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Emission Trade Systems and the Role of Market Power

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1. Introduction

This paper aims to examine the role of market power within an emission trade system. First, an overview about the main features of an emission trade system (ETS) is provided in order to endow the reader with the knowledge necessary to understand the interrelation between the design of an ETS and the occurrence of market power. In a second step, the paper presents the two types of market power before pointing out the main factors influencing the potential monopoly or monopsony power of market participants. Third, the problem of "Hot Air" relative to market power is discussed starting with the definition of the term followed by an analysis of the impact of "Hot Air" on market power. Finally, the conclusion highlights the main challenges relative to market power in ETS and suggests a solution to render international emission trading more efficient.

2. Functioning of an emission trade system

There exists a wide range of emission trade systems (ETS) all over the world and each of them differs in their targets, coverage, ambition, and design characteristics. A great deal of countries and regions have already gained valuable experiences with ETS such as the European Union, the United Kingdom, Norway, Switzerland, the United States, Canada, Australia, New Zealand, and Japan. Among all ETS, the European Union's ETS (EU ETS) is the largest and most progressive in place. It has been established in response of the Kyoto Protocol and has been adjusted in order to comply with the Copenhagen Accord goal consisting in limiting temperature rise to 2° degree. (Hood 2010:6-11)

As mentioned above, there are numerous ETS that each displays different characteristics. However, due to time constraints, this chapter will merely focus on the main features of an ETS, which seem crucial for understanding the functioning of an ETS. Therefore, first the economical principle of an ETS is summarized prior to examining how the coverage, the cap setting, and the allocation of allowances influence the functioning and the efficiency of an ETS.

2.1 Economical principle

The main principle of an ETS is that liable entities, which are responsible for emissions and which are required to report emissions, must hold allowances for the level of emissions generated by their production. This policy aims to put a price on greenhouse gas (GHG) emissions and thus enables the integration of the social cost of GHG in the market price. The quantity of emissions is fixed by the legislator in form of a cap of allowances and covers a certain area over a specific period of time. Generally, an allowance or a unit of trade entitles a polluter to an emission of one tonne of carbon dioxide (tCO_2). Since polluters are allowed to trade allowances, a market price is established which depends on the level of demand and supply. Finally, a polluter minimizes his costs when the price of abating one more unit of pollution equals the price of the allowance. (Kulk and Mulder 2002) (Hood 2010:6-11)

A noteworthy advantage of an ETS, in comparison to carbon taxes, is that the existence of a cap guarantees compliance with emission targets because the level of emissions cannot be exceeded due to the fact that the regulator fixes the total quantity of allowances. Furthermore, experience shows that ETS are more likely to be accepted by policymakers than carbon taxes and that an international alignment of ETS tends to be politically more feasible than a harmonization of tax laws. (Hood 2010:12)

2.2 Coverage

Emission trade systems can cover the whole economy and all six green house gases defined by the Kyoto Protocol or merely several sectors and only CO_2 emissions. The choice of the coverage depends on environmental, economical, and political considerations. As a result, the coverage of ETS can vary to a great extent. The design of an ETS is critical as multiple factors have to be considered when developing such a scheme. For example, countries that are part of the Kyoto Protocol should provide a scheme that is compatible with Kyoto's requirements. Another crucial point is the choice of sectors included in the scheme. Due to the fact that some sectors engender only few emissions, their inclusion might be inefficient when costs for measuring emissions, monitoring, and extending the ETS are considered. In order to reduce emissions rapidly and in an economic way, ETS should primary target sectors having a significant potential to abate pollution and that are characterized by high price sensitivity. Such a sector may be the electricity sector where emission levels are considerable and where a great potential for abatement exists because older coal-fired plants are still frequently used. (Hood 2010:33)

From a theoretical point of view, an efficient ETS should cover the whole economy and a big number of GHG. The reason lies in the fact that a large scheme provides a wider range of emissions abatement opportunities and therefore enables a reduction of the emissions at the lowest possible price. However, even a scheme covering the whole economy and all six GHG defined by the Kyoto Protocol does not necessarily ensure efficiency as market failure problems and barriers are more or less likely to appear if further measures on emission trading won't be taken.

To illustrate the differences in coverage between ETS it might be interesting to have a brief look at the ETS of the European Union and of New Zealand. The former includes all 27 European Union countries plus Norway, Iceland and Liechtenstein but covers only the greenhouse gas CO_2 of the energy and industrial sectors. In contrast, the latter is an economy-wide scheme directly derived from the Kyoto Protocol and covers all six green house gases. Against common assumptions regarding the coverage, the ETS of New Zealand is a less ambitious scheme due to the absence of an explicit target for domestic emission reductions.

