Climate Change : An Area of 'Common Concern'[1]

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Introduction

Concern over the impacts of human activity on the global climate can be traced at least back to the 1890s, when the Swedish Nobel Laureate for Chemistry, Svante Arrhenius drew attention to the possibility that human based emissions of certain gases could change the composition of the Earth's atmosphere and thus affect climate.

Plato recognised the need for strong and effective laws in the maintenance of a sustainable society in his work, *The Republic*. The philosopher, Hobbs stated in *Levanthan* (1651) that men, unless they are subject to sovereign laws, will act to the detriment of one another.

So can the law protect the atmosphere?

Part of the problem was the lack of a legal status for the atmosphere. However, after a short interval of 100 years since Arrhenius first identified the scientific problem, the nations of the world convened to agree the United Nations Framework Convention on Climate Change (UNFCCC). This conferred upon the atmosphere the status of 'common concern' to indicate the common legal interest of all states in protecting the global atmosphere.

Setting the scene of environmental regulation in the United Kingdom

Before we consider international environmental law and climate change we need to consider domestic legislation, as it is within the sovereign states that international law is put into practice. This reflects the environmentalists' maxim, 'think globally act locally'.

United Kingdom legislative control over the impacts of mans' activity on the environment is not new. As long ago as the reign of Charles II the main concern was the production of smoke from the burning of 'sea

[1] This Article is based on a Professorial Lecture Given at Southampton Institute on 27 June 2002.

coal'.[2] Almost all areas of trade and industry were subject to very detailed legislative controls at that time, although some were governed by 'self-regulation' in the form of guilds, who regulated both supply and methods of production.[3] However, the measures implemented were mostly ineffective because then, as now, the specifying of legal duties and standards without providing any appropriate enforcement merely indicated good intentions but were of little practical effect.

The next stage was prompted by the Industrial Revolution with the urbanisation of society and its profound effects on the environment. Local industrialists used the Adam Smith model to maximise their economic benefit, but this was to the detriment of the local environment with the operation of 'Gresham's Law' that is, the bad drives out the good. Those industrialists who were concerned for either the health of their employees or the local environment faced higher costs than their competitors. The result was the need for increasingly comprehensive statutory controls on the discharge of pollutants into various receiving media. The objectives of the legislation during this period were limited to the nature and quantity of those pollutants and their effects on the immediate surroundings and public health.[4] For some particularly noxious substances, an expert inspectorate enforced a set of performance standards.[5]The third stage is marked by the expansion away from the public health issues to the broader concern for the environment, and the impact of pollutants on the biosphere as a whole. As within the USA, the beginning of this modern era of environmental policy and legislation in the UK is not easily identified, but probably started about the same time in the early seventies. Not only were the public becoming more aware of the vulnerability of the planet to mans' activities but also there was the coercive influence of the European Community on the Member State governments. While response to public opinion would doubtless have eventually produced a similar result, the influence of the Community initiatives cannot be underestimated. In addition, given that the problem of the greenhouse effect and climate change is essentially a global one, nor can the initiatives at international level.

[2] John Evelyn, *Fumifugium or The Smoke of London Dissipated,* 1661.

[3] AI Ogus, Regulatory Law: Some Lessons from the Past, 1992, *12 Legal Stud 1.*

[4] C Brokington, *Public Health in the Nineteenth Century,* 1965.

[5] *Alkali and Works Regulation Act 1906.*

The international perspective

International environmental law challenges many fundamental concepts of traditional international law. It puts new limits on State sovereignty; it intrudes into the domestic jurisdiction and territorial integrity of States. It creates greater responsibilities for States, and it involves many non-state entities in the process of international law making. The global nature of environmental issues means that national action by itself, while important, may be insufficient, and that significant international co-operation is required.

International law regarding the environment is still developing, but already there are a number of treaties, which provide a framework for legal regulation. Nevertheless, there are tensions between economic development, environment and sovereignty, which challenge the ability of international law to protect the environment.

