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## ENERGY MARKETS, OIL COMPANIES AND CLIMATE CHANGE ISSUES

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### Introduction

The effects of global climate change affect every country, but not all are responsible in the same way of its causes. The response, nonetheless, should be global, involving as many countries as possible, but taking into account their development degrees and their priorities and needs. Recognising that no individual nation can effectively address a problem of this scope, governments within the UNFCCC have decided to address this challenge collectively, fostering collective initiatives to control the enhanced greenhouse effect, particularly emissions of CO<sub>2</sub> from fossil fuel combustion.

Indeed, the problem is very different for the less favored countries with enormous needs as compared to those who have reached high development levels. The latter have recently undergone important changes in economic structure, technology and energy efficiency that make them relatively cleaner countries. However, because of historic reasons they have contributed to the current environmental problems; so they bear specific responsibilities. It is not possible to adopt one common standard.

In countries like Mexico, for which international commitments haven't been set, the need to take on international commitments, not yet included in the UNFCCC, is discussed. International political pressure for such commitments will surely occur considering Mexico's growing involvement in the productive and financial globalization. In the American continent the most rapid growth in carbon emissions between 1970 and 1997 was in Mexico (235%) followed by Brazil (220%) and Argentina (147%)<sup>1</sup>.

On what basis can cooperation against global warming be implemented? Which role can international or local actors play, taking into consideration their influence on the global environment? How can international institutions influence individual choices in order to make international cooperation less problematic? How to make an objective differentiation and different countries' efforts compatible with the search for equity considering relative development degrees and historic responsibilities? Those are some of the questions frequently posed in the scientific literature and in international meetings.

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<sup>1</sup> Cf. DOE [1999b]

True, global environment protection has been institutionalized step by step through the establishment of an international regime<sup>2</sup> which began to take form since the awareness of the impact of global warming and climate change over natural systems and the humanity increased. The Rio de Janeiro conference in 1992 and the Kyoto protocol have been important steps towards that institutionalization, but the path ahead is still long and the enforcement difficulties abundant.

Last years' events show that barriers exist to fully integrate the DES (Development, Equity, Sustainability) and climate change issues into the sustainable development agenda, but they show opportunities as well. Sorting out opportunities from challenges is indispensable for the advancement of dialogue, negotiations and international cooperation. One of the fields where there is no consensus is in the emphasis that environmental policies must have: command and control measures or more flexible instruments which give more options and responsibilities to economic agents. There is a recent shift, indeed, towards giving a more important place to market instruments and agent decisions in order to reach environmental objectives and implement climate change policies. This is the case of the Kyoto Protocol's international trading system, which has been proposed as a key element of flexibility, but raises many doubts and criticism, including its relation with equity issues. The purpose of this paper is to put this shift to market oriented policies and the role of some important agents as the international oil companies in a broader perspective.

It is important to develop a deeper inquiry in this direction, not only for theoretical or analytical reasons. In the international scene the debate on regulatory and control measures as opposed to market oriented instruments is also a matter of confrontation and possible conflicts. Europeans, for example, are afraid that some countries as the USA give priority to international emissions trading leaving aside efforts to lower emissions in its own territory. They prefer, generally speaking, national restricting measures, as taxes or norms, in order to influence individual behaviour and firms systems of production. It is true that the Kyoto Protocol itself states that "the acquisition of emission reduction units is a complement of measures taken at the national level", but the USA does not accept this way of thinking and insists that markets are the main instrument the international community has to put it in place immediately, eventually inspired in its successful sulphur emissions trading practice.

One point that does not seem to be fully understood is that the organisation of an international market needs the intervention of states and multiple actors and complementary measures at different levels. Markets are not a pure economic construction, but predominantly a social and institutional construction. Besides, even if an international emissions market is put in place in the first decade of the 21st century, it will face many problems because it will only apply in industrial and energy sectors, while transportation is the source of emissions that grows more rapidly. Flexibility mechanisms will need complementary efforts to face this important problem, perhaps of a regulatory nature: however, what would be the reaction of the main international actors in this field such as the international oil companies to increased regulatory measures?

## **1- Towards a framework to take into account agents and present realities of the global economy.**

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<sup>2</sup> A recent definition of international regimes has been proposed by O.R. Young et al [1995]: Social institutions formed by a group of principles, norms, rules, procedures and programs which govern interactions between agents on a specific field of international relations.

