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**‘CAP AND TRADE’:
REDUCING CARBON EMISSIONS AND
THE CLIMATE CHANGE ACT 2008**

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Abstract

The Climate Change Act 2008 came into force on the 26th November 2008 with the aim of establishing effective regulatory mechanisms to limit the UK’s carbon emissions and to mitigate the effects of climate change. The Act effectively introduces two elements into the legal system for reducing the UK’s net carbon emissions. First, the legislation enacts measures to mitigate the current damage made to the climate, by introducing carbon reduction commitments and setting targets for industry sectors. Second, it enables the Secretary of State to adapt policies according to the progress of the system, information for which will be provided by a reporting system. The UK is the first legal system in the world to formally adopt legislation aimed directly at these issues.¹

Keywords: climate change, emissions, Climate Change Act 2008, cap and trade

Introduction

The environment is high on the agenda of policy makers everywhere and as such it is necessary that legislation such as the Climate Change Act 2008 has a tangible impact on life in the UK and beyond, and does not just become a representation of political ambition that amounts to nothing more than tokenism. The issues that the Act aims to address are currently hot topics, academically, politically and generally, whether on the international stage as seen at last year’s United Nations sponsored summit at Copenhagen or on a local level as exemplified with the introduction and rise of transition towns such as Totnes, Devon.² This article begins by outlining the background to the legislation, and then will focus entirely on the adoption of the Carbon Reduction Commitment proposals. The aim of the proposals is to introduce emissions trading based on a ‘cap and trade’ scheme, similar to that found under the European Union’s Emissions Trading Scheme. The provisions made under the Act will, however, apply to businesses and groups that have previously been outside the remit of the European Union scheme. The discussion will then attempt to

¹ Stookes, P., *A Practical Approach to Environmental Law* (2009: OUP) p.97.

² See for example, The Transition Town Totnes website at <http://www.transitiontowntotnes.org/>

address whether this is a desirable mechanism for the objectives of the Act and compare regulation via economic mechanisms against traditional command and control forms of regulation.

1 Background to the Climate Change Act 2008

Climate change is a naturally occurring phenomenon, but recent times have seen a period of unprecedented (global) warming. It is the opinion of the wider scientific community that this is due to the activity of man. It is still generally agreed that human activity has accelerated the usual natural processes.³ The emission of greenhouse gases by human processes into the atmosphere is having a detrimental and potentially overwhelming effect on the climate, which in turn is dramatically affecting ecosystems, weather conditions and sea-levels. An aggravating factor is the fact that secondary to the emission of harmful gases at extreme levels, activities such as deforestation are exacerbating the process by reducing natural sink mechanisms for the absorption of carbon dioxide by plants and trees.⁴

The issue of climate change in general, is a complex area to regulate effectively.⁵ This is due to the nature of the problem itself. The atmosphere, as a resource is difficult to legislate for, as it is transboundary and does not easily allow for the attachment of any real ownership rights.⁶ The need for co-operation on regulating air pollution is greater than in other areas and this relies on the restriction of combined human activity that crosses traditional divides based on nationality.⁷ As a result, the effective regulation of such an issue may ignite debates surrounding the sovereignty of states.⁸ The problem of climate change can be seen to necessitate a far wider scope for regulation than seen historically. The entire planet is at risk and so the stakes can be seen to be greater than ever before. There is no particular tangible 'commons' that is threatened. The 'climate' itself is at stake. But it is at least recognised that there is a need for the carbon-intensive economies to decrease and therefore that energy-intensive activities and carbon-intensive energy use must also decrease.⁹

³ Stookes, *A Practical Approach to Environmental Law*; see also the website of the Intergovernmental Panel on Climate Change, available at <http://www.ipcc.ch/>

⁴ Stallworthy, M., *Understanding Environmental Law* (2008: Sweet & Maxwell), pp.199-200

⁵ *Ibid.*

⁶ For comparison see Hardy, G, 'The Tragedy of the Commons', (1968) 162(3859) *Science* 1243-1248.

⁷ Bell, S., and McGillivray, D., *Environmental Law* (2008: OUP) p.51.

