Corporate strategy and the Kyoto mechanisms – institutional and transaction cost perspectives

Chapter · January 2008

DOI: 10.1007/978-0-387-73653-2_14

1 author:

Fredrik von Malmborg
Independent Researcher
24 PUBLICATIONS **1,570** CITATIONS

SEE PROFILE

To appear in "Business and Emissions Trading", R Antes et al. (Eds.), Springer-Verlag, Berlin (2005).

Corporate strategy in climate change mitigation: Institutional and transaction cost perspectives on corporate participation in Kyoto project mechanisms

Dr. Fredrik von Malmborg[1]

ABSTRACT

This paper sets out to examine the relative attractiveness of Kyoto project mechanisms as an option in corporate strategy to meet greenhouse gas emission targets. The analysis employs a transaction cost theory approach in combination with perspectives of institutional theory in organisational analysis. Empirical evidence is given for the case of corporate participation in JI by data from a qualitative study of corporate climate change strategies in Swedish companies. The analysis indicates that companies would find JI and CDM less attractive than other options. At present, it is claimed, these mechanisms does not provide companies with the legitimacy they need, rather it is legitimate to hesitate. In addition, the mechanisms are associated with too high uncertainties and transaction specific costs to be viable alternatives.

1. INTRODUCTION

With increasing calls for new approaches in environmental policy, emissions trading is introduced as a key instrument in policy and management for climate change mitigation (von Malmborg & Strachan, 2005). Besides the international mechanisms related to the UN Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol, emission trading schemes (ETS) are introduced in national (e.g. United Kingdom) and regional (e.g. the European Union, EU) climate change policy programmes, to increase flexibility and cost-effectiveness in strategies to meet the national/regional Kyoto target. Whilst the UNFCCC system focuses trading of greenhouse gas (GHG) emission allowances between nations, the national and regional ETSs, like the UK ETS and EU ETS, focus trading between companies. The EU ETS is introduced also to provide flexibility in corporate strategies for reducing GHG emissions. With the so-called 'linking directive' (2004/101/EC), recently adopted by the European Council and the European Parliament, the project-based mechanisms of the Kyoto Protocol will be linked to the EU ETS, allowing companies to top up their emission allowance accounts with emission credits from joint implementation (JI) and/or clean development mechanism (CDM) projects.[2] The 'linking directive' is intended to further increase the

[1] Correspondence: Dr. Fredrik von Malmborg, Climate Policy Section, Swedish EPA, SE-106 48 Stockholm, SWEDEN. Tel.: +46 8 698 8525; E-mail: fredrik.vonmalmborg@naturvardsverket.se

[2] JI projects are to be undertaken in developed or countries with economies in transition (Annex I Parties to UNFCCC), involving at least two countries who have agreed to an emission target. JI projects render emission credits in terms of 'Emission Reduction Units' (ERUs). CDM projects are to be hosted by developing countries (non-Annex I Parties to the UNFCCC) who do not have quantitative emission reduction targets. CDM projects render 'Certified Emission reductions (CERs).

flexibility in corporate climate change strategies and the cost-effectiveness of the European climate change programme.

The high hope among climate policy-makers for emissions trading as an effective and efficient policy instrument rests on the assumption that companies are technically rational actors. According to neo-classical economics, backing up the current belief in emissions trading (Tietenberg, 1985; Nordhaus, 1998; Skea, 1998; Sorrell & Skea, 1999; Goulder & Nadreau, 2002; Janssen, 2003), corporate behaviour is guided by informed comparisons of internal marginal costs of mitigation and emission allowance market prices. A company with mitigation costs above the market price would buy emission allowances instead of reducing emissions in-house. Since mitigation marginal costs are generally lower in economies in transition and developing countries (i.e. appropriate host nations for JI and CDM projects), many companies in the EU are also envisaged to invest in JI and/or CDM projects. It is hard to estimate the precise magnitude of economic impacts, but it has been claimed that the 'linking directive' may half the market price for allowances in the EU ETS (Criqui & Kitous, 2003). However, it is common knowledge in organization theory that companies, as well as individuals, act with a more or less bounded rationality. Moreover, market solutions are not always the best and transactions are often withdrawn from the market and resources are integrated hierarchically (Williamson, 1975). Thus, we are likely to find deviations from economic theory in the practical applications of GHG emissions trading.

Given the recent adoption of the 'linking directive' and Government calls for more private investment in national JI- and CDM-programmes, putting the project based mechanisms of the Kyoto Protocol in focus of companies, this paper aims at examining the 'likelihood' of companies with GHG emission targets in enrolling with the project based mechanisms. A guiding question for the paper is: How attracted are are companies to investing and participating in JI and/or CDM projects? From a public policy point of view, the paper will thus shed light among other things on the potential contribution of the 'linking directive' in providing flexibility to European climate change policy and the EU ETS. As such, it complements previous analyses of the proclaimed cost-effectiveness of the project-based Kyoto mechanisms (e.g. Jackson, 1995; Fichtner *et al*., 2003; Michaelowa *et al*, 2003). More importantly, the paper also provides valuable knowledge on corporate strategic behaviour in emissions trading and climate change mitigation.

Next section outlines the theoretical framework employed in the paper. Then empirical evidence is given for the case of corporate participation in JI, drawing from a qualitative study of corporate climate change strategies in Swedish companies. In the fourth section, the theoretical and empirical perspectives are synthesised. With regard to the specific structure of the project-based Kyoto mechanisms, no information is given in this paper, but Jackson *et al*. (2001) provides a good introduction. The mechanisms and their linking to the EU ETS are also described in a working paper of the European Commission on impacts of the 'linking directive' (CEC, 2003).