The interaction between international law and domestic law

The interaction between international law and national or domestic law demonstrates the struggle between State sovereignty and the international legal order. While the international legal order seeks to organise international society in accordance with the general interests of the international community, State sovereignty can be used to protect a State against the intervention of international law into its national legal system. However, as international law expands into areas such as human rights and the environment, there has been a reduction in the area of law, which can be considered to be governed solely by the national law of a State.

While the tension between these two systems is often explained by reference to monistic or dualistic theories,[6] the resolution of this struggle is usually determined by the constitution of each State,[7] and by the interpretation of the constitution and national laws by the national courts of each State. As a consequence, the application of international law within a national legal system will vary from State to State. Further, the lack of significant enforcement measures in international law has meant

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[6] See H Lauterpacht, *Oppenheim's International Law*, vol 1 (8th edn), pp 37-39.

[7] The constitution having been created by political acts.

that it is often through national courts that international law is enforced, and therefore national law can often determine the effectiveness of international legal decisions and the lawfulness of international actions. However, the monistic doctrine recognises the international responsibility of the State. It is a well-recognised rule that a State is internationally responsible for the decisions of its courts, even if given in conformity with the law of the State concerned, whenever that law happens to be contrary to International Law.

International law and the United Kingdom

It has already been stated that it is the constitution of a State, which determines the position of International law within the context of domestic law, but the United Kingdom does not have a written constitution. Instead its constitution is ascertained by an examination of such material as legislation, judicial decisions and political or Parliamentary conventions and practices. One of the fundamental principles of this unwritten constitution is that of 'Parliamentary Sovereignty'. This has been defined as meaning that no person or body is recognised by the law of England as having a right to override or set aside the legislation of Parliament. However, the relationship between the law of the United Kingdom and International law is said to vary between customary International law and treaty obligations.

As far as treaties are concerned the House of Lords stated in the case of *Cook v Sprigg* in 1899 that 'municipal courts have not and cannot have the competence to adjudicate upon or to enforce the rights arising out of transactions entered into by independent sovereign states between themselves on the plane of international law'. This was confirmed a hundred years later in the *International Tin Council Case in 1990,*[8] when the court held that

'the Government may negotiate, conclude, construe, observe, breach, repudiate or terminate a treaty. Parliament may alter laws of the United Kingdom, but the courts must enforce those laws; judges have no power to grant specific performance of a treaty or to award damages against a sovereign state for breach of a treaty or to invent laws or

[8] *JH Raynor (Mincing Lane) v Department of Trade and Industry* [1990] 2AC 418.

misconstrue legislation in order to enforce a treaty.... Public international law cannot alter the meaning and effect of United Kingdom legislation...' [Lord Templeman].

On the domestic plane, the power of the Crown to conclude treaties with other sovereign States is an exercise of the Royal Prerogative, the validity of which cannot be challenged in municipal law.[9] However, the courts are unlikely to exclude any area of law from their jurisdiction lightly, and Lord Oliver went on to say in the *Blackburn* case that:

'This proposition did not involve as a corollary that the court must never look at or construe a treaty. Where, for instance, a treaty is directly incorporated into English law by Act of the legislature, its terms become subject to the interpretative jurisdiction of the court in the same way as any other Act of the legislature.'

In the case of *Fothergill v Monarch Airlines Ltd*,[10] it was stated that:

'Where a statute is enacted in order to give effect to the United Kingdom's obligations under a treaty, the terms of the treaty may have to be considered and, if necessary, construed in order to resolve any ambiguity or obscurity as to the meaning or scope of the statute.'

It must be borne in mind that the conclusion of an international treaty and its terms are as much matters of fact as any other fact. That a treaty may be referred to where it is necessary to do so as part of the factual background against which a particular issue arises may seem a statement of the obvious; but it is necessary to stress that the purpose for which such reference can legitimately be made is purely an evidential one.

As already stated, in the United Kingdom the power to conclude treaties is an exercise of the Royal Prerogative, being part of the monarch's powers exercised by the executive. As Parliament is the only national institution of the United Kingdom which can make law, the courts have required treaties to be incorporated, or implemented, by legislation into United Kingdom law before they will give full effect to the treaties. However, the courts do refer to unincorporated treaties to resolve

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[9] *Blackburn v Attorney-General* [1971] 1 WLR 1037.