⁸ Stallworthy, *Understanding Environmental Law*, pp.199-216.

⁹ The House of Commons, Environmental Audit Committee, *Emissions Trading: Government Response to the Committee's Second Report of Session 2006-2007 on the EU-ETS*, HC1072 Monday 22nd October 2007,

The Precedent: the Montreal Protocol

In September 1988, international parties agreed to the Montreal Protocol. The agreement was intended to address the increasing degradation of the ozone layer as a direct consequence of the world's reliance on chlorofluorocarbons or CFC's for such mundane, although important, uses as refrigeration and propellants. The use of CFC's was so prevalent that the damaging effect was rapid.

By 2008 it was estimated that 95% of ozone depleting substances had been phased out as a result of the Montreal Protocol's implementation. The success of the Protocol has been attributed to the early recognition of the role that developing countries would carry out in the reduction of CFC's. In order to secure the participation of such nations, later phase out deadlines were imposed on developing countries and the Multilateral Fund was set up to provide financial assistance in promoting technological changes, transfer of knowledge, innovation and expertise and training.¹⁰ It could be argued that the Montreal Protocol has set a precedent for responses to climate change; however it should also be noted that, while many of the issues are similar, the success of the Protocol is also due to the availability of alternative technologies.¹¹ It is suggested that alternatives to fossil fuel consumption seem to be less likely to be adopted on such a wide scale despite the existence of them for many years. In order for the precedent to provide an effective framework for a solution to climate change there needs to be greater investment in and uptake of alternatives. The likelihood of this could be stifled by the continued domination of oil on the worldwide economy.

2 Existing International and European Obligations

The core objectives of the Act can be seen as a reflection of the UK's response to existing international and European Union law concerning carbon reduction and climate change.

The UK's principal international obligations can be traced to the Kyoto Protocol which was adopted in December 1997. The Protocol reflected the recommendations of the United Nations Framework Convention on Climate Change (UNFCCC), which was one of the legal instruments which emanated from The Rio Earth Summit in 1992.¹² The subsequent Rio Declaration contained various basic principles designed to promoting sustainability, which included better protection of climate mechanisms. The Kyoto Protocol, the binding means by which to do this, was initiated as a response to an increasing trend towards globalisation of economic and environmental policy and pressure from the European Union and non-

¹⁰ Tietenberg, T., and Lewis, L., *Environmental Economics and Policy* (2010: Pearson) pp.354-355.

¹¹ *Ibid*

¹² See for example the UN Conference on Environment and Development's website at <http://www.un.org/geninfo/bp/enviro.html>

governmental organisations.¹³ Under the Protocol, the UK committed to reducing its carbon emissions to 12.5% of 1990 levels by 2012. The Climate Change Act adopts a different timescale to that agreed at the Kyoto Protocol: while the Act imposes a 2050 objective for the cutting of greenhouse gas emissions, the cut is way below the Kyoto targets.¹⁴

Based on a key driver of 'common but differentiated responsibilities',¹⁵ Kyoto pointedly targeted industrialised countries such as the USA and the UK. However, in the intervening years since the Protocol was first established there have been dramatic changes in the world economy.¹⁶ The emergence of countries which were previously defined as developing, such as China, India and Brazil has resulted in them becoming the fastest growing economies in the world¹⁷ and consequentially the world's most prolific polluters. The problem of climate change has become less dependent on the east/west, north/south divides, however the UK is still a prolific polluter and a major contributor to climate change. In 2009 it was estimated that the UK produces 2% of the global carbon emissions, despite only housing 1% of the world's population.¹⁸

The Conference of Parties (No 15) held in Copenhagen in December 2009 was expected to provide a definitive international agreement relating to climate change and provide an update to the Kyoto Protocol. The deal was due to be groundbreaking as there had never been such a large group of countries committed to the pursuit of a common agreement. The ramifications had the potential to be significant in relation to the domestic legislation. Any agreements would need to be reflected in the amended targets implemented under the Act. In practice the conference failed to meet expectations: in part due to the disagreement between developing and developed nations. Therefore the Government's original targets remain the standards required under the Act.

