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**MULTINATIONAL CORPORATIONS AND EMISSIONS TRADING:  
STRATEGIC RESPONSES TO NEW INSTITUTIONAL CONSTRAINTS**

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STRATEGIC RESPONSES TO NEW INSTITUTIONAL CONSTRAINTS**

**ABSTRACT**

Although the Kyoto Protocol intended to implement emissions trading globally, this has so far been impossible. As a result, particularly Multinational Corporations (MNCs) currently face a wide variety of emissions trading schemes that differ in scope and enforcement, thus creating divergent levels of institutional constraints across locations. This article sheds light on the implications of these new constraints for MNCs, and also explores their responses to emissions trading schemes in terms of (perceived) opportunities to (re)shape the institution. Findings on strategic responses of Global 500 companies expose the constraints of particularly the EU emissions trading scheme, as well as the opportunities being explored or already exploited in various ways in this scheme and other emerging ones. Based on these findings the article proposes a framework that discerns four scenarios in which MNCs can find themselves: institutional conformist, institutional evader, institutional entrepreneur and institutional arbitrageur.

**Keywords**

Climate change; emissions trading; international policy; multinationals; institutions

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**INTRODUCTION**

Over the past decade, climate change has made headway as a global issue, leading to the emergence of new institutions to restrain greenhouse gas (GHG) emissions. Since the adoption of the Kyoto Protocol in 1997 and the subsequent negotiations on the specificities in terms of implementation, particularly emissions trading has gained ground as a legitimate way to deal with this environmental issue. Emissions trading allows countries which fall under the Kyoto Protocol to reduce their GHG emissions by exchanging part of this obligation with another party to the Protocol (Grubb et al., 1999). However, the implementation of this intergovernmental emission trading regime on a company level has seen great diversity worldwide regarding the specific institutional forms that emerged to enable trading between companies and the progress made in implementation.

In Europe, public institutional forms have prevailed as emissions trading has been established through regulatory approaches. The European Union established an emissions trading scheme (EU-ETS) in 2005, a step already taken by Denmark and the UK in respectively 1999 and 2002. In contrast, in the US and Australia, countries that have so far refused to ratify the Kyoto Protocol, emissions trading has emerged on a smaller scale at the sub-national level, sometimes as a public initiative, but with the establishment of the Chicago Climate Exchange also as a private arrangement. Several non-European

industrialised countries that fall under the Kyoto Protocol, such as Japan and Canada, have not yet really implemented trading schemes. However, companies from these countries can use the other Kyoto mechanisms – Clean Development Mechanism (CDM) and Joint Implementation (JI) – to reduce emissions via reduction projects in developing countries or economies in transition.

Thus, while climate change is still a global issue in its causes, manifestations and implications, and international policy regimes exist, the institutional forms of corporate-level emissions trading differ significantly across countries. This raises the question how multinational companies (MNCs) deal with this whole variety of institutional forms with which they are confronted. To this end, this article examines how MNCs act in response to newly created emissions trading schemes, taking a new-institutionalist perspective. This approach asserts that companies do not necessarily have to comply with institutional pressure, but can also choose to respond strategically by avoiding pressure or use their bargaining power to influence actors that enforce institutions (Child and Tsai, 2005; DiMaggio, 1988; Ingram and Silverman, 2002; Oliver, 1991).

In this article, we will first map existing and emerging emissions trading schemes, considering their main peculiarities, to identify the type of institutional constraints faced by MNCs. Subsequently, we will consider how these constraints can also lead to opportunities for MNCs to (re)shape the institutions (the so-called ‘institutional agency’). These analytical insights will then guide the subsequent empirical exploration of responses of Global 500 companies. Based on that, we will discuss the implications and propose a framework that presents different scenarios for strategic responses to emissions trading schemes.

## **EMISSIONS TRADING AND INSTITUTIONAL CONSTRAINTS**

From a new-institutionalist viewpoint, institutions are defined as a set of rules that constrains organizations (and individuals) in conducting their activities (Ingram and Clay, 2000). In this vein, an emissions trading scheme is an institution which sets boundaries on the amount of greenhouse gases that firms emit into the atmosphere. As an institution, emissions trading has initially been shaped on an international level in negotiating the Kyoto Protocol (Grubb et al., 1999). However, instead of becoming a uniform global institution, emissions trading has seen a trickle-down trajectory (Djelic and Quack, 2003) and has eventually been reshaped to fit climate and energy policies on regional, national, and sub-national levels, creating a whole variety of new 'local' institutions (Maguire and Hardy, 2006). It was the start of the EU-ETS in 2005 that has given an impetus to the international dispersion of trading schemes that enable emission reduction transfers between companies. At present, even in the US the political debate to set up a federal level emissions trading scheme aimed at companies is gaining momentum (Lohr, 2006).

Nevertheless, there are currently various trading schemes in place (or under development) that differ in the constraint they put on emissions. The type of constraint of an institution typically depends on the actor that sets the rules as well as the accompanying enforcement mechanism, if any (Ingram and Clay, 2000), since this affects the scope and the stringency. States create public institutions that affect a broad range of actors who cannot avoid being affected. Non-state actors can create private institutions that have a more limited scope because they are bounded to a specific group of organisations or individuals who are often voluntarily covered (cf. Ingram and Clay, 2000; Ingram and Silverman, 2002). Due to the fact that actors cannot opt out, a public

institution generally produces a stronger constraint, all the more because enforcement is in the hands of a third party (Ingram and Clay, 2000). In contrast, a private institution usually emerges more organically from unorganised interaction between actors (Fligstein, 1997a; Granovetter, 1985), and creates a weaker constraint as it is enforced (or controlled) by other members of the same group (Ingram and Clay, 2000).