[10] [1981] AC 251.

ambiguities in legislation, or even in common law in order to interpret national law in conformity with international law, so far as is possible. In undertaking this task or interpretation, the national courts interpret the treaty in accordance with the rules of international law. In addition the common law of the United Kingdom has adopted the principle of 'incorporation' in regard to customary international law, by which that law automatically becomes part of the national law without need for legislative or judicial pronouncement.

As long ago as 1746 in the case of *Triquet v Bath*,[11] Lord Mansfield was of the clear opinion 'That the law of nations, in its full extent was part of the law of England...and that the law of nations was to be collected from the practice of different nations, and the authority of writers.' In the case of *West Rand Central Gold Mining Co. v The King*,[12] Lord Alverstone CJ stated:

'It is quite true that whatever has received the common consent of civilised nations must have received the assent of our country, and that to which we have assented along with other nations in general may properly be called international law, and as such will be acknowledged and applied by our municipal tribunals when legitimate occasion arises.'

Customary international law, therefore, is applied by the United Kingdom courts as part of the common law in circumstances where the relevant customary international law is sufficiently certain. However, as customary international law is part of the common law it can be overridden by unambiguous legislation, but it would be a brave government who concluded a treaty at international level only to introduce unambiguous domestic legislation to the contrary.

It is difficult to justify the different rules for the application of treaties and of customary international law in the United Kingdom. The distinction is based on the principle of Parliamentary sovereignty. Thus, it is argued, because the conclusion of treaties is an act of the executive, treaties cannot be applied directly into United Kingdom law, while customary international law is common law and can be overridden by legislation and so does not infringe Parliamentary sovereignty. However, the signing of treaties is a public act of the executive for which questions

[11] (1746) 3 Burr 1478; 97 ER 936, Court of Kings Bench.

[12] [1905] 2 KB 391, Kings Bench Division.

can be raised in Parliament and, in any event, all treaties are laid before Parliament for at least 21 days before they are ratified[13] and so are subject to Parliamentary debate. In contrast, customary international law is created by the practices of many States, including their treaty practice, for which actions by Parliament are rarely relevant. Therefore, Parliament has less influence on customary international law than on treaties. In addition, both types of international law can be overridden by contrary, unambiguous national legislation. As such, both treaties and customary international law should be treated in the same way by United Kingdom courts and applied directly into national law unless national law is expressly contrary.

The impact of Europe on the United Kingdom

By the European Communities Act 1972, the United Kingdom has incorporated the European Communities, now the European Union, treaties into its national law. More recently, the European Convention on Human Rights and Fundamental Freedoms was largely incorporated by the Human Rights Act 1998. By these actions it seems that considerable limitations on the United Kingdom's sovereignty have been created. Professor Nick Grief argues that since the European Convention on Human Rights is used by the European Court of Justice as an aid to construction of the Community Treaties, the 1972 Act requires British Courts to determine the meaning and effect of Community provisions in the light of the Convention.[14] This argument could equally be used with respect to international environmental conventions and the requirement on British Courts to determine the meaning and effect of Community provisions in the light of such conventions.

However, while the United Kingdom applies different approaches to the incorporation of international treaties and the incorporation of international customary law, many other member States include provisions within their written constitutions for the direct application of international law.

Other European States

[13] Under the 'Ponsonby Rule'.

[14] N Grief, 'The Domestic Impact of the European Convention on Human Rights as Mediated through European Community Law' [1991] PL 555, pp 566-7.

Article 25 of the Basic Law (Grundgesetz) of Germany states, 'The general rules of international law shall form part of federal law. They shall take precedence over the laws and create rights and duties directly for the inhabitants of the federal territory.'

However, the method of transposition of international law into domestic legislation in Germany consists of legislative authorisation to ratify a treaty, therefore its force in domestic law is secured by a special Act of Parliament. The effect and validity of a treaty is not, in such cases, considered to be derived from a provision in the Constitution itself, but in respect of it.