Presently there is no explicit structure of "international governance", but different trends indicate the world is heading toward the establishment of an international order conformed mostly by powerful countries and by the main agents in the economy.

Nations exist with their different institutions, power and interests, as shown in the case of the opposition of the American Senate to the ratification of the Kyoto Protocol, and also in the positions of other countries such as the members of OPEC or economies in transition. Certain developed countries advance arguments about their particular situation, such as France insisting on the fact that its energy base is mostly "clean as far as the greenhouse effect is concerned", and that during the 80s the country has lowered its emissions by 26.5% (but it does not indicate with the same insistency the place nuclear energy takes in its energy production, and the associated environmental and safety problems). Also developing countries (although their positions vary according to their current level of emissions, their dependency on carbon fuels, the energy contents of their exports, etc.) oppose to limitation or reduction agreements, pointing at their huge needs for development and the historic responsibility of industrialized countries regarding the emissions produced by their development and industrialization and their effects on the environment and the climate.

The USA case is a very interesting one, "a nation whose economic strenght relies on fossil fuels". Will the "business as usual environment" continue in the coming decades? That is an environment where "there are no major policy shifts, no new energy-related legislation and no crisis to significantly alter the statu quo", as the USA Fossil Energy Strategic Plan puts it [DOE, 1999 a; p 2, 3) ]. If we look at past trends, prospects for this country are not encouraging: energy consumption per capita was aproximately the same in 1998 than in 1970, that is before the oil shocks. In this same period carbon emissions increased near 40%: the USA produced more carbon emissions than all other countries of the American continent combined, and is responsible for 85% of North America's (conformed by USA, Canada and Mexico) carbon emissions, with only 4% of the world's population. The reference case in the Energy Information Administration (EIA) 1998 Annual Energy Outlook presents a scenario where energy prices in the year 2020 are largely unchanged; it does not assume any incentives to reduce carbon emissions and reflects an optimistic view of the USA's natural gas and world oil supplies. It is not surprising to find that, in this scenario, the fossil fuels share of the US market increases from 85% in 1995 to 90% in 2020. With total energy consumption increasing by over 30% during this period, energy related CO<sub>2</sub> emissions increase nearly 39%. Obviously, compliance with environmental regulation will become more difficult if energy prices remain moderate and fossil fuel demand increases as anticipated in these projections.

### *1.1. THE INTERNATIONAL POLITICAL ECONOMY (IPE) AND THE BUILDING OF AN INTERNATIONAL FRAMEWORK*

Regarding scenarios as the one described above and recent initiatives and proposals, usually one tends to give priority to the responsibility of governments to address the associated problems. However, if governments agree on objectives, those are often to be implemented by private agents. Although the Kyoto Protocol makes government accountable for national emission levels, cutbacks will have to be achieved by industries and mostly private actors.

As a consequence it is important to define a framework to take into account new realities, agents and phenomena belonging to the current global economy. Tentatively we'll make use of the "International Political Economy" approach, one of whose major exponents was Susan Strange (1923-1998). This autor did not specifically address the energy matters, since the four basic

structures of the world system or global political economy she proposes -which conform the sources of structural power- are: control over security, control over production, control over credit and control over knowledge, beliefs and ideas<sup>3</sup>.

For her, topics such as commerce or energy are secondary structures which are determined by the four basic structures of security, production, financial backing and knowledge. It is possible, however to inspire oneself by her work to conduct a specific analysis of the energetic or environmental matters<sup>4</sup>.

Since the beginning of that school of thought in the 60's, the growing importance of non-state agents received particular interest and, as a consequence of it, the changes on what national states could control, both in and outside their boundaries. Precisely one of the hypothesis which Susan Strange began to work on very early in her works is that "the territorial boundaries of states no longer coincide with the extents of the limits of political authority over economy and society", as she reminded in one of her latest books<sup>5</sup>.

The analysis of international relations, understood only as relations between states whose action evolves in terms of power, has been revised deeply by the international political economy analysis. New merely economic dynamics and strategies, as well as new actors, shape the global economy and complement or challenge the action of states. The term "political" cannot be longer applied only to state policies, but also to the activities, strategies and policies carried out by other actors in the world system whose power has to be seriously taken into account. Those authorities different from the state, particularly private enterprises in finance, industry and commerce, have contributed more to the world market integration than governmental actions and can now be considered to be more powerful than the state to which the political authority over society and the economy supposedly belongs. In that sense, without denying the content of one of her most important books (*States and Markets*), Susan Strange might have preferred another title for it: "Markets and authorities", as she put it<sup>6</sup>.