2. THEORETICAL PERSPECTIVES ON CORPORATE CLIMATE STRATEGY

There are many schools and theories of strategic and operative behaviour of companies and other organizations. I share the general position of contemporary organizational theory that organizational behaviour, in terms of attitudes and actions of the individuals and collectivities that constitute organizations, is dependent on the interplay of external and internal factors. I also agree with Perrow (1986) and Scott (1992) that internal factors are heavily influenced by external factors rather than vice versa. Organizations are open subsystems integrated in a social context (Parsons, 1956), symmetrically or asymmetrically dependent on external actors and influenced by the environment via external uncertainties (complexity and change) and external pressure in terms of values, culture, politics and technologies etceteras. In order to survive and prosper, an organization must adapt to the changing environment—acknowledging not only the technical environment, but also the institutional environment. The particular institutional environment determines what is perceived as legitimate behaviour, and any organization must be perceived as legitimate by central actors in the social context in order to get the support necessary to sustain (Selznick, 1957; DiMaggio & Powell, 1991; Meyer & Scott, 1992).

From this follows that an institutional perspective is important for a proper understanding of corporate behaviour in relation to JI and CDM, and in climate policy more generally. Such an approach has also been employed in previous studies of corporate strategy in relation to emissions trading (e.g. Engels, 2001; Paulsson & von Malmborg, 2004). To give a richer understanding, accounting for both technical and institutional factors, this paper, however, combines the perspectives of institutional theory in organizational analysis with an economic perspective on organizational behaviour—i.e. transaction cost theory (Williamson, 1975, 1981, 1990). If we consider a company with restrictions to meet a specific GHG emissions target, assuming also a flexibility to choose between in-house measures to reduce emissions and buying emission allowances on a market or through investment in a JI/CDM project, the strategic question of corporate climate policy and management would be: Should we reduce our own emissions or should we buy emission reductions produced by someone else? This is analogous to the basic problem that transaction cost theory sets out to solve: Why do companies sometimes choose to produce a good or service themselves, instead of buying it on a market (as assumed in neo-classical economic theory)? Common fundaments in both theories employed here, making them compatible despite the different perspectives, are the focus on the organization's dependence on and relation to other actors in the environment, and the acknowledgement of bounded rationality of any actor.

2.1 Companies seek to minimize transaction costs

As indicated, the basic question from the corporate strategy point of view in transaction cost theory is: Should we produce the resource ourselves, or should we buy it? According to Williamson (1981), three factors determine why an organization buys some goods and services and integrates other in the own production: (i) the degree of uncertainty/complexity of the transaction, (ii) the transaction density (i.e. how

often a transaction is to be made), and (iii) the amount of transaction specific investments (i.e. investments arising from initiating and completing a transaction, with little value external to the specific transaction—e.g. finding partners, holding negotiations, consulting with lawyers or other experts). If a transaction is considered complex and bear the stamp of uncertainty, which all transactions do according to Williamson, it is mainly the two remaining factors that determine whether a company should choose the market solution and buy a product or a hierarchical solution and produce what it needs itself (Williamson, 1981, 1990). Figure 1 presents a simplified typology of structural solutions for managing transactions with external actors, as suggested by transaction cost theory.

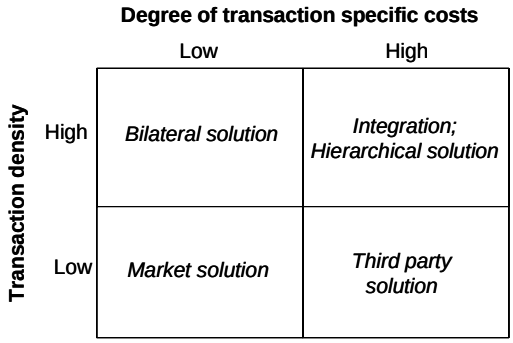

Figure 1. Typology of structural solutions to managing transactions

When small transaction specific investments are made and the transaction density is low, organizations can choose market solutions, even in uncertain conditions. If specific costs are low but transaction density is high, it may be more attractive to arrive at a bilateral agreement with a specific contractor. If the transaction density is low and transaction specific costs are high, the partners face the risk of strong inter-dependencies. In such cases, they should look for a third party solution. If transaction density as well as transaction specific costs are high it is most reasonable to integrate production hierarchically in the organization and take care of it yourself. Hence, uncertainties are reduced and transaction costs can be kept low (Williamson, 1975).

Turning to the case of corporate strategy in climate change mitigation, the transaction cost analysis would focus (i) the degree of uncertainty/complexity of different options to meet a corporate GHG emission target (for instance given by the initial allocation of emission allowances in the EU ETS), (ii) how often the company will need extra room for emitting GHGs, and (iii) the amount of transaction specific investments related to the different options. With regard to the typology of structural solutions, buying extra allowances in the European carbon market would be considered a market solution, while investing and participating in JI or CDM projects to receive emission credits for subsequent exchange into EU allowances would be considered a bilateral solution. In-house emission reductions count as a hierarchical solution, while, finally, private investment in a fund (e.g. the World Bank Prototype Carbon Fund, PCF) may be considered as a third party solution. To what extent bilateral solutions would be attractive to companies, particularly those forced to participate in the EU ETS, is the focus of the final discussion.

2.2 Companies seek legitimacy in the organizational field

It was indicated above that an organization must not only produce and provide goods or services in a technically efficient way to survive. It must also adapt to norms, values and beliefs in its particular institutional environment, i.e. the organizational field, to be legitimate (Selznick, 1957; DiMaggio & Powell, 1991; Meyer & Scott, 1992). From an institutional perspective, government policies are central to the understanding of corporate formulation, prioritising, profiling and communication of goals and how they act on a day-to-day basis to realise the goals that will give them legitimacy (Schwartz, 1997). Government and authority policies on all levels affect organizations and their interrelations. But besides regulative institutions, companies are also influenced by social norms and culturally cognitive pressures (Scott, 2001). Thus governments and authorities are not the only actors shaping the norms in the organizational field of a company. Other companies (e.g. customers, contractors, competitors, consultants), business organizations, social movements, academia and media may also be important in this process of signification and institutionalisation of a certain legitimate conduct. In addition, the company itself participates in shaping the norms of its own organizational field. Organizations located in a specific organizational field react to an environment composed of other organizations reacting to their environment, which means that the organizational field is composed of organizations reacting to an environment of reactions of organizations (DiMaggio & Powell, 1991; Czarniawska-Joerges, 1992). Companies may adapt to the norms reactively, often mimicking what others are doing in a similar situation (Meyer & Rowan, 1977). Companies may also act (pro)actively to influence future legislation and other institutions in directions that would make the present company behaviour legitimate in the future. They can also seek legitimacy by decoupling, acting (pro)actively in one area to make up for past or hide present illegitimate behaviour in other areas (Brunsson, 2002).