Alternatively, the constitution of some states admits the automatic incorporation of a treaty into domestic law once the treaty has been approved by the legislature and subsequently concluded. The French Constitution of 1958 gives treaties a greater force than domestic laws, although they remain subordinate to the Constitution.

Although state practice can be seen to reveal divergences, surprisingly, a fairly general pattern and degree of agreement can be detected. Thus in many instances the possibility of a conflict between domestic legal norms and a state's obligations on the international plane has led states to adapt their constitutional law or domestic practice by 'accommodating' international developments.

Commonwealth States and international law

Most commonwealth States inherited versions of the common law as developed in the United Kingdom. In addition, the majority have no constitutional provision dealing with the impact of international law on national legal systems. As a result, the national courts in the Commonwealth have generally adopted a similar approach to that employed in the United Kingdom.

The United States and international law

Even when there is a specific and unambiguous statement within a written constitution regarding international law the courts have difficulty in reconciling its overriding effect.

The Constitution of the United States 1787, Article VI, section 2

> This Constitution, and the Laws of the United States which shall be made in Pursuance thereof; and all Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any State to the Contrary notwithstanding.

Unfortunately, the United States Supreme Court has not been active in applying international law, notwithstanding the words contained in Article VI (2) above. It has also ignored international law to protect its government's self interest as demonstrated in *United States v Alvarez-Machain*[15] when the forcible abduction of a Mexican national from Mexico by US agents was allowed in contravention of a bilateral treaty.

It is apparent from this discussion that the courts require proof of the existence of customary international law, as exemplified by state practice, before they will apply it as common law. It, therefore, now falls to us to consider state practice with regard to the international treaties for the protection of the atmosphere.

Specific international obligations for the protection of the atmosphere

The *Vienna Convention for the Protection of the Ozone Layer 1985* aimed to reconcile the interests of several groups. These included developing countries, such as India, China, and Brazil, which were primarily concerned that restraints on the use of ozone-depleting substances might inhibit their industrial development, or that alternative technologies might not be available to them. The USA, on the other hand, had earlier acted unilaterally to reduce domestic production and consumption of CFCs and did not wish to remain at a disadvantage while others went on using them. The position of the USA, therefore, was strongly in favour of an international control regime. The EC represented the largest group of producers and was reluctant to commit itself to measures that might prove costly to implement. The resulting Convention

[15] 31 ILM (1992) 902.

is largely an empty framework, requiring further action by the parties. Nevertheless, it is an important precedent with wider significance in environmental law.

First, it is explicitly concerned with protection of the global environment, and defines adverse effects to mean: 'changes in the physical environment or biota, including changes in climate, which have significant deleterious effects on human health or on composition, resilience and productivity of natural and managed ecosystems, or on materials useful to mankind'.[16]

This definition both recognises the impact of ozone depletion on climate change, and adopts an ecosystem approach in terms which suggest that the natural environment has a significance independent of its immediate utility to man. Secondly, the Ozone Convention is one of the first to perceive the need for preventative action in advance of firm proof of actual harm.

The 1987 Montreal Protocol

The Montreal Protocol to the Ozone Convention represents a much more significant agreement than the Convention itself. It sets out firm targets for reducing and eventually eliminating consumption and production of a range of ozone-depleting substances. The USA was a strong supporter and referred to the need to err on the side of caution and to be aware of the wellbeing of future generations. Following scientific evidence that the standards adopted in 1987 would not be effective in reducing ozone depletion, additional substances were included by the amendments adopted in 1990 and 1992, and the timetable for complete elimination was revised and brought forward to 1996. It was the development of new technology and alternative substances, which made these changes possible, although in some cases these substitutes may still

[16] Article 1(2)

have ozone depleting potential, and others are greenhouse gases.