Most current schemes are of a public nature, with the implication that once companies fall under a scheme they cannot opt out (Ingram and Silverman, 2002). This includes the EU-ETS, its predecessors that were set up some years earlier in the UK (suspended at the end of 2006) and Denmark (suspended at the end of 2004), the Regional Greenhouse Gas Initiative (RGGI) of the Northeastern states of the US, and Australia's New South Wales Greenhouse Gas Abatement Scheme (NSW). However, due to their different geographical coverage, not all these public institutions produce the same, strong constraint. The EU-ETS clearly stands out as it has been created on a regional European level. It regulates industrial installations located in the EU, including energy activities (combustion installations exceeding 20 megawatt, oil refineries, coke ovens), production and processing of ferrous metals, mineral industry (installations for cement, glass and ceramic products), and pulp and paper production plants (EC, 2003). As a consequence, a broad range of MNC subsidiaries from different sectors could be affected. Nonetheless, the impact of the EU-ETS is not equal for all MNCs in the EU. Firstly, it depends on the number of eligible installations that are located in the EU. Secondly, because the exact rules for trading and enforcement have been delegated to EU Member States through National Allocation Plans (Ellerman and Buchner, 2006), it also depends on the specific country where installations are located.

Still, because the other schemes merely apply to national or sub-national levels, they usually affect a lower number of MNC affiliates compared to the EU-ETS. In the US and Australia, for example, the institution building process has seen a dynamic which is best characterised as a trickle-up trajectory (Djelic and Quack, 2003). State-level authorities have tried to bypass their federal governments by introducing emissions trading schemes on a sub-national level with the aim to influence climate policy on a federal level (Engel, 2006). Whereas in Australia, the state of New South Wales has created a trading scheme unilaterally, in the US several states have chosen to take a multilateral approach by setting up the RGGI (Engel, 2006; Rabe, 2006). However, it is evident that such a trickle-up trajectory creates discrepancies between states, as not all states in the country are subject to the new institutional constraints. There is thus the risk of ‘emissions leakage’ to neighbouring states (Engel, 2006). What is more, the RGGI is still in its formative years, and thus merely forms an anticipated constraint.

The first examples of private institutions for emissions trading were the internal schemes that BP and Royal Dutch/Shell implemented. However, these schemes never reached beyond their pilot phase and were suspended at the end of 2001 and 2002, respectively. The only private institution for emissions trading currently still in use is the Chicago Climate Exchange (CCX), which is also located in the US. The constraint it sets is different from the public trading schemes, because companies choose to be part of it on a voluntary basis. Nevertheless, once a company participates, the impact of CCX is not negligible, since the voluntary commitment is legally binding and is enforced by the CCX itself and the National Association of Securities Dealers (Yang, 2006).

Figure 1 portrays the emissions trading schemes and their position with regard to



the public-private dimension and geographical coverage.

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Figure 1 about here

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### **INSTITUTIONAL AGENCY: OPPORTUNITIES TO SHAPE INSTITUTIONS**

Besides the type of constraint, strategic responses also depend on the opportunities companies have to influence the shape of institutions. Originally, institutional theory has posited that actors merely have the option to conform to institutional constraints, either because they do not recognize or act on their interests or there are circumstances that make them unable to do so (DiMaggio, 1988: 4-5). However, DiMaggio (1988) tried to re-instil institutional theory with interest and agency, arguing that actors can escape institutional constraints by acting on their interests and exert influence on their institutional context. Ever since, scholars have tried to look more into how actors' agency has led to the creation of new institutions or change of existing ones, and thus become 'institutional entrepreneurs' (Dorado, 2005; Greenwood and Suddaby, 2006; Maguire et al., 2004; Seo and Creed, 2002).

Seo and Creed (2002) argue that even within institutional constraints it is possible for actors to act on their interests and become agents of change. They propose that one way of doing this is by taking advantage of inconsistencies and tensions that exist within and between institutions. In the EU, for example, building emissions trading as an institution has partly been an outcome of disagreement between industry and regulators how to reduce corporate GHG emissions, that is, whether it should be regulated with a

carbon tax or an emissions trading scheme. In the 1990s, an EU-wide plan was launched to introduce a carbon tax to reduce GHG emissions, but this met with great resistance from industry and some Member States, because they argued it would incur additional costs and put competitiveness at risk (Christiansen and Wettestad, 2003). Building on their success in reducing emissions of similar trading schemes in the US (Kruger and Pizer, 2004), the resistance against a carbon tax paved the way for the political push to introduce emissions trading, which was more broadly supported by industry. BP and Royal Dutch/Shell, for instance, acted as institutional entrepreneurs by setting up internal emissions trading schemes (Christiansen and Wettestad, 2003).

However, implementing the EU-ETS has created other tensions as well. Although emissions trading generally receives support from business, the European Commission has not been able to align the interests of all affected industries. Design of the EU-ETS particularly seems to have satisfied the interests of energy producers at the cost of energy consumers. To illustrate, in the first trading period (2005-2007) of the EU-ETS, allowances to emit GHGs have been allocated at no cost. This has particularly benefited energy producers because they have been able to pass through the price of these allowances to their clients, even though they did not pay for these allowances themselves (Sijm et al., 2006). This outcome is not surprising given the fact that the energy producers' voice has been heard most clearly in the political negotiations surrounding the EU-ETS (Markussen and Svendsen, 2005). Nevertheless, it leaves large consumers of energy dissatisfied, which gives them an incentive to try to change the current institutional arrangements (Seo and Creed, 2002).