One aspect of the European Union's response is Directive 2003/87 (the European Union-Emissions Trading Scheme Directive) which states its purpose as;

¹³ Grubb M., et al., *The Kyoto Protocol: A Guide and an Assessment* (2001: Royal Institute of Internal Affairs, London)

¹⁴ ss1-3.

¹⁵ Principle 7, Rio Declaration see also UNFCCC Articles 2 and 3. For explanation of which see for example the United Nations' Framework Convention on Climate Change's website at http://unfccc.int/kyoto_protocol/items/2830.php

¹⁶ The Intergovernmental Panel on Climate Change reports on the progress of the international community in addressing climate change.

¹⁷ World Trade Organisation Trade Profiles 2009

¹⁸ Bell and McGillivray *Environmental Law* p.50

establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61 – to establish an efficient European market in greenhouse gas emission allowances, with the least possible diminution of economic development and employment.¹⁹

The Directive is aimed at installations that fall under the categories found under Annex 1 of the Directive. These include installations that participate in areas such as the production of pulp from timber, energy activities, the production and process of ferrous metals, and operations in the mineral industry. In the UK, these must operate under a permit that is issued by the Environment Agency.

In addition to the European Union-Emissions Trading Scheme (EU-ETS), larger organisations in the UK, not party to the EU-ETS are obliged by the Climate Change Levy (CCL), which applies to energy consumption in the non-domestic sector. Alongside the CCL, are Climate Change Agreements (CCA's).²⁰ These allow for a discounted CCL if the targets agreed under the CCA are met by the company concerned.

In deciding on the appropriate measures that should be adopted nationally, Parliament took into account the influence of the EU-ETS. The Environmental Audit Committee was established to review and audit government and non-governmental public bodies' policies with regard to the environment. The Committee was instrumental in the drafting of the Climate Change Bill and subsequent legislation. In 2007, the Committee held an inquiry into the measurable success of the EU-ETS and published its report entitled *The EU Emissions Trading Scheme: Lessons for the Future*²¹ in March of the same year. The report highlighted the significant deficiencies seen with the trading scheme and the constituent concepts of emissions trading generally. The inquiry addressed the fundamental purposes for the adoption of such an approach and whether this was in fact a viable route for the reduction of emissions overall. The Government viewed the continuance of the EU-ETS as essential and complementary to the UK's domestic strategy as 50% of the country's emissions were already covered under the scheme.²²

¹⁹ Directive 2003/87/EC OJ, 2003, L275/32 Article 1

²⁰ Finance Act 2000, Schedule 6.

²¹ The House of Commons, Environmental Audit Committee, *The EU Emissions Trading Scheme: Lessons for the Future*, HC70, Thursday 1st March 2007 see also The House of Commons, Environmental Audit Committee, *Beyond Stern: From the Climate Change Programme Review to the Draft Climate Change Bill*, HC460 Monday 30th July 2007.

²² The House of Commons, Environmental Audit Committee, *Emissions Trading: Government Response to the Committee's Second Report of Session 2006-2007 on the EU-ETS*, HC1072 Monday 22nd October 2007.

The Carbon Reduction Commitment Order

The CRC Energy Efficiency Scheme Order 2010²³ (the Order) was published in March 2010 in line with the target date set by the Government under the Act. The Order is the result of the provisions under sections 44, 46(3) and Schedule 3, Para 9 of the Act. The Order will apply to those businesses that use over £500,000 of electricity per annum. In order to qualify, the company concerned must; use a supply of electricity, part of which must be metered by a settled half-hourly meter, and which must also exceed the minimum threshold of 6000MWH. Section 44 of the Act states that;

- (1) The relevant national authority may make provision by regulations for trading schemes relating to greenhouse gas emissions.
- (2) A 'trading scheme' is a scheme that operates by—
 - (a) limiting or encouraging the limitation of activities that consist of the emission of greenhouse gas or that cause or contribute, directly or indirectly, to such emissions, or
 - (b) encouraging activities that consist of, or that cause or contribute, directly or indirectly, to reductions in greenhouse gas emissions or the removal of greenhouse gas from the atmosphere

The recommended scheme will establish a trading scheme on emissions allowances based on a 'cap and trade' format. Despite the requirements already in place as mentioned previously, the Government perceived that there remained a policy 'gap' that allowed many larger businesses and public sector organisations to trade without contributing to the UK's reduction commitments.²⁴ The scheme is aimed at ensuring that non-energy intensive operations contribute to the long-term targets for emission reductions.