One measure of the Protocol's success is that by 1998, 165 parties had joined including the most developed: the EC, the USA, and Russia in addition to those rapidly developing including China, India and Brazil. Provided the Protocol is fully adhered to, global ozone losses and the Antarctic ozone hole should have recovered by around 2045. It is generally accepted that the Ozone Convention and the Montreal Protocol have provided one of the most sophisticated and effective models of international regulation and supervision for environmental purposes. This being largely due to the relatively straightforward task of *eliminating* ozone depleting substances through strict regulation of the producing industries, who rose to the challenge of replacement with less ozone depleting substances, and monitoring of the international trade in those substances.

The Framework Convention on Climate Change 1992

The intention of this Framework Convention was to attract universal participation and so was negotiated by consensus. However, the political, scientific, and economic complexity of tackling climate change presented the international community with a considerable challenge. What emerged was not a comprehensive 'law of the atmosphere', nor a fully formed and detailed regulatory regime, but a framework which established a process for reaching further agreement on policies and specific measures to deal with climate change.

The 1992 Convention differs significantly from the Ozone Convention in a number of respects. It specifies objectives and principles to guide implementation of the Convention and further development of related legal instruments. It introduces the concept of 'common but differentiated responsibility' and makes this the explicit basis for the different commitments of developed and developing state parties. While in addition the substances for control are produced by different methods, that is as waste emissions, and from different sources, that is numerous and varied. Lastly, the objective of the 1992 Convention is to '*stabilise*' greenhouse gas emissions by the 'reduction' of emissions rather than to 'prohibit them'.

The Kyoto Protocol 1997

At the first Conference of the Parties in Berlin during the spring of 1995, the Berlin Mandate was adopted. This committed the Parties to:

'Begin a process to ...take appropriate action for the period beyond 2000, including the strengthening of commitments, through the adoption of a protocol or other legal instrument.'

It was the Third Conference of the Parties to the UN Framework Convention on Climate Change, which was held in Kyoto, Japan, which finally produced an agreement. The Kyoto Protocol establishes a number of different commitments with four worthy of particular mention. These include emissions reduction; industrial country joint implementation; the clean development mechanism and emissions trading.

The specifics of the Protocols' emissions reduction plan require developed nations to reduce their contribution from a base level of 1990 by at least 5% by 2008-2012. The greenhouse gas reduction requirement covers six gases, and in particular carbon dioxide. In recognition that the developed countries share different responsibility for the existence of the current situation and possess varying levels of technological sophistication and are, therefore, able to remediate such, the overall emissions reduction target of 5% is differentiated among the states parties in the following way. The European Union was allocated a reduction of 8%; the U.S. 7%; Japan and Canada 6%; New Zealand and the Ukraine are simply required to stabilise emissions at 1990 levels. It is further provided that by the end of 2006, the parties to the Protocol must consider additional reductions beyond those provided for. This is an important provision, as any successful effort to reduce global warming will necessitate reductions of carbon dioxide well beyond those set forth in the Kyoto Protocol.

In respect of the concept of industrial country joint implementation (JI), the Protocol permits industrial countries to formally collaborate with each other to reach reduction targets. The idea is that such countries may acquire emission reduction credits from other joint implementation partners who cut their own emissions below the required level, or enhance

carbon sinks designed to take up greenhouse gases. However, joint action between collaborating countries would not be sufficient to meet the overall emission obligations without actually cutting back on such emissions. Individual state action to minimise the emission of harmful man-made gases is also essential.

The clean development mechanism (CDM), in a sense, stands in contrast to industrial country joint implementation through transfer of emission reduction credits. The CDM seeks to give industrial nations a credit for efforts they undertake in supporting and assisting underdeveloped countries to address the greenhouse gas emissions problem. This may well be an attractive option for those private sector industries, including the energy sector, which find it increasingly expensive to be in compliance with their own nation-state reduction obligations. By earning CDMs there will be a lower financial burden associated with reduction projects undertaken in developing countries. However, as with industrial nation joint implementation through the transfer of emission reduction credits, industrial nations are not permitted to claim credits for CDM projects in the developing world count for more than part of their individual reduction targets. In addition, in order to gain a credit, CDM projects must take place between 2000-2008.