In order to understand and explain corporate strategy in relation to the Kyoto project mechanisms, it is thus important to analyse the values, beliefs and rationalising norms related to JI and CDM that companies (have to) relate to—i.e. are influenced by and try to influence. According to institutional theory in organizational analysis, companies will be attracted to the project-based Kyoto mechanisms if it guarantees legitimacy in the organizational field.

3 CORPORATE VIEWS ON JOINT IMPLEMENTATION

3.1 Outline of the empirical study

As an empirical basis for the analysis of corporate strategy related to the Kyoto project mechanisms serves data provided from a study in Sweden of corporate views on JI (for details, see von Malmborg *et al*., 2002). The main purpose of the empirical study was to provide qualitative business perspectives on the prerequisites for implementing JI in Sweden, and the main question addressed was: What would make Swedish companies invest and participate in JI projects?

Since detailed knowledge of the Kyoto project mechanisms was not widespread in the Swedish business community at the time of the study (and still is not), data was mainly collected in full-day workshops with different groups of companies, employing focus group interviews (Morgan, 1997) as main data collection technique. Each workshop was opened with presentations of JI in general and the status of Swedish institutions for flexible mechanisms. The company representatives were given the opportunity to pose questions about JI and emissions trading directly to officials from the Swedish Government, The Swedish Energy Agency (being responsible for administration of the Swedish JI and CDM programmes) and two governmental commissions related to the flexible mechanisms. The presentations were followed by a short discussion on corporate strategy in climate policy, providing information on strategies and measures at the companies represented. Finally, the respondents took part in a target-modelling exercise, determining and discussing opportunities and obstacles for participation of companies in JI as well as concrete measures as for enabling such participation. Notes were taken throughout the presentations and discussions, and the results and discussions of each target modelling were recorded. To prepare the respondents for the workshops, information material describing and explaining the structure and process cycles of JI, and a short interview guide, were sent to all participants in advance.

In all, three workshops were held with representatives of 15 Swedish companies from different industry sectors. The study covered companies with very large GHG emissions (e.g. energy conversion (powergen and district heating), chemical industry, refineries and metals industry) as well as companies with hardly any GHG emissions but mainly providing technology/knowledge to reduce GHG emissions (e.g. energy engineering industry and consultants). Worth noting, minerals industry and pulp and paper industry were not represented. Each company was represented with one person, serving as environmental manager, energy market strategist or vice president (technology/production). Reflecting upon the low number of participants, it should be mentioned that it well represents the total number of companies interested in Kyoto project mechanisms. A follow-up by telephone asking why the rest of the 140 companies initially invited did not want to participate envisaged that climate change was very often less prioritized than other environmental issues in corporate environmental management. Some companies even claimed that climate change was too long-term an issue to fit their corporate policy and strategy. Lack of explicit corporate climate strategies was evident also in the 15 companies taking part in the study. Only one of them, a refinery, had a well developed climate strategy. Given a general understanding of Sweden and Swedish companies as leaders in environmental policy, management and technology (Andersen & Liefferink, 1997), this is conspicuous. One should bear in mind, though, that the workshops were arranged almost a year before the EU ETS Directive was agreed upon and that the last year has seen a dramatic increase in media coverage of climate change. When this is written, in the autumn 2004, climate change has higher priority in corporate strategy in Sweden. If not for other reasons, the EU ETS has forced them to address the topic.

It should be noted that the data used is two years old, and this may be considered too old given that there is a rapid development in the climate policy area. However, I consider the data on corporate positions related to the project based mechanisms still to be representative and valid. A recent seminar on the theme "How companies can use the Kyoto project mechanisms", organised by the Swedish Energy Agency in late November 2004, was attended by five per cent only of the Swedish companies with installations in the EU ETS, and they corresponded to ten per cent only of the seminar attendees. The majority of attendees were representing governmental authorities, universities, business organizations and consultancies. Apparently, the interest in JI and CDM in Swedish companies with mandatory GHG emission targets is still limited. This is also confirmed by Point Carbon, the leading carbon market analyst (J. Buen, pers. comm..). Point Carbon has a lot of Swedish companies as subscribers to the free of charge newsletter and cheap services, but hardly any as subscriber of the more expensive services focusing in particular on JI and CDM.

3.2 Swedish companies' views on JI

From the study it was found that Swedish companies at present, if not directly opposed, play a waiting game regarding investments and participation in specific JI projects. According to the data, companies would invest and participate in JI projects if and only if it is found to be the most competitive of different alternatives for the company to meet its carbon dioxide (CO_2) emission restrictions (targets) or, if it represents a profitable project. The former condition applies for companies with considerable CO_2 emissions, the latter for companies with low or no such emissions (instead investing to sell technology or knowledge). However, JI is perceived of as risky a project associated with large uncertainties and no company did really think of investing and participating in a JI-project.

3.2.1 Little knowledge of JI

The conceived of uncertainties associated with JI participation are partly related to the low level of knowledge about JI among the companies. Representatives of the energy companies and environmental and energy technology and management consultants taking part in the study claimed that some people in their organizations (but not the senior management) know of JI in detail—but only theoretically. The remaining participants have little knowledge of JI. None of the companies had practical experience of JI or its prototype, AIJ (activities implemented jointly). According to the respondents, the widespread lack of knowledge is related to indistinct and ambiguous messages in the current Swedish national climate policy, which among other things tell that flexible mechanisms both should and should not be used to achieve the national climate policy targets. In addition could be mentioned ambiguities whether the Swedish state is interested in JI from a climate policy perspective or rather from technology export and development aid perspectives. In all, hardly any actor (governmental, private or civic) tells that companies would participate in JI. It is mainly the Swedish Energy Agency that work with JI (and CDM). The recent seminar referred to above is perhaps a turning point – but few companies attended. Uncertainties of the future of climate policy strategy, nationally and internationally, is another main factor influencing the companies.