Finally, when firms belong to multiple different organizational fields<sup>1</sup> that expose

them to different types of institutional constraints can also lead to tensions that induce institutional agency (Seo and Creed, 2002). The globally fragmented institution of emissions trading is clearly a source of such tensions. There is already a constraint in Europe, but the situation is different in the US, where public schemes are in a much earlier stage. Moreover, as shown above, there are also many discrepancies between EU Member States and states in the US that give firms quite some leeway to act strategically. These tensions particularly concern MNCs, because they almost by definition belong to multiple fields, as they are active in different countries and/or industries. However, it is this 'boundary bridging' characteristic of MNCs that also awakens their institutional entrepreneurship because it makes them aware of alternatives to their existing institutional context (Greenwood and Suddaby, 2006; Maguire et al., 2004).

To summarise, then, from a new-institutionalist perspective there are two main factors that determine how MNCs act in response to newly created emissions trading schemes. Firstly, it depends on the type of institutional constraint to which a firm is subject (Child and Tsai, 2005). Whether the constraint is comparatively strong or weak depends on the scope of the institution; firms facing a private institution will feel less constrained than those falling under a public institution (Ingram and Clay, 1998). Secondly, responses also depend on the opportunities that firms see to successfully pursue their interests by (re)shaping institutional arrangements (Dorado, 2005). The potential to recognize and exploit such opportunities relies on the number of overlapping organizational fields to which a firm belongs, as exposure to a wider variety of different institutional constraints enables agency (Dorado, 2005; Greenwood and Suddaby, 2006; Maguire et al., 2004; Seo and Creed, 2002). What matters as well is the state of the

organizational fields they belong to, that is, whether they are still forming, stable, or in crisis (Fligstein, 1997b). Compared to a relatively stable organizational field, there are more opportunities and institutional agency has more far-reaching consequences in still forming fields or fields in crisis (Dorado, 2005). The remainder of the paper explores actual responses of Global 500 companies to new institutional constraints resulting from emissions trading schemes.

## **METHODOLOGY**

### **Sample**

To conduct the analysis we used data from the fourth questionnaire of the Carbon Disclosure Project (2006). With this questionnaire, a large group of institutional investors worldwide asked the 500 largest firms (Financial Times Global 500), to disclose information about their strategy regarding climate change. Of the 500 firms from which information about climate change was requested, 360 (72%) filled out the questionnaire, 42 (8.4%) provided information mostly referring to their sustainability report, 46 (9.2%) declined to participate, and 52 (10.4%) did not respond at all. Yet, of the 360 firms that completed the questionnaire a considerable number dropped out, for example because a firm had been taken over or turned out to be a subsidiary of another firm in the sample. The final sample therefore amounts to 331 completed questionnaires.

For the 331 firms in the sample, the spread across countries, for those with relatively large shares, was as follows: 130 US (39.3%), 113 EU (34.1%), 29 Japanese (8.8%), 17 Canadian (5.1%), 11 Swiss (3.3%), and 4 Australian multinationals (1.2%).

The EU sample comprises, amongst others, 33 UK, 25 French, 16 German, 8 Spanish, 8 Italian, 7 Dutch, and 5 Swedish firms. The industries (according to the Financial Times classification) with the largest representation in the sample are: 50 banks, 29 oil & gas firms, 22 electricity firms, 20 telecommunication companies, 18 pharmaceuticals, 18 information technology firms, 13 insurance firms, 12 general retailers, 10 automobile firms, 10 electronics firms, and 10 diversified utilities. When spread across country and industry are combined for the large industries in the sample, it shows that the US, EU, and Japan are represented quite equally in all industries.

Nevertheless, there are some exceptions: the EU is relatively overrepresented in the automobile industry (owing to Germany and France); the US dominates most service sectors particularly specialty finance and software & computer services; and Japan has no oil & gas firms and is underrepresented in the banks sub-sample. What is more, with regard to supply of electricity, the US and Japan are both home to firms that merely supply electricity, whereas in the EU, the diversified utility, which also supplies gas, appears to be the dominant business model.

### **Data analysis**

The CDP questionnaire consists of ten open-ended questions that cover a wide array of corporate activities pertaining to climate change. Since this paper concentrates on MNCs' emissions trading strategies, we limited our analysis to the responses to the question that specifically focuses on this issue. In this question firms are asked to disclose information on their strategy and expected costs and/or profits from trading activities in the EU-ETS, the Clean Development Mechanism and Joint Implementation, and other trading schemes

(CDP, 2006). In their responses firms gave information about trading activities, but it turned out to be either not possible to estimate costs and profits from trading activities (yet) or it was considered confidential, as the responses hardly contain any clear figures on this subject matter.

To analyze the raw CDP data we used the QSR NVivo 7 software package. This programme is particularly useful to manage the large quantity of data that we had, as the sample consists of 331 firms. First of all, the software package allows using the rich nature of the qualitative data, because it enables selecting large sections of texts in which codes are embedded. Yet, it also retrieves quantitative data, because it summarizes the vast amounts of text under a limited number of codes that are counted for the whole sample, per case company, and it registers the number of words coded. Moreover, it is relatively easy to relate the data contained in the codes to firm-specific attributes, such as country-of-origin and industry (Bazeley, 2007). Finally, it enables the user to adopt an open coding method, in which the codes emerge from text, instead of being pre-determined (Strauss and Corbin, 1998).