Emission trading is the last of the Protocol's four main features. It is essential that emissions trading is not confused with industrial countries joint implementation. While the later centres on industrial nations formally collaborating through an international agreement that commits the parties involved to act jointly in reducing man-made carbon dioxide emissions, emission trading also permits industrial countries that are not collaborators in a joint implementation plan, to buy and sell emission credits between each other.

The Kyoto Protocol is not a negligible achievement, nor is it incapable of developing stronger and more universal terms. However, the real reduction in greenhouse gas emissions will depend on the willingness of the developed nations to ratify and implement the agreement, long-term trends for energy efficient economic growth and the success of deterring and remedying non-compliance.

The Kyoto Protocol cannot enter into force until at least fifty-five states ratify, including developed countries whose aggregate CO_2

emissions amount to at least 55% of the total. At present it only remains for the completion of the passage through the legislative process in Russia to ratify the Protocol for it to come into force. This is expected to be in the spring of 2003.

State practice

Having considered the position of international law with regard to domestic law, we now need to look to state practice.

North America

The USA

As we have identified the key player in any successful implementation of the Kyoto Protocol mechanisms is the USA. The US has already instituted a domestic emissions trading programme for sulphur dioxide, that is widely viewed as successful. Utilities capable of reducing their emissions levels and fuel consumption and so ultimately reducing their emissions below their allowance level may sell, on the Chicago Board of Trade, their excess allowances to the public, particularly other utilities for which it is more economically efficient to purchase extra allowances than to purchase greater controls.

The US has also strongly supported authorisation of JI and CDM. In fact, the US has been engaged in JI/CDM-type projects in other countries through the 'pilot programme' approved in 1995 under the pre-Kyoto title of 'Activities Implemented Jointly' (AIJ). The US initiative on JI started in 1994 and by the 1999 evaluation point consisted of 32 approved projects, 18 of which were already underway.

Canada

Authorisation type regulatory systems that potentially encompass greenhouse gas emissions, are at the core of the Canadian environmental legal framework. The Act also includes powers to make regulations for 'systems related to tradable units'

The Office of the Canadian Joint Implementation Initiative opened in 1996, to promote JI actions under the FCCC, and in 1998 was extended to include CDM credits.

Under the North American Agreement on Environmental Co-operation (NAAEC), which is a side agreement to the North American Free Trade Association (NAFTA), the contracting parties agreed to maintain a high level of environmental protection and to effective enforcement of their environmental laws. Under the title 'Regional Action on Global Issues', the Commission on Environmental Co-operation is commencing a programme to facilitate implementation of the Kyoto Protocols CDM.

Apart from the Canadian Government measures to develop a market-based system relating to tradable units there is a voluntary initiative under the Greenhouse Gas Emission Reduction Trading Pilot (GERT), established by a multi-stakeholder partnership including governments, industry, associations and environmental groups. In addition, Canada has made a participating contribution to the World Bank's Prototype Carbon Fund. Canadian energy corporations have completed several direct emission trades, and a private Internet exchange for power producers to trade emission reduction credits has been established.[17]

Canadian groups are working diligently to implement the proposals under the Protocol, against a background of a general national government commitment that does not even necessarily depend on Kyoto Protocol ratification.

Europe

The list of developed countries are overwhelmingly from Europe, but their position is complicated by the fact that the majority of these countries also belong to the European Union (EU). However, its approach to climate change is intended to complement the national programmes of Member States to reduce their greenhouse gas emissions. Initial attempts to introduce a Europe-wide carbon tax have not proved fruitful, but proposal for other fiscal changes have continued, supplemented by a focus upon energy efficiency and renewable energy sources.

The European Commission has put forward proposals for a

[17] The Calgary Herald, 3 May 2000, at p A-10.

greenhouse gas emissions trading scheme within the European Union[18] which differs in substantial ways from schemes introduced in a number of Member States.