3.2.2 High uncertainties in JI

The obvious hesitance about JI is also related to uncertainties regarding proceeds of JI projects as well as the true costs for undertaking a JI project. At the cost side it is primarily high costs for planning, administrating and controlling a JI project that make companies hesitate. A number of uncertainties were also revealed in relation to the practical organisation of a JI project: What will be required from the private JI actor and what will this require from the internal organisation? As mentioned, the level of knowledge about JI is relatively low in most companies today, and there is limited preparedness internally in most companies as for how to manage a JI project. There are also uncertainties concerning the external organisation of a JI project. What kinds of contacts and agreements with actors in the country where the project will be carried out will be required? Or as one of the respondents did express it: "You come to Bucharest, enter a taxi, and ask yourself – Where will I go next?" As an implication, companies fear that costs for raising the internal competence and for creating and maintaining necessary external contacts may show to be very high.

3.2.3 Narrow scope of JI

In addition, it should be stressed that some companies see a problem in JI-projects being exclusively focused upon climate issues when it comes to crediting. They asked for broader crediting, taking into account for instance reduction of other pollutants. Companies live in a pragmatic world and cannot, as authorities, ministries and governments can, discriminate different environmental issues. They must handle all issues at the same time. This counts not only for environmental issues, but in general. In order to survive, a company has to meet requirements on economic profitability, different environmental standards, quality standards, equity standards, requirements on social accountability and much more, all at the same time. JI-institutions and the Swedish authorities' view and way of acting regarding JI, seem not to join in full the ways in which companies act. As a consequence, the attractiveness of JI is limited.

3.2.4 Invest in own facilities

Finally, an interesting result of the study is that companies with CO_2 emissions, if they (against the odds) are to invest directly in JI projects, would only consider investments in projects meeting certain criteria regarding 'location'. First of all, all companies made clear that they would only invest in projects in the same sector that they operate in. Secondly, they would only invest directly in JI projects in countries where they are already working.[3] Thirdly, and partly as a consequence of the other criteria, they would only invest in their own facilities in other countries. It was explicitly stated by companies in the process/manufacturing industry acting on an international competitive market, that they are interested only in investing in JI projects in own industrial plants in the host country—if they have any. They saw no reasons to invest in plants that are owned by other companies, and thus to subsidise their competitors. A corresponding restriction on participation in JI projects in own facilities only was not explicit in the energy companies, who act on more

[3] Worth noticing, countries that were initially prioritised in the effort to meet framework agreements between Sweden and potential host countries for Swedish JI projects are of low priority according to these companies. As a matter of fact, the Swedish Government's priority list of JI host countries changed due to this result. Romania was initially of low priority, but turned out to be the first country signing a framework agreement with Sweden.

local/regional markets and are less subjected to international competition. However, the energy companies represented in this study are all expanding outside Sweden, and investing in a JI project in a power plant in eastern Europe would be closely related to a take-over of the plant. Thus, the investment is in fact made in an own facility (*in spe*).

4. CORPORATE STRATEGY RELATED TO KYOTO PROJECT MECHANISMS

According to the theories framing the analysis, a company would invest and participate in JI/CDM if it provides the lowest transaction costs related to getting hold of emission allowances, and if it renders legitimacy in the organizational field of the company. From the empirical study reported in the previous section, it was evident that few, if any, Swedish companies in need for GHG emission reductions considered investing in a JI project in the near future. In this section I will combine the theoretical perspectives and the empirical evidence and try to explain how corporate strategy related to Kyoto project mechanisms work. Given the empirical hesitance to invest and participate in JI projects, the analysis will be directed towards explaining why companies are likely not to choose the JI/CDM tack if they are in need of (extra) room for emitting GHGs. Some suggestions as for how to make companies more interested in the Kyoto project mechanisms are also provided.

4.1 Indistinct institutions and internal traditions make companies wait and see

In order for an organization not to be questioned or perceived as deviant, it tries to adapt to external values and norms when formulating goals and organizing the business. What then are the values and norms related to corporate investment and participation in JI and CDM? It should be stressed here that the analysis mainly regards the Swedish situation, but reflections are made on potential differences in institutional pressures on companies in different countries.

4.1.1 International institutions of climate change mitigation

Starting from above, the global/international climate change institutions, with UNFCCC as main proponent of flexible mechanisms, present little pressure on companies to invest in JI/CDM projects. The Kyoto Protocol and Marrakech Accords, outlining the structures and rules of JI and CDM, are directed towards nation states. Accordingly, the institutions of Kyoto project mechanisms are adapted to nation states rather than companies. The World Bank PCF, aiming at raising knowledge of JI through collaborative learning, has seen some private investors, but it mainly *allows* companies to invest, which is different from forcing or encouraging. Besides, a company investing in PCF doesn't really participate in a JI project. Instead, it pays for other organizations (companies) to do the work in complete: from identification to planning, performing and monitoring..

4.1.2 National institutions of climate change mitigation

At a lower policy level, governments of nation states have called for increasing private investment in JI and CDM. However, one may question whether they are truly interested in companies that are in need of extra emission credits/allowances to invest and participate in JI/CDM projects. In most nations, these companies would be competitors to the State with regard to the emission allowances generated in the project. Consider a company enrolled with the EU ETS and located in an EU member state that foresee extensive use of project based emission allowances to meet its national target given by the EU burden sharing agreement. From the 2004 national allocation plans of the EU-15 member states (all potential donor countries with regard to JI/CDM, while the new EU-10 with one exception so far have been regarded as suitable host countries of JI projects) it is obvious that Kyoto project mechanisms play a key role in the national climate change programmes, sometimes counting for fifty per cent of the emission reductions necessary for the nation to meet its Kyoto target. A company under the EU ETS investing in and undertaking a JI/CDM project would gain credits that the nation cannot use for meeting its target. In such cases, the private investments called for would come from companies that want to sell emission reducing technology or knowledge (e.g. environmental engineering companies or consultants) rather than companies in need of emission allowances themselves. The latter will actually compete with nation states to find low cost projects.