Using an open coding method, we first came up with a long list of activities related to emissions trading that we considered important. Next, we grouped these activities together under a reduced number of (higher-order) categories (Strauss and Corbin, 1998). The first list of categories pertained to types of activities that firms are engaged in with regard to emissions trading. Given the nature of the CDP question, it is not surprising that this includes categories such as participation in the EU-ETS and other emissions trading schemes, e.g. UK-ETS and Chicago Climate Exchange. However, four other categories emerged as well; that is, the 'no activity' category, activities to prepare

for future inclusion in a trading scheme, client-oriented activities, and informing the climate policy debate. The second list of categories that we compiled refers to reasons for firms to follow the approach taken. This included categories on reasons to participate in and/or efforts to change the nature of emissions trading schemes, reasons for a wait-and-see approach, as well as reasons for taking no action at all.

### **MNCs' ACTIVITIES IN EMISSIONS TRADING SCHEMES: EMPIRICAL FINDINGS**

In this section we will outline how MNCs are engaged in emissions trading. Because MNCs are mostly active in the EU-ETS we will particularly focus on the way in which they take part in this trading scheme looking subsequently at compliance and institutional agency. We will shed light on the influence of this trading scheme's institutional form on the way in which firms participate in the scheme. Besides, we try to bring to the surface what motives firms have for trading in the EU-ETS. Next, we will assess how MNCs act in response to the alternatives for the EU-ETS.

#### **Complying with EU-ETS**

As already noted above, the most prominent public emissions trading scheme that is currently up and running is the EU-ETS. This is also directly reflected in the data on trading activity, most MNCs in the sample have their emissions trading activities linked to the EU-ETS. Many are directly involved in the EU-ETS because they are subject to a cap on their emissions and have been allocated allowances. As table 1 shows, seventy-two firms participate directly in the EU-ETS (22% of the sample). It is not surprising that

European firms form the majority with fifty-one firms having one or more of these installations. Even so, nineteen US firms are also covered; yet, not a single Asian firm in the sample is directly impacted by the EU-ETS. Nevertheless, the fact that twenty-two percent of the sample has installations under the EU-ETS does not necessarily mean that they are also actively engaged in buying and/or selling emission allowances. A closer look at the data sheds a different light on the intensity by which MNCs have embarked upon emissions trading.

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Table 1 about here

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The EU-ETS has been characterized as a public institution. If the EU-ETS would be effective it should create a strong constraint, as its goal is to bring down GHG emissions, and since enforcement is stringent, non-compliance would lead to severe penalties. These attributes are indeed seen in corporate responses to the CDP questionnaire. With some exceptions, firms with eligible installations cannot circumvent the EU-ETS; the scheme forces them to take their emissions into consideration. Enforcement is also taken seriously; a considerable number mentions that they expect to avoid paying non-compliance penalties. Correspondingly, compliance is the most often-cited motive for dealing with the EU-ETS, which the following quote of Swiss cement company Holcim illustrates:

Our priorities for the EU-ETS for 2005-07 are compliance management – i.e. internal and external balancing of emissions and allowances – and learning to use the system as it is conceptually intended to be used. We do not engage in



speculative trading.

The belief that trading is merely for compliance and not for speculation is shared by several other MNCs. ExxonMobil does not consider 'trading emission allowances as a business' and Repsol remarks that its 'participation in the market is orientated to low cost compliance and not to speculation.' Minimizing the cost of compliance is an often-heard argument, closely linked to firms buying allowances when they fear a shortage at the end of the first trading period, which runs until 2008.

Still, for MNCs that strive for compliance it does not follow logically that they are also buying or selling allowances. This can for instance be because a multinational is already affected by some other regulation that shows overlap with the EU-ETS. Cadbury Schweppes has tried to 'opt out', calling upon its participation in the UK's Climate Change Agreement; while Johnson & Johnson is exempted from trading in Belgium thanks to an 'energy covenant'. Many others, however, have refrained from trading for other reasons. A justification firms give for a 'no-trading strategy' is that they own a few installations only. Even if they have a surplus of allowances, they believe the administration and verification costs of selling them are generally too high compared to potential revenues. Another reason is that it has turned out that in the first allocation period (2005-2007) there is simply no necessity to buy, because there has been an over-allocation of allowances (Harvey, 2006). To summarize, notwithstanding its public nature, being covered by the EU-ETS does not automatically mean that it is perceived as a strong institutional constraint. Although MNCs cannot avoid the cap, this does not always mean they have to buy or are willing to sell allowances.

This is not to say that the trading provision of the EU-ETS is not used at all. A number of MNCs asserts that they are active traders in the EU-ETS, mainly including energy producers such as E.ON, Iberdrola, Suez, Shell, and ENI. However, for most firms that are directly impacted, trading entails occasional transactions, instead of continuous involvement. For example, Volvo mentions that their trading ‘is limited to get the allowances needed.’ Purchase of allowances is typically for compliance, but not many mention that they have done so already. Although there are more firms that report a surplus of allowances, only a few explicitly state having sold excess allowances. Before selling their surplus, it seems that many MNCs first balance their allowance accounts on a corporate level. In other words, the EU-ETS enables MNCs to trade across Member States but within their own organizations to deal with regulatory differences across the EU.