Bearing in mind that the energy sector within the EU is responsible for the production of 80 per cent of the Community's carbon dioxide and 26 per cent of methane emissions it is not suprising that the Community's initiatives have promoted the more efficient and rational use of energy. The Commission has also drawn up a strategy to reduce by half the growth in emissions from the transport sector. The voluntary agreement with European Automobile Manufacturers' Association (ACEA)[19] which seeks to reduce carbon dioxide emissions from new cars sold in 2008 by 25 per cent compared to 1995 levels. The overall strategy is expected to contribute approximately 15 per cent of the Community's reduction commitment under the Kyoto Protocol.[20] Similar agreements are also being made with non-European manufacturers.[21]

However, mindful of the need for further action, the Commission launched the European Climate Change Programme in March 2000 designed to develop ideas and proposals to ensure Kyoto obligations are met.

[18] Brussels, 8.3.2000. COM (9000) 87 final.

[19] ACEA represents BMW, Daimler-Benz, Fiat, Ford of Europe, General motors, Peugeot-Citroen, Renault, VW and Volvo.

[20] European Commission 'Carbon dioxide emissions from cars: the EU implementing the Kyoto Protocol'.

[21] Agreements have been reached with Japan Automobile Manufacturers Association and the Korean Automobile Manufacturers Association in 1999.

The United Kingdom

The current UK Government has stated that its central policy objective is to "...achieve environmental improvements as a key component of the overall goal of sustainable development".[22] To achieve this objective and the need to limit greenhouse gas emissions from the burning of fossil fuels has become the main driving force behind the Governments energy efficiency programmes. In addition the Climate Change Levy came into force in April 2001 and will apply to all use of fossil fuels outside the domestic use sector. This is designed to encourage industry to move towards raising prices for energy, in addition to provide incentives for investing in energy efficiency.

The beginning of 2002 saw the introduction of an Emissions Trading Scheme,[23] which is both voluntary and includes an auction to provide incentives for participants to become involved.

A fuel tax escalator was introduced by the previous Government, with all party support, which provided the benefit of stabilising the consumption of motor vehicle fuel consumption. However, following an orchestrated protest by farmers and the independent commercial road hauliers in 2001, the current Government decided to abandon this as a tool to reduce the carbon dioxide produced by the transport sector.

The Norwegian Perspective

Norway is a major producer of fossil fuel due to the substantial petroleum resources on their Continental shelf. It is the second largest net exporter of oil in the world, and among the top ten gas exporters. On the other hand, fossil fuel does not play the same important role within Norway as in many other countries. More than half of Norway's total energy demand, including domestic heating, is supplied by electricity.[24] But virtually all electricity consumed in Norway is produced from hydroelectric power plants, and this explains why the Kyoto Protocol allows Norway to increase its greenhouse gas emissions by 1% until the 2008-2012 period, from its 1990 level. However, since the emissions have

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[22] DTI (1998), *Conclusions of the review of energy sources for power generation and government response to Fourth and Fifth Reports of the Trade and Industry Committee,* Cm 4071.

[23] See Patricia Park, 'The UK Emissions Trading Scheme: A Brave New World or the result of hurried thinking'. *ELM 13:8.*

[24] The per capita consumption of electricity in Norway is the second highest in the world.

increased substantially since 1990 due to petroleum production it means a 7% reduction from present levels to be in compliance with the Kyoto obligations. The government has, therefore, introduced a programme to implement the flexible mechanisms of the Kyoto Protocol.

Altogether, carbon dioxide taxes now apply to 64% of total carbon dioxide emissions in Norway,[25] which corresponds to 45% of national emissions of greenhouse gases.

A national system for greenhouse gas emission trading is expected to be set up with effect from 2008 to include almost 90% of greenhouse gas emissions in Norway. It is also expected that the final scheme will be compatible with the European Commission's proposals for such a scheme. The EU system will cover other Nordic countries and it would seem unlikely that Norway would establish a national system, which differs considerably from the regional one.

Norway has always been a strong supporter of the principle of joint implementation under the FCCC, and as early as 1993, Norway initiated the first pilot projects in order to gain experience of joint implementation.

Australia/New Zealand

In the Asia Pacific region, the only developed countries are Japan, Australia and New Zealand, with no other countries in the region with any specific obligations to meet emission reduction targets.