In Sweden, the Government does not plan to make use of Kyoto project mechanisms to meet the Kyoto target, why this competition is less likely to occur. Nevertheless, measures take so far to engage companies in JI/CDM are primarily directed towards companies selling emission reduction technology and knowhow. As presented in the last section, some companies sincerely questioned if the Swedish JI/CDM programme was part of the national climate policy, or part of a technology export policy or development aid policy. In relation, Swedish companies repeated several times the ambiguity of the Swedish national climate strategy, telling that the flexible mechanisms should be used whilst simultaneously implementing the EU ETS as well as JI/CDM programmes. This gives strange signals to Swedish companies in terms of rationalising norms. Whether other EU member states are more positive to corporate use of JI/CDM is not known. It should be noted that the Dutch Government has launched two tender programmes (ERUPT and CERUPT) where companies get paid to undertake JI and CDM projects for delivering ERUs and CERs to the State. Similar programmes are emerging in other EU member states. Again, such policy measure helps the State to get emission credits, not the companies in need for emission credits.

4.1.3 EU 'linking directive' provides an option only

The EU 'linking directive' is the first institutional signal to companies in need for emission allowances to really consider the Kyoto project mechanisms. However, it is not a coersive force—and it shouldn't be given that it aims at increasing the flexibility of corporate climate strategy in EU companies. Due to its nature, it will not provide signals to the market other than that it is now ok from a (supra)governmental perspective for companies to invest in JI/CDM projects. From a perspective of corporate climate strategy, the 'linking directive' institutionally tells little else than that it is not illegitimate for companies to make use of credits from JI/CDM projects in the EU ETS.

4.1.4 Lack of public debate and critics of corporate behaviour

So far, business organizations, social movements like national or international environmental organizations (e.g. Swedish Society for Nature Conservation, Greenpeace, WWF), academic societies and media have played anonymous or silent roles in the shaping of norms of corporate behaviour in relation to JI and CDM. Some of the environmental organizations have made statements about the mechanisms, but they haven't been active. At least, this is the situation in Sweden. In fact, some of the companies participating in this and a related study (see Paulsson & von Malmborg, 2004) noted that there is a complete lack of (public) discussion and debate over the flexible mechanisms, the project based mechanisms in particular. In other words, the institutionalised solution to the problem, if it is perceived of as a problem at all, is to wait and see.

In a situation like that facing Swedish companies, where no strong policy coalitions in the organizational fields of companies speak clearly in favour of or against JI (or CDM), it appears that companies adopt a wait-and-see strategy regarding the Kyoto project mechanisms. Evidently, Swedish companies stand by and wait for a clear signal to either go ahead or terminate any potential JI/CDM bid. As long as no-one is criticising this behaviour to such an extent that it turns out to be illegitimate, this is a successful strategy and defensible behaviour from the perspective of institutional organization theory.

Reflecting upon the reactive nature of Swedish companies, it is interesting to note that no company have invested or intended to invest in JI or CDM as a (pro)active means to improve the image. This was touched upon by some respondents of my study, claiming that participation in JI (and CDM?, my addition) potentially may give the company environmental goodwill. However, they thought that this alone was not enough reason to enter a project. Besides, the (then) lack of public or political debate on climate change and other environmental issues wouldn't increase the intangible returns of a JI/CDM project. Although the public awareness of climate change has increased significantly in two years time, partly due to increasing public debate and media coverage, the public knowledge of JI/CDM is limited and 'no-one' would know what good comes out of a JI/CDM project. It is against this background the wish for broader crediting of JI-projects, put forward by some respondents in this study, should be interpreted. It should be mentioned, though, that companies in other EU member states, particularly large multinational corporations, may be more exposed and criticised by the public or environmental movement. Consider for instance Shell/Royal Dutch with Brent Spar. As a consequence, they may find participation in JI/CDM more attractive, trying to make up for previous illegitimate behaviour.

4.1.5 Companies expect command-and-control

Another reflection to be made on the reactive approach of Swedish companies is the low interest in really influencing the policies, legislation and other institutions of the flexible mechanisms. There is no difference between EU ETS and JI/CDM in this respect (cf. Paulsson & von Malmborg, 2004). Answering a direct question, the respondents asserted that the State decides what is to be done regarding JI and the other flexible

mechanisms. They also claimed that the companies entered the policy debate too late, and referred to lack of dialogue between the State and the companies. They criticised the government and authorities as well as the business organisations, which have a dialogue in which the companies does not participate. Paradoxically, the companies do not seem to do anything to change the present order—at least they couldn't present any evidence. Instead of trying to engage in a dialogue with the Government and authorities, the companies continue to rely on the knowledge and work of the business organizations in trying to influence public policies. One of the respondents in my study said, without being criticised by other company representatives, that "Swedish companies generally start playing when the rules are set by the authorities". My own experience of the policy process related to implementing the EU ETS in Sweden gives further evidence to this state of play. Very few companies have been active in the process leading to for instance the rules of allocating emission allowances. Most companies reacted just when the rules were decided, obviously too late to make a difference. With very few exceptions, the business organizations represent the 'industry' in the early lobbying of climate change and flexible mechanisms policies. However, this seemingly conspicuous state of play is no real surprise—it rather seems to be a tradition in the way companies act in relation to the State. As a matter of fact, Dobers (1997) explains that Swedish industry companies are stuck in a command-and-control manner in environmental policy and management, expecting and waiting for the State to tell what to do in new problem areas, despite earlier calls from industry to participate in and influence more the policy formulation. Schwartz (1997) has also explained this path dependency or automorfism in Swedish corporate environmental management and corporate relations towards the State and other actors in environmental policy.