### **Institutional agency in EU-ETS**

On the surface, opportunities for institutional agency appear to be relatively modest in the EU-ETS. In the period in which the data were collected (end 2005/start 2006), such action may have been limited because, compared to other schemes, the debate on rulemaking for the first allocation period (2005-2007) had halted, and MNCs were more preoccupied with the consequences of the rules as they stood at the time. All the same, some firms stress that their institutional entrepreneurship had influence on the design of the first phase of the EU-ETS. Italian oil firm ENI, for example, asserts that it ‘has played a proactive role in the process for the definition of the Italian National Allocation Plan and it has supported rational allocation methodologies in line with the Kyoto targets.’

However, in general MNCs are not really transparent about their activities in climate change politics (Kolk and Pinkse, 2007). More indirect activities are more easily observed; for example quite a few firms raise their membership of industry and trade associations, which might have considerable influence on the on-going process of developing the EU-ETS.

The organizational field surrounding the EU-ETS is far from being stable, and better characterized as a field in its formative stage (Fligstein, 1997b). It is therefore not surprising that support is found in the data for Seo and Creed's (2002) proposition that actors, disadvantaged by the current shape of institutional arrangements, might become institutional entrepreneurs and try to change the rules. They also have the opportunity to do so, as the rules for the second phase of the EU-ETS (2008-2012) will only be finalized in the course of 2007. Particularly large energy consumers in chemicals, pharmaceuticals and metals complain openly about the fact that electricity companies have passed through the price of allowances to their customers. Mexican cement company Cemex warns for the consequences of 'leaking effects', meaning that energy intensive industries move their production facilities to countries that do not have an emissions target under the Kyoto Protocol. To prevent this from happening Cemex calls for a change in the EU-ETS to become 'a more efficient emission trading scheme' and it thus hopes 'that the current design will be improved in the near future.'

Electric utilities also continue to show their 'entrepreneurial' stake, but focus more on the debate what happens to the EU-ETS after 2012, when the first commitment period of the Kyoto Protocol expires. For example, E.ON wants a continuation of the EU-ETS in its current form to create more certainty for their long-term investments, and,

together with RWE, prefers a global framework to minimize the costs of reducing emissions.

We do find examples for the suggestion made in the literature that institutional entrepreneurship is a result of the ‘boundary bridging’ nature of MNCs (Greenwood and Suddaby, 2006; Maguire et al., 2004), as the following quote by Arcelor demonstrates:

The allocation of CO<sub>2</sub> credits per country, and even per region, runs counter to the worldwide approach of large sectors such as steel. Furthermore, the steel industry's major efforts to reduce greenhouse gases were not taken into account by the authorities. The existing system that can be called a ‘cap and trade’ system is anti-competitive. Arcelor has participated to the works of several international roundtables, like the OECD roundtable that took place last June 2005, to elaborate new rules for a global governance of global warming, by proposing a new approach based on the ‘baseline and trade’ concept, which means the CO<sub>2</sub> emissions quotas should be set in function of the average CO<sub>2</sub> emissions of a given sector which will help the best performing companies to invest in R&D and increase their production levels and the worst performers to update their process to use more efficient and cleaner production process.

Nevertheless, on the whole, opportunities for institutional agency to shape the EU-ETS are only moderately exploited by MNCs directly impacted by this scheme. On the contrary, for firms not directly affected, there are other types of opportunities, mainly to *reshape* the institution after it has been implemented, which are particularly recognized and exploited by the financial sector. Such opportunities to reshape the EU-ETS are due

to its novelty and size. Most firms lack the experience to trade a commodity such as emission allowances and need the expertise of financial middlemen to participate (Pinkse, 2007). Many banks, mostly European but some US as well, provide services to facilitate trading by clients, e.g. risk management services, or to buy and sell allowances on their behalf. By doing so they help the further development of the EU-ETS because, as Fortis argues, trading services have ‘the effect of increasing liquidity by allowing many companies to trade small volumes while avoiding the administratively cumbersome of setting up of an in-house trading desk.’ It is the limited size of the market that augments the role of financial middlemen. British bank Barclays illustrates the role of institutional agency by stressing the impact of its trading activities on the development of the EU-ETS:

Barclays was the first UK Bank to set-up a carbon-trading desk and we helped shape the development of the EU-ETS market (for example in helping create standard contracts and in sharing our own trading experiences with new players).

The Slovakian subsidiary of Belgian bank Dexia goes even one step further in its institutional agency as it claims to be the only private actor administering a national allowance registry, thereby taking up a public role.

Another way of using agency in dealing with the EU-ETS is by creating and trading emission credits from the Clean Development Mechanism or Joint Implementation. Since October 2004, CDM and JI credits can be used to fulfil the obligations under the EU ETS through the ‘linking directive’ (EC, 2004). By embarking upon particular projects that fit into regular business activities and at the same time lead

to emission credits, they are able to influence what constitute legitimate CDM/JI projects. In this way, it is possible for firms without installations to also participate in the EU-ETS. The Kyoto mechanisms are particularly attractive for MNCs because they enable them to further exploit their cross-border activities. As Deutsche Bank exemplifies, to support clients many banks are trying to generate CDM credits by financing projects in developing countries that might generate credits or invest in climate funds that pool CDM projects:

Deutsche Bank has been a pioneer in the field of CDM/JI projects - Deutsche Bank was one of only two banks to invest in the World Bank's groundbreaking Prototype Carbon Fund (PCF) and one of the only banks to participate in the Umbrella Carbon Fund (UCF). We are also involved in several private sector projects in a variety of countries and methodologies.