2.3 Cap setting

The cap setting process is a very crucial affair when an ETS is established as it has a great impact on the potential reduction of emissions in an economy. Normally, there exist three types of caps, which can be set by the regulator of an ETS.

In the first case, the regulator can set absolute caps where an overall limit on the total emissions is fixed. This type of cap is advantageous when a specific emission reduction purpose should be achieved because emission levels cannot

exceed the amount of allowances fixed by the government. On the other hand, absolute caps are very restrictive because the production level cannot be increased if the overall cap is achieved. Therefore, absolute caps are often criticised as they can negatively affect a firm relative to its international competitiveness and harm the expansion in production due the fact that an increase in production implies a raise in abatement costs.
In the second case, a relative cap can be set which means that the overall limit is measured in relation to production or some other level of activity. Generally, producers prefer this type of cap because they can expand their production without suffering a major increase in abatement costs that could lead to a loss in competitiveness on international markets. Furthermore, firms can sell their surplus of allowances on the market if they produce in a more environmental friendly way than previewed by the scheme. An important downside of relative caps is that the final level of emission in not known in advance and so the achievement of environmental targets cannot be guaranteed. In the case of relative caps, the level of emissions depends not only on the relative standard but also on the production level, which is not controlled by the regulator. In addition, the research of Gielen et al. (2002) showed that a system with a relative cap is less efficient than a system with an absolute cap as the level of abatement, prices of emission permits and the output of goods are higher under a system with a relative cap.
A third possibility to set a cap on emissions is the use of negotiated baselines by which important emitters of GHG can voluntary participate in an ETS instead of paying carbon taxes. This type of cap is rather rare but exists, for example, in Switzerland. (Hood 2010:37-38) (Kulk and Mulder 2002:739-740)

An important aspect concerning the setting of caps is that they should not be fixed on a too high level because an oversupply of allowances is likely to cause a crash in the market price. In order to avoid such a situation, the regulator can allow banking of allowances for future periods. This ensures that the demand for allowances does not drop to zero when an oversupply exists. Another possibility to prevent oversupply is allowing ETS to link among each other so that the oversupplied country can export the excessive amount of polluting permits to another ETS in order to stabilize the price and avoid a significant price drop. Finally, oversupplies can be avoided when price floors are defined because unsold allowances are automatically cancelled. Normally, the problem of an oversupply merely emerges when a new scheme is phased in and when a lack of information on the total emission level and on the abatement potential for the firms exists. A solution to this problem might be to introduce a fixed price period for allowances, similar to a carbon tax in its nature, during which crucial information about emissions can be found. Good data about emission levels allows estimating the adequate supply of allowances that should be provided in order to meet the emission targets. (Hood 2010:38-40)

2.4 Allocation of allowances

Depending on the ETS, liable entities can procure cost-free allowances or buy allowances during an auction. The allocation of allowances considerably varies from scheme to scheme, ranging from 100% auctioning to 100% free allocation of

allowances. According to theory, the allocation choice of allowances has no impact on the environmental efficiency as the abatement of emissions depends only on the cap.

Free allocation of allowances is repudiated because it enables to avoid negative impacts on firms and consumers due to market distortions, which are likely to occur if allowances are sold to market participants. Furthermore, the free allocation of allowances doesn't lead to a loss of competitiveness for domestic firms because they don't have to bear an increase in costs as pollution permits are attributed free of charge. If firms had to buy allowances, this would increase the firm's production costs whereas a non-paying rival foreign firm would have a comparative advantage enabling it to increase its market share in detriment of the domestic firm.
However, there is also a great deal of drawbacks in free allocation. It has been shown that free allocation tends to drop market liquidity, raise price volatility, and generate windfall profits for companies that pass on allowance costs to consumers. In addition, free allocation may induce wealth transfers between different sectors, mitigate price signals to investors, and encourage new entrants to do business in high-emission activities. Such negative effects resulting from free allocation could considerably weaken the efficiency of an ETS. Therefore, the auction of allowances is generally preferred.
Moreover, the auction of allowances is more beneficial for two more reasons. First, governments can use revenues generated by the auction to offset negative consequences on the economy resulting from an ETS or finance the research and development of new environmental friendly technologies. Second, it is easier to adjust caps when allowances have been auctioned than when they have been distributed for free. The adjustment of caps is crucial in the case of an oversupply of allowances in order to ensure the efficiency of the scheme. (Hood 2010:57-58)