4.2 Uncertainty and high transaction costs make bilateral solutions less attractive in corporate climate strategy

4.2.1 High uncertainties in climate change policy

Employing an institutional perspective in analysing corporate climate strategy indicates that corporate investment and participation in Kyoto project mechanisms doesn't seem to guarantee the legitimacy needed for survival. How, then, will the situation turn out when looked at through transaction cost theoretical spectacles? First of all, it is needless to say that the Kyoto project mechanisms are connected with large uncertainties for a company, as is corporate climate strategy in general. Some question marks have been straightened since the empirical study was undertaken two years ago—e.g. there are now international institutions in place for JI and CDM projects, the Kyoto Protocol will enter into force in February 2005, and Sweden as well as several other countries has signed framework agreements with a number of host countries. However, there are still many uncertainties influencing companies considering how to manage GHG emissions. What will the initial allocation be in the second trading period of EU ETS? How will international climate policy look like post-Kyoto? What about the political stability in the potential host countries? How will the price of emission allowances develop? What are the real costs of JI and CDM projects? According to transaction cost theory, the attractiveness of JI/CDM will then depend on the transaction density and the degree of transaction specific costs. Considering corporate direct investment and participation in a JI/CDM

project as a bilateral solution, the theory would favour JI/CDM if transaction density is high and transaction costs are low. Below, the state of these factors are discussed. In comparison to the institutional analysis, it should be noted that this analysis is less dependent on the country of origin of the companies.

4.2.2 Moderate to high transaction density

Regarding transaction density, i.e. how often a company need to 'not exceed the presently available amount of emission allowances', it should be admitted that the border between 'high' and 'low' (cf. Figure 1) is blurred and all but easy to delineate. It is a continuum rather than a distinct switch. Given that companies under the EU ETS are obliged to report a balance or surplus of emission allowances in relation to the actual emissions annually for several years ahead, it would be fair to assert that the transaction density is moderate to high for these companies. If the company has more than one installation under the EU ETS, the transaction density would increase. Fichtner *et al*. (2003), who analysed the impact of private investor's transaction costs on the cost effectiveness of project-based Kyoto mechanisms, consider the corporate possession of a sufficient amount of emission allowances as a major input factor to production, thus supporting my assertion.

4.2.3 Transaction specific costs are high and 'boundless'

Continuing with transaction specific costs, the third factor determining corporate behaviour according to transaction cost theory, I have not been able to collect quantitative data of transaction costs actually hitting companies. At the time of my empirical study, no JI or CDM projects were approved. In fact, it was only recently (November 2004) that the first CDM project was approved by the CDM executive board. Moreover, none of the companies participating had taken part in some of the Swedish and other AIJ projects that has been undertaken. These projects were initially administered by the Swedish Business Development Agency, and finalised by the Swedish Energy Agency, the latter who is now administering the Swedish JI and CDM programmes. However, the UNFCCC provides relatively good data on costs of the Swedish AIJ projects, which have been analysed in several studies recently (e.g. Jackson *et al*., 2001; Michaelowa *et al*., 2003). In addition, Fichtner *et al*. (2003) have estimated transaction costs of JI and CDM projects by analysing data of 60 other AIJ projects as well as indirect costs of investment in some new power plants realised as independent power producers. Despite limitations in data, and somewhat different approaches, these studies have found that transaction costs of international GHG mitigation projects have previously been underestimated, and that they are usually higher than expected. The Swedish AIJ projects have seen transaction costs on average amounting to 25-37% of production costs (Jackson *et al*., 2001) or 14-21% of total costs (Michaelowa *et al*., 2003). The lower end refer to fuel conversion projects and the higher end to energy efficiency projects. Fichtner and his colleagues (2003) report that 80% of 60 other AIJ projects evaluated have transaction costs hitting private investors amounting to 14-89% of production costs, or 12-47% of total costs. Accounting for more than 80% of transaction costs, expenditure for administration and technical assistance is said to be most influential. In addition, these studies provide some evidence to the

influence of economies of scale on the share of transaction costs. Larger projects bear lower transaction specific cost per unit of reduced emissions (e.g. t CO_2).

The finding of others that transaction costs are usually higher than expected give quantitative evidence to the uncertainties and risks expressed by the respondents in this study—referring in particular to risks of increasing costs. All companies covered in this study claimed that they didn't see business potentials in prioritised host countries of Swedish JI-projects, and they asserted that investment in JI-projects would render no or very little benefit except for the emission credits generated. Similar concerns over the potential of the Kyoto project mechanisms to bring other values than emissions credits and the complex structure of the mechanisms, increasing transaction costs, have been raised by the World Business Council for Sustainable Development (WBCSD, 2000). As a consequence, the amount of transaction specific investments would be rather high if companies are to undertake a JI- (or CDM-) project. In comparison to JI/CDM projects, in-house investments would have very low transaction specific costs. Regarding internal measures to reduce emissions (other than reducing production output), the companies included in this study considered primarily energy efficiency measures. Such measures would not only reduce emissions of GHG (mainly CO_2), but also contribute to better economy of production and a general increase of performance and value of the facility. The same would be valid for other in-house measures too, due to the fact that all potential measures are related to production level or production technology. There are presently no wholesale end-of-pipe technologies for reducing GHG emissions. The investments made in-house does not only burden the item of emission reduction. In all, it would be rather safe to say that transaction specific costs of Kyoto project mechanisms would be rather high, compared to all other potential options. Comparing the Kyoto project mechanisms, Michaelowa *et al*. (2003) argue that CDM projects will have to bear higher transaction costs than most JI projects. Referring to Shell, Michaelowa and colleagues also report that transaction costs of JI/CDM projects would not exceed 25 % of proceeds from permit sales for a project to be viable. This generally makes all but large or very large JI/CDM projects non-viable. To end, no comparative analysis have been made of in-house measures and buying of emission allowances at the EU market, but the latter would probably be associated with low transaction cost, at least in some years from now when the market has developed (cf. Fichtner *et al*., 2003; Michaelowa, 2003).

Looking more specifically into the transaction specific costs indicated by the Swedish companies, one item seems to be partly ignored in other studies of transaction costs related to Kyoto project mechanisms. As mentioned, none of the companies had enough knowledge of JI (and CDM), why they will have to invest initially quite an amount of time and money just to raise the internal competence. In addition, since they will largely have to work in new countries, they will also have to invest to find potential partners in the host country, both public and private partners. If the potential host countries are of little interest to the company from more general business perspectives, then the efforts to make contacts will be a large JI/CDM specific cost. These cost will, however, decrease of time, but they are high initially. Other transactions cost referred to by the companies are costs of developing baseline scenarios. However, these cost may not necessarily hit

the private investors, but governments. As mentioned by Michaelowa *et al.* (2003) as well as Fichtner *et al.* (2003), one should distinguish between governments and private investors when discussing who will bear the transaction costs. To some extent, companies in this study fear that they have to bear the costs that normally would be born by governments. Nevertheless, the transaction specific costs they will have to bear if they undertake a JI/CDM project are high.