Activities with regard to the Kyoto mechanisms are not necessarily unrelated to compliance though. Various MNCs currently still facing low constraints on their GHG emissions are building a portfolio of credits for compliance in future periods of the EU-ETS, because unlike EU-ETS allowances, CDM credits do not expire after the first trading period.

### **Alternatives for using EU-ETS**

While the EU-ETS makes up most of the currently existing emission market, there are some alternatives. Looking at the data, there are three ways that MNCs use alternative

schemes to position themselves in the market. Firstly, some companies have taken early action by participating in the UK-ETS; the main precursor of the EU-ETS. Yet, only eight firms raise their participation in the UK-ETS and it is remarkable that this merely includes four UK firms, while the remainder consists of subsidiaries from US and Japanese MNCs. Most of these firms are compliance-oriented, have exceeded their target, and have been able to sell excess emissions. What explains low participation in the UK-ETS is the fact that it ended at the end of 2006, as it was superseded by the EU-ETS. Participation in Australia's New South Wales Greenhouse Gas Abatement Scheme is even more marginal as only one firm mentions to have explored the possibilities of this scheme and one bank has facilitated transactions.

Secondly, MNCs engage in alternative trading schemes to indirectly prepare for larger schemes expected to emerge in coming years. Participation in the CCX illustrates this. It reflects several features of the UK-ETS; only seven firms are actually engaged and most mention that they expect to reach their target, set as part of the CCX. It is a purely private institution, which leads to a positive selection effect; it only attracts those firms that can achieve their voluntary binding targets rather easily. What is different though is that the CCX merely involves US firms. Participants clearly use institutional agency as three of the seven firms are also founding members and aim to influence the development of a federal US emissions trading scheme. It is thus a form of institutional entrepreneurship as they motivate their participation as a way to prepare for a public trading scheme, because they anticipate a high constraint in the future. The political undertone of the CCX also deters firms. Electricity company FPL, for example, believes that it is 'not yet representative of what a real regulatory driven greenhouse gas market

program will be like’, and Occidental Petroleum argues that schemes other than the EU-ETS ‘offer little business reason for most companies to participate’.

Thirdly, MNCs are also starting to use institutional agency to more directly shape the institutional form of emissions trading schemes expected to emerge in the near future. Several companies take part in designing new trading schemes. The RGGI of the Northeastern states in the US for example seems to attract companies that worry about the potential adverse effects of the regional scheme:

PSEG is, however, very concerned about “leakage”. Leakage refers to the market imbalance created by requiring generators within the RGGI region to internalize costs of emitting CO<sub>2</sub>, whereas generators located outside of the region, but connected on the same electric grid, are not burdened with the same costs.

Involvement in potential future schemes in Japan, Korea, Australia and Canada is also mentioned. Looking at the corporate responses, firms particularly anticipate schemes in Japan and Canada, because these countries ratified the Kyoto Protocol. General Electric, for example, ‘is monitoring and in some cases participating in the process that other Annex B countries, such as Japan and Canada, are undertaking to ensure that they meet their Kyoto commitments.’ Nevertheless, most firms just wait for more clarity about the exact rules for trading before taking concrete action with regard to potentially upcoming schemes.

Up to this point, findings give the impression that many firms are responding strategically by getting involved in emissions trading schemes. However, this disregards the fact that still more firms have not responded to emissions trading schemes at all. As



the final two columns of table 1 show, many firms explicitly state that they have no clear-cut emissions trading strategy, of which some add that they have no intention to develop one either. A considerable number, however, is considering to develop an emissions trading strategy, but have not yet substantiated this claim. These two categories are not mutually exclusive though, as there are MNCs that have no plan to start emissions trading but nevertheless monitor international developments. This makes sense because once a trading scheme is implemented in the form of a public institution, firms cannot get round participation.

The reason why so many MNCs do not feel the need to become engaged in emissions trading is because it is simply not relevant to their business operations. We examined a broad sample, which includes many companies that do not have energy-intensive activities. However, the fifty-six companies that explicitly maintain not having a strategy also include major energy users. They can uphold this position on emissions trading, because as a result of their geographical spread they are not covered by the EU-ETS. Canadian oil and gas producer Encana asserts for example that it ‘does not have any production in the EU and does not currently envision becoming an active participant in any emissions trading scheme beyond that required to maintain compliance with any future Canadian GHG legislation.’ Since firms always incur some costs by engaging in emissions trading, those that are not expecting to make a profit out of it do not seem to be willing to join a scheme voluntarily.

#### **A FRAMEWORK FOR STRATEGIC RESPONSES TO EMISSIONS TRADING**

The empirical findings show that many MNCs have responded to emissions trading

schemes, but do so in very different ways. This is not surprising given the fact that we analysed a broad sample that included firms from a wide variety of sectors. Emissions trading particularly applies to energy-intensive industries and the EU-ETS has the intention to specifically incite these industries to change their activities in a way that produces less emissions (Haar and Haar, 2006). Correspondingly, predominantly energy producers and large consumers have actively responded to emissions trading with compliance as well as institutional-entrepreneurial activities. What comes out of the data as well, however, is that energy-intensive firms are not the only actors that have responded to the launch of emissions trading; specifically banks have also developed strategies. Nevertheless, it does matter for the way a company responds whether it faces or expects to be facing a high institutional constraint on their GHG emissions due to the cap of an emissions trading scheme. In addition, institutional agency, which is firm-specific and in some measure determined by geographical spread, also influences corporate responses, as within industries responses differ as well. It thus looks as if not all MNCs recognise opportunities in emissions trading similarly.