It is therefore important to note that the obligations imposed by the Order address both direct and indirect emissions. The measurements in place previously such as the EU-ETS were solely concerned with direct emissions. Therefore the Order increases the scope of the emissions that will be controlled. Any consumption of 'green' fuels will remain subject to the Order. The emissions resulting from the use of such fuels are held to equal those of other fuels for the purposes of the trading scheme.²⁵

The 'cap and trade' scheme will commence with the registering of all qualifying organisations with the scheme administrator. In England and Wales this falls within the remit of the

²³ SI 2010/786.

²⁴ Da Silva, L., and Robinson, A., 'The Carbon Reduction Commitment: Is your Organisation Affected? An Update on the Government's Implementation Proposals', (2009) 7 *International Energy Law Review* 258-263.

²⁵ *Ibid.*

Environment Agency.²⁶ Organisations are required to submit a 'footprint' report to confirm their emissions.²⁷ This requires accurate and effective monitoring throughout companies. In large organisations it is the highest UK parent that is responsible for the gathering of data, however if a subsidiary accounts for a large enough proportion of emissions then it will be expected to act as a separate entity to its parent company for the purposes of the scheme. Government departments will also be subject to the scheme, regardless of consumption. Some have stated that this is due to the Government wishing to 'lead by example'. Furthermore, schools, universities and hospitals will also be covered by the Order. Exemptions apply to any emissions, (note it is the emissions themselves that are exempt, not the emitting organisation) that are covered by the European Emissions Trading Scheme and also to any emissions that are covered by existing Climate Change Agreements. Other, specified activities are exempted, such as the transportation of people and goods.²⁸

The scheme is expected to operate in seven year phases apart from the first phase, which is expected to extend over three years.²⁹ During the first phase, the Government will release for trading, a discretionary number of emission allowances without capping the overall numbers. The first cap will be set in 2013. Registered organisations will then be expected to purchase allowances to cover 90% of their predicted emissions for the coming phase. The accurate prediction of emission production for companies will therefore be crucial. Once the market is saturated, the allowances are expected to be traded via an auction system or via a secondary market, where the organisations may sell or buy allowances.³⁰

3 The Principles Underpinning the Legislation

At the heart of all legislation and theory relating to environmental protection there are several fundamental principles that provide indicators for the legislators. In relation to climate change, a number may be seen to apply.

Firstly, the polluter pays principle states that, '...the producers of goods or other items should be responsible for the costs of preventing or dealing with any pollution that the process causes...'³¹ It should be noted that the 'polluter' could equally be the producer and the consumer whose demand drives the production in the first place. It is estimated that one

²⁶ SI 2010/786 Part 2 Art.9(1)(a).

²⁷ *Ibid* Part 4.

²⁸ *Ibid* Part 3.

²⁹ *Ibid* Part 1 Article 2.

³⁰ Da Silva and Robinson, 'The Carbon Reduction Commitment', 258-263.

³¹ Principle 16 Rio Declaration

third of the UK's emissions originate in the domestic sector.³² Several issues are associated with the implementation of the principle. Firstly it is not legally binding and so as a discretionary principle it relies on the corporate governance of companies to ensure its inclusion in company policy. Secondly, while it may be included in company policy the terms of the principle are open to interpretation and abuse, leading to the suggestion that so long as the polluter pays it may continue to pollute.³³ Companies may also misinterpret the concept as it is established that the costs are to include full environmental costs not just those that are immediately tangible.³⁴ Despite its fundamental flaws the principle is still cited as being at the heart of many EC environmental policies and is influential on the introduction of economic instruments designed with the regulation of this area.