4.2.4 Hierarchical solutions are more attractive than bilateral solutions

Drawing from the empirical study of Swedish companies' views on JI, in combination with results of other studies of transaction costs, I argue that corporate investment and participation in project-based Kyoto mechanisms is associated with high uncertainty, high transaction specific costs, and relatively high transaction density. With Williamsons typology of structural solutions to managing transactions with external actors (cf. Figure 1), this would imply that (Swedish) companies probably would choose a hierarchical solution with integration, or a third party solution, instead of a bilateral solution, in order to get sufficient emission allowances to meet a GHG emissions target. Put differently, employing a transaction cost theory perspective, this means that it would be more effective for a company to invest in measures to reduce emissions internally than investing and participating a JI/CDM-project, the latter which in its basic form is a bilateral solution. In all, this is the case no matter if the (total) production costs are higher for internal measures than JI/CDM measures. As mentioned initially, transaction cost theory accounts for something neglected in traditional economics—that people and organizations act with bounded rationality.

4.2.5 Third party solutions are more attractive than bilateral solutions

Dependent on the level of transaction density, it may also be more attractive to the company to look for a third party solution, which could be regarded as investing in a fund (cf. PCF) that in turn finance other actors to undertake the actual project. According to transaction cost theory, a hierarchical or third party solution in corporate strategy for climate change mitigation would always be preferable compared to a bilateral solution, given the present situation with high transaction specific costs related to JI/CDM. Some of the companies with high GHG emissions did also express that they would prefer investing in a fund to investing in a specific project.

4.2.6 Hierarchical solutions reduce uncertainties when long-term perspective is needed

A general problem with all options but the hierarchical solution is that investments today have little value in the future. Climate change management needs a long term view, and those companies that take climate change seriously and currently develop corporate climate strategies that will help them survive in the long run may want to reduce the uncertainty about future international climate policy regimes by undertaking all measures in-house. Corporate investments in most industries take a longer perspective than the reach of the current climate policy regime. In a short term perspective, focussing on the first and second trading period of EU ETS, it may be viable to buy emission allowances in the market if needed. However, climate strategists in large emitter companies would know that post-Kyoto climate policy regimes will require much more

radical emission reductions, also in highly developed countries, and postponing investments may be very expensive, especially if it is related to direct or indirect investment in increasing efficiency at competitors. Some of the largest CO_2 emitters included in my study have indicated, once the initial allocation of emission allowances for the first trading period of EU ETS was decided, that they will undertake all measures to reduce CO_2 emissions hierarchically. Reflecting upon such statements in light of discussions on JI and CDM, it should be repeated at the end that some of the companies participating in this study mentioned at the workshops that they would only invest and participate in JI projects if they could invest in their own facilities in other countries. This reasoning is based on the same logic that favours hierarchical solutions, but it refers to JI (and CDM). This would be a special case of JI/CDM since it is basically a hierarchical solution—the measure is taken in a facility owned and run by the company (but in another country), not just in 'any facility' that would make it a bilateral solution. This implies that perceptions of what is to be regarded as JI/CDM projects must be diversified. We may talk about bilateral as well as hierarchical JI/CDM projects. This may look trivial, but it can require changes of the existing institutions of JI/CDM. Analysing what changes, however, lies out of scope of this paper. Whether changes are eventually to be made is also dependent on the future need of private investment in Kyoto project mechanisms – you should not forget that the Kyoto mechanisms are principally designated for trading between countries, not between companies. Nevertheless, a major topic would be the potential of hierarchical JI/CDM projects to meet the criteria of additionality.[4]

5. CONCLUDING REMARKS

The overall aim of paper was to examine the 'likelihood' of companies with GHG emission targets in enrolling with the project based Kyoto mechanisms. The main question addressed qualitatively is: How attracted are companies to investing and participating in JI and/or CDM projects? To examine this question, the paper employed two different but complementary theoretical perspectives on organizational behaviour, and empirical evidence from a study of Swedish companies' views on JI.

Despite a limited empirical material, focussing particularly the situation in Sweden, I conclude that the Kyoto project mechanisms, soon linked to the EU ETS through the entry into force of the 'linking directive', would hardly be the first choice solution in a corporate strategy for climate change mitigation, focussing on reducing GHG emissions. The institutional perspective revealed that participation in JI/CDM would not guarantee or increase the legitimacy in the organizational field needed by companies to get necessary support. Accordingly, they show little interest in undertaking JI/CDM projects. The transaction cost theoretical perspective indicated that bilateral solutions such as traditional JI/CDM-projects are less attractive than other solutions for companies that currently emit more greenhouse gases than is covered by initial allocations of emission allowances. However, the corporate interest for participation in JI/CDM may

[4] For a project to be approved as JI/CDM, it must add extra emission reductions than what would be expetcted in a baseline scenario taking into account all other requirements (regulations etc.) to reduce emissions.

increase if the JI/CDM regulative framework allows corporate investment in own facilities in other countries, resulting in 'hierarchical' JI/CDM-projects (in comparison to the traditional 'bilateral' JI/CDM-projects). This indicates that multinational corporations, particularly those with facilities in developing countries and economies in transition, would be more likely to participate in JI/CDM projects than companies operating in one or few (industrialised) countries only. According to Point Carbon (J. Buen, pers. comm.), Japanese multinationals are currently the most active private actors in the JI and CDM markets. Third party solutions, e.g. through investment funds where the companies does not really participate in the project, may also increase the private investments in international climate change mitigation projects.

As a consequence, it is asserted unlikely that emission credits (ERUs or CERs) eventually entering the European carbon market are gained to a large extent from projects undertaken by companies obliged to take part in EU ETS. There are few multinational companies in the EU ETS that operate in countries suitable as host countries to JI/CDM projects. The entering of ERUs/CERs in EU ETS would rather depend on successful set-up and operation of carbon funds. To what extent this will influence the effectiveness of the 'linking directive' is too early to conclude upon.