Figure 2 presents a framework that combines these two dimensions – expected institutional constraint and opportunity recognition – leading to a matrix that shows four scenarios for strategic responses to emissions trading schemes. The types of responses show resemblance with similar strategies that have already been identified in the literature (see Suchman, 1995; Oliver, 1991). The first strategy is to conform to institutional pressures and accept the institution as it is. In the framework this corresponds to a firm that is an *institutional conformist* (cell 1). In this scenario a firm expects to be constrained by the institution, but does not see many opportunities in

changing the institution and merely abides by existing rules and norms. Particularly large energy consumers in oil & gas, chemicals, metals, and pharmaceuticals mention compliance in response to the first phase of the EU-ETS.

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Figure 2 about here

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The second strategy is to select one organizational field in particular from all the potential fields it can belong to, which allows the firm to continue business-as-usual (Suchman, 1995). This corresponds to an *institutional evader* scenario (cell 2); it is a scenario where the institutional constraints are weak without clear opportunities to change the institution either. Many firms have the option not to belong to an organizational field that centres on emissions trading. It is not necessarily an active response; the majority of the sample is simply not affected by trading schemes because they do not own energy-intensive activities or have no production sites in the EU. However, some MNCs that are covered by the EU-ETS, still refrain from trading due to expected transaction costs or sufficient allocation of allowances. The findings suggest that the EU-ETS does not lead to a strong institutional constraint per se. Institutional evasion can thus be an outcome of the situation where there is no necessity for firms to invest in conformance. Yet, even without feeling a constraint firms can choose otherwise when they recognise opportunities to gain from emissions trading.

The other two scenarios in the framework correspond to a strategy where firms recognise such opportunities and try to influence the shape of the institution (Suchman, 1995; Oliver, 1991). The difference between the two scenarios, however, is the different

motives firms in each scenario have to enact their environment. The *institutional entrepreneur* (cell 3) has a direct interest in the functioning of the institution because the company expects to be constrained by the institution, if not now, then in the future. The institutional entrepreneur seizes the opportunity to change the institution in a way that alleviates the pressure that it feels and improves the institution's efficiency (Fligstein, 1997a), at least with regard to its own interests. It appears that electricity producers have been most successful as institutional entrepreneurs when it comes to the design of the first phase of the EU-ETS (Markussen and Svendsen, 2005). They have gained from over-allocation of free allowances, not only because it has relieved the institutional constraint of the cap, but also because it has led to windfall profits from passing through the opportunity costs to clients (Sijm et al., 2006). Currently, most opportunities for institutional entrepreneurship are in designing the allocation plans for the second phase of the EU-ETS as well as upcoming schemes in Canada, Japan and the US.

In contrast, the *institutional arbitrageur* (cell 4) does not have a direct interest in the efficiency of the institution as it only faces a weak constraint, but sees opportunities to gain from the institution in another way, be it financially or strategically. The arbitrageur gains from the unintended consequences that go with building a new institution by using the institution for purposes it was not created for in the first place (Fligstein, 1997a). It is the fact that emissions trading has created an open market for emission reductions that discerns it from other forms of environmental regulation. It basically opens up the possibility for involvement of parties not affected by the regulation itself. The financial sector most clearly acts as institutional arbitrageur as it benefits from other companies' lack of knowledge of emissions trading. Findings show that banks not

only take on this role for trading in the EU-ETS, but also for making credits available from CDM and JI projects. With regard to the Kyoto mechanisms other types of firms could also become institutional arbitrageurs when they create emission credits for selling in the EU-ETS.

To conclude, it must be noted that an MNC not necessarily fits in one of the scenarios of the framework only. Because most MNCs are geographically scattered organizations, it may well be that they play varying roles in different countries (Levy and Kolk, 2002). An MNC can for instance simultaneously be an institutional conformist in the EU-ETS and an evader or entrepreneur regarding the US schemes. Besides, timing also has a bearing on the response to emissions trading. In 2007, firms find themselves in between two phases of the EU-ETS. Most of them will have hedged their positions already by forward contracts to comply with the first phase (Scott, 2007), but this does not rule out concurrent entrepreneurial action to receive a favourable allocation for the second trading period. Future research on emissions trading strategies will likely show a different distribution across the cells of figure 2, particularly because it look like allocation for the second phase of the EU-ETS will be less generous (Scott, 2007), leading to a more compelling constraint on GHG emissions.

## **CONCLUSIONS**

With this paper we aimed to shed light on the way in which MNCs respond to new institutional constraints for the reduction of greenhouse gases that cause climate change, focusing on one institution in particular: emissions trading. Although it was intended in the Kyoto Protocol to implement emissions trading globally, for MNCs it has become a

globally fragmented institution instead and they face a wide variety of institutional forms that differ in scope and enforcement, thus creating different types of institutional constraints. We examined what the type of institutional constraint means for MNCs in terms of how they respond to emissions trading schemes and what opportunities they see for using institutional agency to (re)shape the institution.

The empirical analysis of 331 Global 500 firms suggests that the EU-ETS forms the most prominent scheme and, as a consequence, most firms have their emissions trading activities linked to this scheme. Firms covered by the EU-ETS generally conform to the institutional constraint for compliance. However, the cap on emissions seems more important than the trading facility. Since many firms are included with a few installations only and overall emission allowances have been over-allocated, many MNCs have been able to escape the need to trade. As the EU-ETS is still forming, there have been quite some opportunities for institutional agency. Over the past years, energy producers appear to have been most successful in shaping the EU-ETS, but this has created unease on the part of large energy consumers, who may become institutional entrepreneurs themselves in response. Of the firms not affected directly, particularly banks have been able to reshape the emission market by facilitating trading of others.