In Susan Strange analysis, an important aspect is the shift from "relational" power to "structural" power, which is to say, the capability, unequally distributed to influence the composition of the world economy and, as a consequence, the results of international competition. With this, a new topic pervaded the analysis: the role and relative influence of states and markets over the "governance" of the world economy. To Susan Strange, the direction of the balance in the world system is clear:

The main outcome of this structural power has been a shift in the balance of power from states to markets. The United States, using its structural power to lock European, Latin American and now Asian and African economies into an open world market economy, certainly intended to reap benefits and new opportunities for American business. What its policymakers did not fully intend [...] was the enhanced power that this would give to markets over governments, including their own<sup>7</sup>.

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<sup>3</sup> See Susan Strange [1988], chapter 2. Nevertheless, the title of Chapter 9 of this book is: **Energy, the fifth factor**.

<sup>4</sup> I will use here contents from my article: Angel de la Vega Navarro [1998].

<sup>5</sup> Susan Strange [1996; p. ix].

<sup>6</sup> "Markets and Authorities would have been a more accurate title", *Ibidem*, p. X.

<sup>7</sup> *Ibidem*, p.29.

Doubtlessly, during the 80's and the first half of the 90's explicit policies modified in favor of markets, the "**mix between authority and market**", by proposing the generalized adoption of markets as mechanisms of coordination, sometimes even having precedence over states. From that point of view, big enterprises would be a primary element of importance, which implies a radical change for the traditional analysis of political power and of the role of the state.

Sometimes the extension of a generalized regulation by markets, has happened against the will of many states and even despite international organizations which support a more administered concept of international regulation. The United States position has been, in many occasions, precisely to take from states and international organizations most of regulatory prerogatives and to favor market actions. Given that evolution, the findings of Susan Strange are extremely useful, both regarding the dominant superpower action and the absence of a democratic accountability of markets.

## *1.2. THE EXTENSION OF A REGULATION BY MARKETS IN INTERNATIONAL MATTERS AS THE CC ISSUES*

As different research works have put in evidence, globalization is a process largely private sector driven:

It represents, therefore, a shift in the locus of decision-making not only from the nation-state to transnational actors but also from national governments to the private sector. For this reason, economic liberalization and globalization have often gone hand in hand...There is, however, one factor pulling in the opposite direction. As the global system becomes more integrated, there is a demand for international public goods that neither markets nor nation-states will provide...There are currently global rules and institutions, but they are not strong<sup>8</sup>.

This demand for international public goods has grown in recent years. Even well-respected international organizations have criticised the role of markets on issues such as the ones we are concerned herewith:

Markets have fallen short of accounting for greenhouse gas emissions [...] To date, governments have not intervened adequately to compensate for such market shortcomings. In many ways, climate change represent the ultimate 'tragedy of the commons'<sup>9</sup>.

In spite of this, there is the idea that the market mechanism is the best way to find the cheapest solution for cutting pollution in the world economy. Sceptic organizations as the American Petroleum Institute, that considers climate change a "highly uncertain problem", when it comes to envisage the need of some actions it clearly shows its preferences: "Should we turn to international bureaucracies and global mandates or should we rely on the energy, creativity, and flexibility of the private sector, the free market system, and public-private collaboration"?'<sup>10</sup>

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<sup>8</sup> Vincent Cable [1995]

<sup>9</sup> IEA [1999; p.7].

<sup>10</sup> "API's position": <http://www.api.org/globalclimate/>

One instrument approved in Kyoto for limiting greenhouse gas emissions in order to curb global climate change was an international system for emission trading. But the rules for such commerce still have to be put in place. Parties may offset emissions increases in energy related CO<sub>2</sub> through decreases in emissions of methane or nitrous oxides. They may also take credit for reductions beyond their borders through emissions trading, joint implementation and the clean development mechanism (CDM).

Crude oil, the biggest source of carbon dioxide emissions represents a physical commodity, while greenhouse gases like carbon dioxide are invisible and destined now to be traded under an international regime. Nevertheless, carbon dioxide and other greenhouse gases will not become a true commodity until national or international legislation on emission trading is in place.

Some international financial institutions are defining their strategies taking into account these perspectives as the actual future trends. World Bank, for instance, will develop an increasing role in:

*Using international market mechanisms to reduce the cost of carbon abatement.* The establishment of an international market for carbon emission offsets or credits should cut the cost of dealing with climate change, and has been agreed in principle at the recent Kyoto conference on climate change. The WBG will help to develop this market<sup>11</sup>.