If governments are in favour of implementing a scheme based on free allocation of allowances, two possibilities exist for their distribution. Either the distribution of allowances is based on a historical reference point or on future conditions.
If the allocation is based on a historical reference point, also called grandfathering, the number of allowances distributed to a polluter depends on historical production levels multiplied by a reference emission rate. The advantage of this method is that a strong price signal is given to polluters because future increases in emissions will directly imply a rise in costs due to the fact that future allowances must be purchased at the market price. The downside of grandfathering is that liable entities with high emission rates obtain a greater amount of allowances than firms producing in a more environmental friendly way.
The second distribution possibility is based on future conditions. It is also called output-based allocation because the amount of allowances distributed to polluters depends directly on production levels. However, this method of allocation implies the existence of a relative cap in which emission reductions targets may won't be achieved because the total amount of emissions is variable. (Hood 2010:59-60)

2.5 Conclusion

This chapter gave a brief overview about the functioning and the main features of an ETS. It has been shown that an efficient ETS should cover the whole economy because a wide range of emissions abatement opportunities increase the chance of finding low-cost emissions reductions inside the economy. Furthermore, an efficient ETS should define absolute caps in order to ensure emission target compliance. Nevertheless, the fixing of an absolute cap is a delicate affair and should be based on high quality information about actual emission levels and about the abatement potential of liable entities. Relative to the distribution of allowances, the potential of an ETS to reduce emissions is higher when allowances are auctioned than when a free allocation takes place. Regarding the trade of polluting permits, it is important that the ETS ensures price stability. A wide range of instruments and measures exists in order to guarantee price stability necessary for a well functioning emission market. These instruments have not been discussed in the previous chapter but may be included when a broader analysis of ETS is undertaken. However, the aim of this chapter was not to analyse the functioning of an ETS in a fundamentally way but merely to point out the main challenges relative to an ETS in order to facilitate the understanding of the following chapter.

3. Market power in international emission trading

The following chapter aims to carefully examine the role of market power in international emission trading. Therefore, the two types of market power initially will be presented, before the second section indentifies some crucial factors tending to influence the level of market power within an ETS. In a last step, the question about "Hot Air" and market power is discussed prior to drawing a conclusion about strategical behaviour in international emission trading.

3.1 Types of market power

Within an ETS, market power can exist in two different forms: Exclusionary and simple manipulation. The following section will focus on these two options of strategic behaviour in order to clear why market participants might be interested in manipulating market prices.

i.) Exclusionary manipulation

When dominant firms practise exclusionary manipulation they simultaneously consider profits in the emission market and in the production market. Exclusionary manipulation is therefore only possible if the dominant firm and the fringe firms supply the same product market. In this case, a firm holding a significant amount of allowances can decide to hoard them in order to increase the fringe firm's costs. This rise in costs is a result of the restricted supply of allowances due to the fact that the dominant firm withholds polluting permits. Consequently, the fringe firm has to mitigate more of its emissions than under a situation of perfect competition. This leads to higher unit production costs forcing the fringe firm to lower its output, which induces a rise in the product's market price. On the other side, the dominant firm increases its profits thanks to a very low abatement cost and the increased product's market price.
Furthermore, the dominant firm can prevent other firms from entering its product market and hence extend its monopolistic power more and more. Such behaviour undermines the cost-effectiveness of an ETS because it increases the cost of pollution control across the whole market. In other worlds, the fringe firm's cost for reducing his emission level by one unit is higher than the dominant firm's costs. Thus, emissions are not reduced at the lowest cost. The efficiency loss can be explained by the fact that the pollution control costs for society are higher than in a competitive market because the dominate firm abates too much and the fringe firms too little of their emissions. (Robert Godby 2000:3-11)

ii.) Simple manipulation

Simple manipulation occurs if the dominant firm is a net seller or buyer of allowances and hence able to influence market prices in order to minimize its costs. For this reason, simple manipulation is also called cost-minimizing manipulation. It is important to note, that this kind of manipulation does not imply

that competing firms supply the same product market. The following next two paragraphs show how simple manipulation can be executed by a monopolist or by a monopsonist.