Corporate activities in other, more local trading schemes are almost negligible, but may be of political significance in stimulating countries without a domestic trading scheme to set one up. Findings also show that even though a considerable number of MNCs has become engaged in emissions trading, many still avoid it. For these firms emissions trading is either not relevant or they are not covered by the EU-ETS and do not wish to become part of a voluntary scheme. Nevertheless, such avoidance is no guarantee

that firms will not have to deal with emissions trading in the near future, because trading schemes are gaining ground all over the world.

Findings of this paper exemplify how crucial it is for managers to be aware of the development of emissions trading schemes. Otherwise, the high pace in recent policy developments may take them by surprise. Even if firms are currently not covered by a trading scheme, a potentially strong constraint of upcoming schemes should arouse firms to anticipate these as early as possible. It may thus be sensible to turn into institutional entrepreneurs – this seems to have paid off for electricity firms in the EU – instead of becoming dependent on institutional arbitrageurs who shape the institution to fit their own interests.

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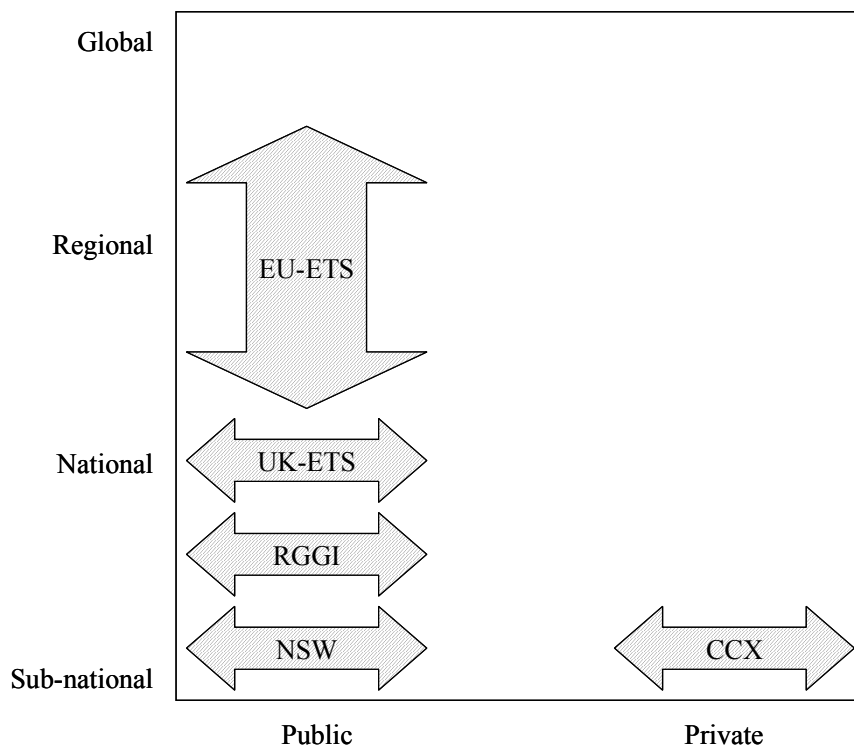
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**FIGURES AND TABLES**



**Figure 1** Characterising emissions trading schemes

		Opportunity Recognition	
		Low	High
Expected Institutional Constraint	High	1 Institutional Conformist	3 Institutional Entrepreneur
	Low	2 Institutional Evader	4 Institutional Arbitrageur

**Figure 2** Scenarios for strategic responses to new institutional constraints

**Table 1** Country patterns for emissions trading activities

<i>COUNTRY</i>	<b>N</b>	<b>Number of firms with installations in EU ETS</b>	<b>Number of firms considering emissions trading</b>	<b>Number of firms with <u>no</u> emissions trading strategy</b>
<b>Europe</b>	<b>128</b>	<b>51</b>	<b>11</b>	<b>12</b>
UK	33	16	7	4
France	25	12	1	1
Germany	16	8	2	1
Spain	8	2	0	1
Italy	8	1	0	0
Netherlands	7	3	0	1
Sweden	5	1	0	0
Belgium	3	0	0	1
Denmark	2	1	0	0
Finland	2	1	0	0
Ireland	2	0	0	0
Austria	1	1	0	0
Czech Republic	1	0	0	0
Switzerland	11	4	1	2
Norway	4	1	0	1
<b>North &amp; Latin America</b>	<b>152</b>	<b>21</b>	<b>35</b>	<b>44</b>
US	130	19	32	38
Canada	17	2	3	6
Brazil	3	0	0	0
Mexico	2	0	0	0
<b>Asia &amp; Oceania</b>	<b>50</b>	<b>0</b>	<b>16</b>	<b>9</b>
Japan	29	0	9	4
Hong Kong	5	0	1	2
Australia	4	0	1	1
South Korea	4	0	3	1
Taiwan	3	0	1	1
Saudi Arabia	2	0	0	0
India	2	0	1	0
Singapore	1	0	0	0
<b>Africa</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>
South Africa	1	0	0	0
<b>Total</b>	<b>331</b>	<b>72</b>	<b>62</b>	<b>65</b>

**NOTE**

<sup>1</sup> An organizational field is a network of various actors connected to a focal firm, which besides competitors for example also includes suppliers, consumers, regulatory agencies, and non-governmental organizations (DiMaggio and Powell, 1983).