In *Australia* there is a high degree of dependence upon fossil fuels, which has persuaded Australia to argue for differentiated responsibilities in the international negotiations to meet emissions reductions targets. Two thirds of its greenhouse gas emissions are from energy and industrial processes, and so there is a high level of national interest in taking steps to meet Kyoto-based targets.

Despite the declaration that Australia will not ratify the Protocol, Australia has already begun to take measures to implement it. The Australian Greenhouse Office, which is the lead agency on greenhouse gas issues, has noted, however, that there is an 'early action' problem. Essentially, both firms and governments must choose how to act towards a multilateral obligation before it is clear whether that obligation will enter into force and before its exact nature is known. More recently, the Sydney

[25] St meld, nr 54 (2000-2001) p 68.

Futures Exchange has joined with the State Forests of New South Wales to launch the world's first exchange-traded market for carbon sequestration credits. Buyers will be able to offset carbon emissions with credits generated by planting forests to absorb carbon dioxide.

In *New Zealand* there is as yet no climate change legislation in place but policy reviews have taken place on ways of reducing emissions from voluntary agreements and carbon absorption from new plantings. Emissions trading has attracted much attention, with lessons learned from the New Zealand Quota Management System in the fisheries sector, which provides for the 'quota' as a tradable property right that is the proportion of the total allowable catch for each species for each region.

The Developing Countries

The position of the developing countries is important since many of them will become significant producers of greenhouse gases in the near future.

China

The People's Republic of China occupies an important position by virtue of its geographical and demographic size, and its political influence. As an economy in transition to industrialisation, it will inevitably use large amounts of fossil fuels in the coming years and will, therefore contribute significantly to the emission of greenhouse gases through its dependence upon coal in its energy mix.

Although the People's Republic of China has been active in all the international negotiations on climate change, there is apparently little public awareness of the issues and as yet no active participation by the very large energy companies in the process. In general, however, the People's Republic appears to be supportive of the Protocol, not least because of its priority given to economic development over specific commitments to emissions reductions, as far as the developing countries are concerned.

Nigeria

Nigeria shares the same situation as other developing countries in not being bound to specific emissions reduction targets. Nevertheless, it is bound to prepare a national inventory of greenhouse gases and to implement national programmes to reduce global warming. However, as an important oil producer, Nigeria also has a concern that its oil economy is not adversely affected by the Protocol. So far, a National Committee on Climate Change has been set up, but other pre-existing agencies with environmental responsibilities will be involved in any steps taken. In Nigeria the priorities are seen as different for a country not yet in the same league as the developed countries, and the principal actions on climate change are seen as having to come from those countries.

Conclusion

It is generally accepted that emissions resulting from human activities are substantially increasing the atmospheric concentrations of greenhouse gases and, if unchecked, will result in an average additional warming of the earth's surface of up to 6 degrees centigrade. This is greater than any increase experienced in the last 10,000 years. From the discoveries of Arrhenius to the scientific modelling carried out on behalf of the Intergovernmental Panel on Climate Change over 100 years later the conclusions have not changed.

It was the 1985 Vienna Convention for the Protection of the Ozone Layer, which first indicated that it was concerned with the stratospheric ozone layer as a global unity and as such was part of a common resource or common interest. This was also reflected in the Framework Convention on Climate Change, which declares that global climate change is 'the common concern of mankind'.

The Montreal Protocol to the Vienna Convention was generally accepted to be a landmark agreement, which produced a sophisticated and effective model of international regulation that appears to be working. The Kyoto Protocol to the Framework Convention provides for a number of flexible mechanisms, which are designed to be business friendly, to encourage the developed countries to change their behaviour and reduce

their emissions of greenhouse gasses.

The Kyoto Protocol is not yet in force, and President Bush has declared that the USA has no intention of ratifying the Protocol. Nevertheless, many players are setting up CDM projects prior to the cut off date of 2008, while a number of States are legislating provisions for emission trading schemes. However, the important question is, will these business friendly, flexible mechanisms have any effect on the protection of the atmosphere?

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