The inclusion of such terms into the EU-ETS Directive as 'the least possible diminution of economic development and employment.' directly highlights the conflict seen as a hurdle to the implementation of successful legislation in relation to carbon reduction. The irony that lies at the heart of all environmental legislation is encapsulated by the principle of sustainable development determined by the Brundtland Report entitled *Our Common Future*.³⁵ This states that sustainable development is 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs', and is considered further below in a climate context.

The UK's role in addressing climate change issues internationally is significant because it is/was an historically significant contributor. The concept of 'common but differentiated responsibilities' as above³⁶ underlines the perceived varying degrees of accountability held by different states and is engaged here. Industrialised nations such as the UK are deemed to have played a greater role in climate change and are therefore expected to take a greater share of the responsibility. This concept was further strengthened under the Kyoto Protocol which affected only those countries that polluted the most prolifically. Notions of inter-generational and intra-generational equity are closely linked to the concept (and are also interlinked to the concept of sustainable development) and suggest that justice for the purposes of climate change can be viewed as inter-temporal. It is accepted that the concept can be useful for matters of distributive justice in relation to climate change, and that similarly there is an understanding that the capacity of countries will be significant in the

³² Bell and McGillivray, *Environmental Law* p.513.

³³ *Ibid.*

³⁴ *Ibid.*

³⁵ WCED *Our Common Future* (1987: OUP).

³⁶ Principle 7, Rio Declaration see also UNFCCC Articles 2 and 3.

division of justice.³⁷ The arguments surrounding these principles and the corresponding international law are voluminous and are beyond the scope of this essay. Nevertheless it can be assumed that in implementing the Act, the UK is acting in a manner that accepts the assumed responsibility both for retrospective harm caused and action for the benefit of future generations.

4 The Economics of Climate Change Policy

The economy, both domestically and internationally is the critical factor in determining effective environmental regulation for combating climate change, both in the long term and in the short term. The two are infinitely intertwined. It is industrialisation and globalisation that has exacerbated the problem. Some have suggested that the environment and the economy effectively operate as a 'closed system'. The economy is driven by natural resources drawn from the environment.³⁸ All industry and commercial enterprises rely on, to some extent, the fuels derived from the environment. Using the principle of sustainable development is key to balancing the needs of the economy with the dwindling available resources. However, the term sustainable development has for some become a synonym of the term sustainable growth. The economist Herman Daly contests that this is inappropriate. He argues that sustainable growth is an oxymoronic statement and an impossible theory, while sustainable development is a more achievable concept: but this is only the case within the finite parameters of the earth's ecosystem. To 'grow' is defined as to become larger with addition, while in comparison to 'develop' is defined as evolving and becoming different. This is, in Daly's opinion a far more satisfactory analogy of the state of the economy as a subsystem of the earth's ecosystem.³⁹ The concepts may present issues of definitional clarity when trying to use them for the basis of legal obligation: *can* sustainable development form the basis of definite legal obligations for example?⁴⁰

It will be the capacity of the various countries that will define their role in the battle against climate change. As a Western European nation, the UK is in a position where the socio-economic conditions are optimal for adaption to the challenge of climate change. The stable economy and high gross domestic product of the UK and the rest of Western Europe allows

³⁷ Brunnee, J., 'Climate Change and Global Environmental Justice', in Ebbesson, J., and Okowa, P., (eds.) *Environmental Law and Justice in Context* (2009: CUP) pp.321-325.

³⁸ Tietenberg and Lewis, *Environmental Economics and Policy*, pp.15-17.

³⁹ Daly, H., 'Sustainable Growth: An Impossibility Theorem', as published in Daly, H., and Townsend, A., (eds) *Valuing the Earth* (1993: MIT Press).