First, in the case of a monopoly, the dominant firm is aware of the fact that a rise in sales reduces the allowance's price and hence decreases profits. Therefore, the dominant seller consciously offers fewer allowances at a higher price and takes advantage of its position as a net seller of allowances. Thereby, the dominant firm's profit increases whereas a loss to society occurs as the monopolist keeps its emission level too high and the fringe firms too low in comparison to a market efficient solution. Through the reduction of allowances offered, the monopoly lowers its own emission control costs at the expense of the fringe firms, which have to pay a higher amount to reduce their emission levels. The condition of market efficiency is no longer fulfilled because the price of allowances do not equal the marginal abatement cost for every market participant. In sum, monopolistic behaviour in an ETS leads to higher allowances' prices, lowers the volume of trading, raises the level of emissions and hence degrades the efficiency of the whole scheme. It is important to note that monopolistic behaviour cannot only occur in the form of a monopoly but also in the form of an oligopoly where several firms take advantage of their market power and increase the price of allowances. (Robert Godby 2000:5-8)

Second, in the case of a monopsony, the dominant firm recognizes that an increased purchase of allowances raises the price of the pollution permits. In order to minimize its costs, the dominant buyer intentionally purchases less allowances at a lower price than in a market efficient solution. Through this price manipulation, the dominant buyer maximises its profit whereas the fringe firms face smaller profits. Consequently, a loss to society is generated due to the fact that the volume of trading is reduced and the level of emissions increased. Furthermore, an efficiency loss in the allocation of abatement efforts between firms exists because of an inefficient allocation of abatement responsibilities. (Muller et al. 2002:71) The consequences in terms of efficiency loss are likely to be the same like in the case of a dominant seller if the level of their market power is similar. Graphically, this has been demonstrated by Godby (Robert Godby 2000:24-25).

3.2 Factors having an impact on market power and suggested solutions

The possibility to control market power depends on several factors among which the initial allocation of allowances, the trading institution, the use of offsets plus market size, and the linking of an ETS are crucial. The following section explains why these factors have an impact on market power and provides solutions to control market power within an ETS.

i.) Initial allocation of allowances

The presence of market power in an ETS can depend on the initial allocation of pollution permits. If the initial allocation of allowances is deficient relative to the emission level and the abatement potential of liable entities, some firms may receive too many or too few allowances and consequently become dominant sellers or dominant buyers. Knowing that trading behaviour (and so monopolistic and monopsonistic behaviour) depends on the initial allocation of allowances, it is important to attribute an efficient amount of allowances to liable entities in order to prevent them from practising market power. As already mentioned in chapter 2.4, the choice of the allocation of allowances should be based on sound data about emissions in order to ensure market efficiency and hence avoid the emergence of market power inside an ETS. (Hahn and Stavins n d:6-7)

ii.) Trading institution

A second factor that will likely have an influence on market power is the trading institution chosen for an ETS. Laboratory evidence from Bohm (Bohm 2003) showed that the use of a double auction system might be able to control market power because market participants act like traders and prices are likely to be more volatile. A double auction is similar to the functioning of a stock market in which agents make a bid to buy, an offer to sell, or claim acceptation of an outstanding bid or offer. Due to the fact that agents can make a last-minute bid or offer, it has been assumed that a double auction system lowers market power because buyers and sellers have a more active role and hence, the establishment of dominant buyers and sellers tends to be more difficult. However, an interesting study from Muller (Muller et al. 2002) showed that monopolists and monopsonists are able to affect average prices even in a double auction system and concluded that the use of a double auction provides an ineffective constraint on market power. The different results show that no consensus has been found on whether a double auction system increases efficiency of an ETS or not. (Muller et al. 2002:71-72, 87-91)

iii.) Use of offsets

An important opportunity to reduce market power within an ETS consists in allowing liable entities to use offsets. By means of offsets, firms can reduce the cost of meeting the emission mitigation targets by using credits. Credits can be obtained if emission reductions outside the ETS are made, which are not covered by the cap. Through the use of the credits, firms can offset emissions inside the ETS. An offset represents always one tonne of CO_2 greenhouse gas reduction.

Such an offsetting mechanism has been created by the Kyoto Protocol and is called Clean Development Mechanism (CDM). CDM evaluates projects that guarantee a reduction in emissions and that are specially designated to offset emissions caused elsewhere in the world.