Precisely, The World Bank's Activities Implemented Jointly (AIJ) Program has been used to demonstrate the market-based "joint implementation" mechanism, affirming the potential of a carbon offsets market. It is assumed that "an efficient and equitable market in carbon emissions could mobilize substantial private sector resources, increase the development and the spread of more energy-efficient technology to World Bank client countries, and enhance the energy and environment portfolio of the World Bank itself" (*ibidem*).

## **2 - Energy, GHG emissions and the role of international oil companies**

Basically, though not exclusively, the global climate change issue has to do with energy utilization in economic activities (share of different sources, energy intensity, energy implications of different models or development patterns, etc.). Energy is at the heart of the Kyoto program because energy is the main source of greenhouse gases (GHG) accounting for about 85% of GHG emissions in developed countries.

Since energy contributes decisively to the problem, energy will have to bear the main responsibility for the emission reduction burden. Specialists agree that the main efforts have to be directed toward controlling fossil fuels emissions, but nobody has yet discovered the best way to break the link between economic growth and increasing energy consumption, especially in some rapidly growing developing countries. However, different positions concur to evidence the need for a broad economic shift away from relatively energy-intensive industries or activities.

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<sup>11</sup> The World Bank Group [1999].

The International Energy Agency (IEA) energy forecasts agree that fossil fuels will be a dominant energy source for the foreseeable future and show significant increases in energy related CO<sub>2</sub> emissions. Without the adoption of new policies, emissions could rise 30 percent above the 1990 levels. Policymakers consequently will have to direct their efforts toward controlling fossil fuels emissions. As stated above a business-as-usual world will continue to be powered by fossil fuels which, according to the IEA, are expected to provide 95 percent of additional global energy demands by 2020, with oil continuing to dominate world energy consumption.

The study of energy matters entails a necessary international dimension traditionally crossed by political and geopolitical implications, beyond building a mere economic transactions field. That is why, in many aspects the energy industries have always had specific characteristics, especially the oil industry. Susan Strange addressed some of these characteristics when she said that governments, companies and markets are the three main agents on the international oil business:

But in oil, the most important authority has often been not the state, as represented by the national government, but the oil company or a group of oil companies effectively managing the market<sup>12</sup>.

Today, doubtlessly multinational companies occupy again the center of the international energy scene. There has also been a substitution of administered regulations by market mechanisms in the determination of oil prices and generally an assertion of the role of the market as a mean of dominant regulation in the oil scene.

Concerning the environment, some groups denounce the world's major energy companies for contributing to global warming with their huge carbon emissions. A report issued last year looked at the 1997 production of the world's top 122 producers of coal, oil and natural gas, finding that 80 percent of the fossil carbon released into the atmosphere as man-made carbon dioxide is produced by these companies<sup>13</sup>. This report studies in detail how national oil companies like Saudi Aramco or National Iranian Oil Co. and corporate giants like Exxon Corp create carbon pollution from fuel production. Unlike previous analyses of global warming that have largely focused on the issue of fossil fuel consumption, this report stresses the role of the producers of carbon-based fuels, putting in evidence the polluting behavior of companies like Shell, Exxon, BP Amoco, ARCO and Chevron and their responsibility in reducing global warming pollution.

In that context and because of its importance it is necessary to become aware of the positions expressed through companies as important as Exxon. In a recently published article<sup>14</sup>, an important executive from that company expressed the following:

We should reject premature international initiatives like the Kyoto protocol, which have the potential to cause economic harm for most nations, severely impacting some, while doing very little to influence the climate.

Exxon opposes climate change advancing the following arguments:

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<sup>12</sup> Susan Strange [1998; p.194].

<sup>13</sup> Report by the Natural Resources Deense Council, the Union of Concerned Scientists and the U.S. Public Interest Research Group (PIRG), July 1999.

<sup>14</sup> Brian P. Flannery [1999].