⁴⁰ For a discussion of this aspect see for example Payne, S., Lowther, J., and Gray-Donald, J., 'Sustainable Development and the Role of Judges: From International Agreements to National Laws', (2007) 3(5) *International Journal Environmental, Cultural, Economic and Social Sustainability* 193-204

for the use of economic mechanisms to adapt to climate change policy. On the other hand, these reasons also indicate that the potential for the UK's natural systems to adapt is lower than in other regions.⁴¹

Tietenberg suggests that using economic incentives to prevent environmental degradation can be seen to be a cheaper alternative to the command and control regulatory mechanisms seen previously. The shift of environmental lobbyists' attitudes towards the economic market from adversary to ally has proved to provide an effective allegiance. The two concepts no longer have to be an 'either/or' scenario seen historically, further enhancing the entrenchment of the principle of sustainable development as an achievable goal.⁴²

The focus of economies, particularly in developed countries, is on liberal market forces, where the market itself, in the form of demand and supply, influences the growth of the economy. Adam Smith's 'invisible hand' theory explains the mechanism by which this is possible. The market is supported by prices based on the individual's ability to make decisions based purely on competition. Economic instruments used for regulation rely on 'price signals' and mimic the market conditions in contrast to the direct influence seen under so-called 'command and control' mechanisms.⁴³

Direct regulation or 'command and control' is based on a permit system that directly 'commands' sectors to work within its parameters. This then allows the regulators to 'control' the emissions of a sector.⁴⁴ This system has been criticised by some as being inflexible and excessively costly for businesses.⁴⁵ The centralised, bureaucratic nature of direct regulation was also seen as a barrier to its potential benefits as it was 'inherently inefficient and cumbersome'.⁴⁶ In contrast to these criticisms, some claimed that direct regulation was preferential for many in the business community as it provided clear and unambiguous rules and obligations, allowing for predictability and promoting clarity for the purposes of decision-making.⁴⁷

⁴¹ Munasinghe, M., and Swart. R., *Primer on Climate Change and Sustainable Development; Facts, Policy Analysis and Applications* (2005: CUP) pp.246-249

⁴² Tietenberg, T., 'Using Economic Incentives to maintain our Environment', in Daly, H., and Townsend, A., (eds) *Valuing the Earth*.

⁴³ Gunningham, N., 'Environment Law, Regulation and Governance: Shifting Architectures', (2009) 21(2) *Journal of Environmental Law* 179-212.

⁴⁴ *Ibid*

⁴⁵ *Ibid*

⁴⁶ *Ibid*

⁴⁷ *Ibid*

5 Analysis

A fundamental concern raised as a consequence of the Act is that those who are subject under the provisions are adequately informed of their position and obligations. The Confederation of British Industry (CBI) voiced its concerns in March 2009, that although businesses supported the concept of a low carbon economy,

many companies remain unaware and unprepared for what the Government's Carbon Reduction Commitment will involve, and are in for a real shock when these changes become law...The Government needs to do much more to raise awareness within the business community, and to ensure these regulations do not become an unnecessary bureaucratic burden.⁴⁸

The role of corporate governance in relation to the maintenance of environmental principles may be fortified by the Act. Directors of companies are currently obliged under the Companies Act 2006, s.172(1) to have regard for wider concerns than just financial gain when making decisions regarding promoting the interests of the company. This may include environmental concerns; however, there are no strict parameters for specific obligations. The targeted reduction in carbon emissions seen with the Act will increase the scope for corporate social responsibility beyond the existing voluntary and often based upon reputation motives.

The CBI has indicated that the move towards a 'green' economy is inevitable. Businesses have no choice but to make the requisite alterations to their methods. Apart from the increase in regulation aimed at businesses, there is the issue of competition to consider. The USA is preparing for a green economy by contemplating several initiatives that could provide British businesses with both new opportunities and emerging threats. To remain competitive, British businesses will be forced to recognise greener alternatives to match overseas competitors. This could be viewed as an example of the market itself initiating change.⁴⁹

The concept of emissions trading and capping is perceived as useful by some, because it allows individual subjects the flexibility to reduce emissions overall within the confines of their own strategies. This is seen to be a low-cost strategy at reducing emissions. A previous problem seen with command and control mechanisms included the cost-effectiveness of such mechanisms. The inclusion of overseas trading within the scheme has been suggested to encourage overseas investment in low carbon technologies, thus achieving collaboration across national borders. The Government's expectations for the new Act are ambitious.

⁴⁸ Dr Neil Bentley, CBI Director of Business Environment, March 12 2009.

⁴⁹ <http://climatechange.cbi.org.uk/> (Accessed March 12 2010).