When a liable entity executes market power within an ETS, a solution to render the market more competitive is to allow market participants the purchase of offsets. Thereby, fringe firms can avoid buying costly polluting permits of the ETS by buying offsets, which mitigate the monopolistic power of dominant sellers. For this reason, the use of offsets can be viewed as an efficient instrument for controlling market power. (Hood 2010:15) (Baron 1999:7)

iv.) Size of the market and linking

Market power is more likely to occur in an ETS with a little number of participants. Therefore, it is important that governments are not the primary actors in emission trading because this may lead to a Party-to-Party trading where transactions could be done with political and strategical considerations. In this case, bargaining governments and contracting Parties of the Kyoto Convention could exclude other participants from certain transactions of pollution permits and disturb market efficiency or cost effectiveness. Such behaviour of governments can be considered as exclusionary manipulation because transactions may not only affect the emission market but also other goods that are of strategical interest for governments. (Baron 1999:4)

In order to prevent Party-to-Party trading in the case of an international ETS, it is crucial that governments devolve allowances to their legal entities. Thereby, market size is considerably enlarged due to the increased number of smaller participants and hence the level of competition is also superior. (Baron 1999:8)
Another solution to solve the problems relative to Party-to-Party trading consists in prior notification whereas Parties must indicate in advance when they want to buy or sell an important amount of allowances. In this case, the Party has to announce its intention through a registry of exchange, which allows other Parties and liable entities to participate in trading. This approach improves the transparency of transactions and enables better market access and a more efficient economical and ecological outcome as Parties with the highest bid price receive the seller's offer. (Baron 1999:9)

The risk of market power can also be reduced by linking ETS to other schemes, which increases liquidity, the number of market participants, and the quantity of allowances traded. As mentioned previously, multiple participants and a larger volume of pollution permits traded considerably reduces the risk of market power and should be considered as an option when an ETS lacks efficiency. However, if linking is chosen as a solution, design features of the respective schemes have to be carefully examined in order to check their compatibility and their target compliance. (Hood 2010:15)

3.3 "Hot Air" and its impact on international emission trading

i.) The origin of "Hot Air"

The Kyoto Protocol defines overall caps in respect to greenhouse gases and obliges OECD industrialized countries, Central Europe and the states of the Former Soviet Union (FSU) to achieve emission reduction targets based on historical emission data. The emission reduction commitments for Annex-B Parties of the Kyoto Protocol requires an average decrease of 5.2 % in respect to their 1990 emissions. In order to ensure a cost-effective cut in emissions, the Kyoto Protocol attributed a given number of Assigned Amounts Units (AAUs) to ratifying Parties with regard to their individual emission reduction targets. An AAU is tradable among Annexe-B Parties and entitles Annexe-B Parties to emit one metric tonne of carbon dioxide equivalents. (Pratlong, Van Regenmorter, and Zagamé 2003:3)

The existence of "Hot Air" and the problem of market power can be explained by a misallocation of AAUs in respect to the FSU and Eastern Europe. The Kyoto Protocol's commitments for the FSU requires merely a stabilization of their greenhouse gas emissions up to their reference year of 1990 level for the period 2008-2012. Due to the fact that greenhouse gas emissions dropped significantly after the economic and industrial collapse following the breakup of communism in 1989, the emission target for the FSU based on the 1990 emission level is extremely unambitious. For example, in 1995 the overall emission level of the FSU was about 32 % lower than in 1990 and hence an allocation of AAUs, based on 1990 emission levels is rather questionable due to the fact that no emission reduction have to be undertaken in order to meet Kyoto's commitments. The difference between anticipated baseline emissions and the Kyoto's emission reduction targets is called "Hot Air" in literature. "Hot Air" can also be understood as the carbon surplus of the FSU in respect to their baseline years of 1990. (Taylor 2004:253) It is estimated that Russia and Ukraine account for about two-thirds of total "Hot Air" and Romania for about 15 %. (Klepper and Peterson 2005:12) (Pratlong et al. 2003:3)

ii.) Impacts of trading "Hot Air"

A first problem of trading "Hot Air" consists in its impact on energy prices as some economic sectors or Parties may be privileged regarding comparative advantages. In theory, a raise in the supply of "Hot Air" lowers the price for pollution permits and consequently induces a decrease in gross energy prices (which include the cost for pollution permits) by lowering the global emissions constraint. The drop in gross energy prices, due to a price decrease in pollution permits, increases the world demand for fossil energy and hence leads to higher net energy prices on the world market. Furthermore, the demand for energy intensive goods is expected to increase as gross energy prices fall. The trade participants, which take advantage of the change in energy prices, are exporters of fossil energy and energy intensive industries in detriment of economical agents

investing in environmental-friendly technologies. In the case of the FSU, an increase in energy prices would be especially beneficial by reason that their exports contain considerable quantities of fossil energy. Summing up, price effects resulting form trading "Hot Air" lower the incentive to abate emissions among trade participants. (Klepper and Peterson 2005:7-8)