- The science is uncertain<sup>15</sup>:
  - . Earth climate is affected by many complex variables, such as sunlight, clouds, orbital variations, ocean circulation, etc. The extreme complexity of the huge thermodynamic machine that the planet represents does not comply easily with models that still result too simple and present many flaws.
  - . Throughout the last century there has been a slight warming trend in surface temperatures and concentration of CO<sub>2</sub> has been increasing in the atmosphere. Concern has arisen that this accumulation will lead to global warming and climate change with negative consequences for people and ecosystems. But we do not know definitely if the use of fossil fuels is contributing to this warming. Scientific observations still do not confirm that human activities and anthropogenic emissions have led to any global warming.
  - . In the outlines concerning global warming and climate change, politician's positions have prevailed over the scientists'. In 1995 a Special United Nations Panel issued a report where scientists were careful not to make any firm conclusion about relating burning fossil fuels and global warming. Nevertheless the executive summary was heavily influenced by government officials and it stated that: "The balance of evidence suggests a discernible human influence on climate".
- It entails large near-term costs:
  - . So, there is uncertainty related to the global warming and climate change issues. The precautionary principle is often invoked in situations filled with this level of uncertainty, but this principle provides no guidance on what actions to take in response to uncertain risk. Besides, precautionary measures come with very high, near-term economic and social costs.
  - . To reach the targets established in Kyoto many countries would have to stop all driving or close all electric power plants or shut down every industry. Besides, reduction in fossil fuels use would mean increases in the price of gasoline and other fuels, significantly higher fossil fuel taxes, rationing, etc.
- From this point of view, the conclusion is clear: "Kyoto restrictions would lower demand for goods in industrialized nations, decreasing the imports from most developing countries. That could significantly disrupt global trade and economic growth".

As in other fields, it is not possible to generalize positions and attitudes of oil companies about global climate change. Some companies have a strategic vision on their future investments which include alternative energies to hydrocarbons and even research on global warming and climate change. In this direction other voices are heard, coming from the oil industry itself, assuming a possible scenario under which "technology and environmental concerns become a tremendous force for change, and more quickly than generally assumed. We will see multiple ways to power cars: hybrids, advanced batteries, fuel cells, even cars that run on pure hydrogen"<sup>16</sup>. There also exist

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<sup>15</sup> In this same direction, the API position is that if a consensus among scientists exists, it is expressed in a petition drafted by the Oregon Institute of Science and Medicine in February 1998: "There is no convincing scientific evidence that human release of carbon dioxide, methane, or other greenhouse gases is causing or will, in the foreseeable future, cause catastrophic heating of the earth's atmosphere and disruption of the earth's climate". See "API's position": <http://www.api.org/globalclimate/>

<sup>16</sup> Peter Bijur, Texaco CEO in an address to the 17<sup>th</sup> Congress of the World Energy Council (Houston, September 14, 1998).

energy companies which see the Kyoto protocol as a mean to commercial opportunities and of new investments<sup>17</sup>.

## **Final Considerations**

Either to take advantage, to denounce or to get rid of them, it is fundamental to understand the new ways and procedures of economic domination and the strategies taken by the main agents which are expressed in today's world economy.

In the present world economy where both the nature and the ways to exert power have changed, markets seem to prevail, especially the financial ones. The balance state-market is changing, according to Susan Strange, in favor of the second and this fact constitutes a fundamental change with serious implications to the world economy and democracy.

Certain states and even international organizations look now for margins of maneuver, for instance to define the rules on which market activities take place. On the international context, however, some states are more powerful than others -wether on the relational or structural sense- and can impose rules to make those markets work for their own benefit. On the other hand, big firms can influence the objectives agreed by the international community, as international oil companies manage to do. What is clear is that it is not possible to ignore those important actors in the international energy scene. It is important to track and analyse the evolution of their positions: between them there are some which try to participate in, rather than fight, technological breakthroughs that might make oil less important in the future. More than any other factor, the energy business of the coming years will be shaped by the interaction of environmental regulation, technological advancement and the investment patterns of energy companies. Some actors, such as some corporations in the international oil industry have not only recognized this fact, but also have started to direct their long-term investment strategies so as to survive in a future environment shaped by these new forces, trends and phenomena.

Concerning the oil exporting countries, they must accept the fact that climate change issues will influence energy policy and actors strategies in consuming countries. Rather than remain opposed or to be left aside in the process, they have to become active and constructive partners, join the debate, try to influence the formulation of policies and of worldwide implementation of climate change initiatives.

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<sup>17</sup> BP Amoco, for example, has launched an in-house solution for trading carbon dioxide emissions. Twelve of the group's 126 business areas, with roughly 10% of its carbon dioxide emissions, are involved in this pilot project. The aim is to extend the system to the whole organization by mid-2000

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