They claim that the framework imposed by the legislation will be instrumental in 'galvanising' international agreements in the future by demonstrating the UK's leadership and commitment in tackling climate change. The Government recognises the need to balance domestic and international action.⁵⁰ By ensuring that all sectors within the UK economy reduce emissions, the legislation addresses the causes and the consequences as opposed to previous reactive approaches.

The overarching aim is to limit the number of allowances available to reduce energy consumption over time; this is to be achieved by effectively forcing qualifying organisations financially, to limit consumption and to seek to employ more efficient forms of operating. Aside from the penalties imposed for non-compliance such as fines, there are prospective rewards for those that excel under the scheme. For example, the Order sanctions a 'naming and shaming' policy that creates published league tables of organisations. This will obviously have either negative or positive reputational effects for companies. Secondly, there are opportunities for benefits through financial gain. The revenue injected into the initial stages of the scheme will not be an extra income for the Government. It is to be repaid to the best performing companies as the league table suggests. Those at the bottom of the league table will lose money, those in the middle will neither gain nor lose and those at the top will receive bonuses. This 'recycling' of the initial investment should ensure that there is a steady flow of revenue throughout the scheme. Additional profits can be made by the best performing companies via the selling of extra, surplus allowances.

During the 1980s, an earlier attempt was made to encourage environmental regulation in this sphere based on the notions of neo-liberalism and voluntarism. The era saw a move towards a rejection of the traditional direct regulation and the uptake of economic instruments reflecting the free market. These were of limited use, however, as businesses were wary of the extra financial burden that these mechanisms represented. This resulted in the introduction of voluntary schemes whereby programmes such as 'unilateral agreements', 'public voluntary programmes' and 'negotiated agreements' were adopted in favour of the former command and control techniques. These schemes were considered unsuccessful for a number of reasons: mainly due to their lacking in clear benefits in terms of emissions reductions. This was perhaps due to the lack of control and transparency that the voluntary basis of the idea introduced into the system. The uptake by businesses of the voluntary

⁵⁰ The House of Commons, Environmental Audit Committee, *Emissions Trading: Government Response to the Committee's Second Report of Session 2006-2007 on the EU-ETS*.

schemes was often viewed as a self-serving exercise, whether to avoid charges incurred via economic instruments or by circumventing the imposition of direct regulation.⁵¹ The obvious difference with the provisions under the Order is that they will be legally binding. Reliance on voluntarism is clearly not a viable option for the regulation of such issues.

The overall impact of any legislation can only be measured by its effectiveness as either a deterrent for unwanted behaviour or an incentive for the desired behaviour. As Glanville Williams described, the law is 'the cement of society, and an essential medium of change.'⁵² The role of law in regulating the emission of greenhouse gases to prevent the onset of climate change could be viewed as to place the protection of society in general under a regulatory authority. As Stallworthy suggests, 'law's key function lies in protecting recognised interest from identified harms [and that] law has a particular concern with the circumstances in which valid and viable exercises of constraint can be imposed.'⁵³ Therefore the enforcement procedure will have a dramatic effect on whether the Act will be viewed as 'having teeth' and whether it will be viable as an example internationally.

The stakeholders most affected by the provisions of the Act will be required in some cases to introduce complete overhauls of current administrative and management systems in order to accommodate the regime's requirements for the reporting and the monitoring of emissions. For smaller businesses perhaps the greatest concern may be the costs required to execute the provisions. A secondary concern may be their position in the trading market once the allowances have been issued and whether they will be able to trade equally with larger businesses. The Order allows for the appointment of third parties to act on behalf of organisations when trading allowances. However, this reiterates the potential for problems concerning monitoring and transparency which may lead to corruption, that have been seen previously. For larger businesses it will perhaps be a greater alteration to complex systems of corporate culture that will be the greatest concern.

There were several objections raised in response to the EU-ETS initiative that could have an application in the UK system. The case of *Societe Arcelor Atlantique et Lorraine v Premier Ministre* (2008)⁵⁴ C-127/07 raised the issue of inequality. It was considered whether the inclusion of steel industries but not aluminium or plastics gave the unregulated industries an unfair competitive advantage as the steel industry was not being treated equally under the

⁵¹ Gunningham, N., 'Environment Law, Regulation and Governance: Shifting Architectures', (2009) 21(2) *Journal of Environmental Law* 179-212.