A second concern relative to the trade of "Hot Air" is that Russia, Ukraine and Romania may execute market power on the international market for polluting permits. If no restrictions on emission trading are made, large sellers of allowances may manipulate the trading price of polluting permits in order to maximise profits or welfare. Furthermore, "Hot Air" economies can increase government revenues by restricting the supply of "Hot Air" on world markets in order to maximise welfare. Nonetheless, whether the market price of allowances can be manipulated or not, depends, as we saw in chapter 3.2 considerably on the trading structure. The risk of market power tends to be higher if allowances are traded in a centralized manner and not through various domestic liable entities, which act as independent agents. Due to the fact that the Kyoto Protocol did not clearly define whether governments or domestic liable entities are responsible for trading, it is not clear in which extent Parties and liable entities can manipulate prices for pollution permits. (Klepper and Peterson 2005:8-9)

A third difficulty regarding market power and "Hot Air" is the USA's withdrawal from the Kyoto's permit market, decided under the Bush administration. The USA's refuse to ratify the Kyoto Protocol is likely to have a depressing impact on the demand of emission permits and might increase the market power of big suppliers of "Hot Air". However, the overall effects on profits and welfare relative to the various Parties are difficult to estimate. Altogether, the USA's withdrawal should improve their comparative advantage in energy intensive products and industries while Parties with large amounts of "Hot Air" like the FDS might increase their profits as energy prices are likely to increase. The raise in energy prices can be explained by the increase of available "Hot Air" due to the fact that less energy intensive production is shifted to the FSU, which increases the amount of available "Hot Air". Taken together, the impacts of the USA's withdrawal from Kyoto on profits and welfare are ambivalent but certainly not in favour of a large number of Kyoto participants. (Klepper and Peterson 2005:11, 13)

3.4 Conclusion and projection

The objective of chapter 3 consisted in examining the problem of market power within an ETS. In a first step, it has been shown how market power can be executed. Subsequently, some important factors having an impact on market power have been discussed. A first noteworthy result is that market power is likely to occur if governments allocate allowances inefficiently due to low quality emission data on which the allocation is based. A second lesson learnt is that the choice of the trading institution might have an impact on market power even though its relevancy is rather controversial. Third, the use of offsets and the linking of an ETS are likely to decrease monopoly and monopsony power through an enlargement of the scheme and through an increase in the number of

participants. However, one of the most noticeable results is that large schemes with a great number of market participants tend to mitigate the risk of market power due to an increase in the liquidity and in the supply of allowances.

In order to illustrate the impacts of "Hot Air" on emission trading, chapter 3.3 first treated the origin of "Hot Air" before pointing out its effects on emission trading. It has been shown that the trade of "Hot Air" is likely to have an impact on fossil energy and on pollution permits prices. Hence, economies endowed with large amounts of "Hot Air" increase profits through the raise in fossil energy prices whereas the incentive to abate emissions is lowered due to the drop in gross energy prices. As a result, energy intensive industries as well as exporters of fossil energy benefit from higher revenues, providing them with a comparative advantage in comparison to other Kyoto participants. An important aspect with regard to trading "Hot Air" is the risk that countries with large supplies of "Hot Air" take advantage of their market power in order to manipulate prices on the international market of AAUs. Finally, it is interesting to note that a Party's or a liable entity's ability to execute monopoly or monopsony power mainly depends on the design and the regulation of a scheme. In other worlds, a sound ETS is able to counteract strategic behaviour of market participants.

Since the efficiency of emission trading can be increased if the scheme includes a greater number of participants, it is important that cooperation among Kyoto participants is enforced. Thus, it is crucial that an international agreement on trading AAUs is found in order to establish a trading scheme that disables the execution of market power by big "Hot Air" suppliers. The right path may include an enlargement of the European's Union ETS, including other Kyoto participants into the trading system. Since the EU ETS is the world's largest and most developed ETS, the European Union might take the leadership in international emission trading, thereby ensuring that the Kyoto targets are achieved. If such a leadership is politically not feasible, the efficiency of existing domestic ETS should be increased whereas more countries should consider starting with emission trading in order to reduce global greenhouse gas emissions and achieve targets fixed by the Kyoto Protocol. (Taylor 2004:255-256) (Pratlong et al. 2003:10)

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