. Regarding the auction that is mandated in the EU ETS starting from 2013, they referred not only to the direct effect of requirements of purchasing allowances on their business but also to the indirect effect of the increase in production cost due to the rise in electricity prices. Moreover, some of them are concerned that the economic competitiveness of Poland, which is dependent on coal, as well as of other EU countries might be weakened. In addition, they mentioned that it is difficult to foresee the future situation of Poland and other countries in an environment of uncertainty.

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