⁵² Smith, A.T.H, *Glanville Williams: Learning the Law*, (2006: Sweet & Maxwell) p.2.

⁵³ Stallworthy, *Understanding Environmental Law* p.202

⁵⁴ *Societe Arcelor Atlantique et Lorraine v Premier Ministre* (2008) C-127/07

Directive. It was held that these were not strong enough grounds to affect the validity of the Directive. This could lead to the raising of similar issues within the UK. Is the scope of the Act capturing too wide a range of businesses for the provisions to be applied fairly? Whether the Order will have a more dramatic effect on smaller businesses or larger businesses remains to be seen.

The use of emissions trading as a mechanism for regulating pollution has faced criticism by some commentators on morality grounds.⁵⁵ A main argument in response to this position was that the approach was previously voluntary. As seen this is not the case for UK businesses now; and secondly, voluntarism is proven to fail in delivering efficient results regarding such a wide scale issue. This point can also be seen to link to the problems surrounding the implementation of the polluter pays principle, in that the polluter may continue to pollute so long as they can afford to do so. In response it could be argued that the provisions of the Order combat this issue by the utilisation of a reporting criterion. The polluter may only pollute within specified limits. The Order imposes both civil and criminal sanctions for non-compliance.⁵⁶

A leading climate change scientist has strongly opposed the use of the 'cap and trade' system, claiming that it is 'a path focussed on corporate greed.'⁵⁷ Dr James Hansen claims that the system is merely a hidden tax, which the companies will pass onto the consumer. He suggests the introduction of a fee-and-dividend system, whereby a fee is placed on the initial fossil fuel, which is redistributed to the public. The cost of using carbon-intensive products should increase, encouraging the consumer to pursue lower carbon alternatives. This can be seen as a demand-side policy that focuses on changing behaviour. The use of emissions trading is also criticised as being unethical, and that it allows 'business as usual'.⁵⁸

Conclusion

As seen, the Act is indeed unique on several levels. Internationally and domestically it is the first stepping-stone towards the expansion of environmental accountability. Businesses will be forced to act in accordance with set standards that may be challenging in the short-term, but that in the long-term could provide potential benefits. Aside from the move away from traditional mechanisms such as command and control to regulate environmental concerns,

⁵⁵ Sandel, M.J., 'Its Immoral to buy the right to Pollute', *New York Times* 17 December 1997.

⁵⁶ SI 2010/786 Part 14 and Part 15

⁵⁷ Goldenberg, S., 'James Hansen wants Copenhagen to fail: 'The idea of offsets is allowing business as usual' (www.guardian.co.uk) Posted on 3 December 2009

⁵⁸ *Ibid.*

the use of economic instruments has the potential to ignite change at the heart of the economy. The pursuit of a low carbon economy can only be achieved by removing other options. The priority of business will always be to make financial profits. The threat of climate change is not a new one, and yet it seems that it is only when at the brink of disaster that we choose to act. If the Climate Change Act 2008 enables regulation across the economy then it can be seen as a success and an example for other nations to follow.

It is arguable that the extreme long-term success of environmental legislation and particularly legislation such as the Act that aims to address problems of an international scale is reliant on changes in fundamental behaviours of entire populations. There is therefore some concern as to whether regulating via methods such as the emissions trading scheme will achieve the benefits that align with inter-generational equity and sustainable development. Some commentators suggest that the problem should be addressed from a 'bottom-up' approach rather than the 'top-down' approach seen here.⁵⁹ The focus should perhaps be on the demand-side of the economy rather than the supply-side. Perhaps the inclusion of schools, hospitals and local authorities will provide an opportunity to educate the consumer, as energy-reducing policies filter through to groups such as employees and students. There will be much to evaluate in the coming decades.

⁵⁹ Williams, A., 'Re-assessing Traditional Notions of Sustainable Development', (2006) 18 *Environmental Law and Management* 177-187.