REFERENCES

Andersen, MS. & Liefferink, D. (Eds.) (1997) *European Environmental Policy: The pioneers*(Manchester, Manchester University Press).

Brunsson, N. (2002) *The Organization of Hypocrisy: Talk, decisions and actions in organizations*, 2nd ed. (Olso, Abstrakt).

CEC (2003) *Extended impact assessment on the Directive of the European Parliament and the Council amending Directive establishing a scheme for greenhouse gas emission allowance trading withing the Community, in respect of the Kyoto Protocol's project based mechanisms*. Commission staff working paper, SEC(2003)785 (Brussels, Commission of the European Communities).

Criqui, P. & Kitous, A. (2003) *Impacts of linking JI and CDM credits to the European emission allowance trading scheme*. KPI Technical report. KPI service contract No B4-3040/2001/330760/MAR/E1 for DG Environment. CNRS-IEPE & ENERDTA S.A., France.

Czarniawska-Joerges, B. (1992) *Styrningens paradoxer: Scener ur den offentliga verksamheten* (Stockholm, Norstedts Juridik).

DiMaggio, PJ. & Powell, WW. (1991) Introduction, in: WW. Powell & PJ. DiMaggio (Eds.) *The New Institutionalism in Organizational Analysis* (Chicago, The University of Chicago Press).

Dobers, P. (1997) *Organising Strategies of Environmental Control: Towards a Decentralisation of the Swedish Environmental Control Repertoire* (Stockholm, Nerenius & Santérus).

Engels, A. (2001) Company behavior and market creation for emission rights trading in the US, the UK, the Netherlands and Germany: Early evidence and future research perspectives, paper presented to the Scandinavian Consortium for Organizational Research (Scancor), Stanford University, Palo Alto, CA, 12 March 2001.

Fichtner, W., Graehl, S. & Rentz, O. (2003) The impact of private investor's transaction costs on the cost-effectiveness of project-based Kyoto mechanisms, *Climate Policy*, **3**(3), 249-259.

Goulder, LH. & Nadreau, BM. (2002) International approaches to reducing greenhouse gas emissions, in: S.H. Schneider, A. Rosencranz & J.O. Niles (Eds.) *Climate Change Policy*, pp. 115-149 (Washington DC, Island Press).

Jackson, T. (1995) Joint implementation and cost-effectiveness under the Framework Convention on Climate Change, *Energy Policy*, **23**(2), 117-138.

Jackson, T., Begg, K. & Parkinson, S. (2001) *Flexibility in Climate Policy: Making the Kyoto mechanisms work* (London, Earthscan).

Janssen, J. (2003) Kyoto flexible mechanisms: opportunities and barriers for industry and financial institutions, in: C. Carraro & C. Egenhofer (Eds.) *Firms, Governments and Climate Policy*, pp. 161-221 (Cheltenham, Edward Elgar).

von Malmborg, F., Borgström, T., Dethlefsen, U. & Kling, Å. (2002) *Business Perspectives on 'Joint Implementation': A study of Swedish company participation in joint implementation under the Kyoto Protocol*, ER24:2002 (Eskilstuna, Swedish Energy Agency); in Swedish.

von Malmborg, F. & Strachan, PA. (2005) Climate policy, ecological modernization and the UK emissions trading scheme, *European Environment*, accepted.

Meyer, JW. & Rowan, B. (1977) Institutionalised organizations: Formal structure as myth and ceremony, *American Journal of Sociology*, **83**, 340-363.

Meyer, JW. & Scott, WR. (Eds.) (1992) *Organization and Environment*, 2nd updated version (Newbury Park, Sage).

Michaelowa, A., Stronzik, M., Eckermann, F. & Hunt, A. (2003) Transaction costs of the Kyoto Mechanisms, *Climate Policy*, **3**(3), 261-278.

Morgan, DL. (1997) *Focus Groups as Qualitative Research* (Thousand Oaks, Sage).

Nordhaus, W.D. (Ed.) (1998) *Economics and Policy Issues in Climate Change* (Washington DC, Resources for the Future).

Parsons, T. (1956) Suggestions for a sociological approach to a theory of organizations, *Administrative Science Quarterly*, **1**, 63-85.

Paulsson, F. & von Malmborg, F. (2004) Carbon dioxide emissions trading, or not? An institutional analysis of company behaviour in Sweden, *Corporate Social Responsibility and Environmental Management*, **11**(4), in press.

Perrow, C. (1986) *Complex Organizations: A critical essay* (Glenview, Scott & Foresman).

Schwartz, B. (1997) *Det miljöanpassade företaget: Strategiska uppträdanden på den institutionella scenen* (Stockholm, Nerenius & Santérus).

Scott, WR. (1992) Introduction: From technology to environment, in: JW. Meyer & WR. Scott (Eds.) *Organization and Environment*, 2nd updated version (Newbury Park, Sage).

Scott, WR. (2001) *Institutions and Organizations*, 2nd ed. (Thousand Oaks, Sage).

Selznick, P. (1957) *Leadership in Administration. A sociological interpretation* (Berkeley, University of California Press).

Skea, J. (1998) Role of emissions trading in implementing the UN Climate Change Convention, *Environment and Pollution*, **10**(3-4), 454-461

Sorrell, S. & Skea, J. (Eds.) (1999) *Pollution for Sale: Emissions trading and joint implementation* (Cheltenham, Edward Elgar).

Tietenberg, TH. (1985) *Emissions Trading: An exercise in reforming pollution policy* (Washington DC, Resources for the Future).

WBCSD (2000) *Clean Development Mechanism: Exploring for solutions through learning-by-doing* (Geneva, World Business Council for Sustainable Development).

Williamson, OE. (1975) *Markets and Hierarchy: Analysis and antitrust implications* (New York, Free Press).

Williamson, OE. (1981) The economics of organization: The transaction cost approach, *American Sociological Review*, **57**, 548-577.

Williamson, OE. (1990) The firm as a nexus of treaties: An introduction, in: M. Aoki, B. Gustafsson & OE. Williamson (Eds.) *The Firm as a Nexus of Treaties* (London, Sage).