

# THE ENVIRONMENT



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## ***i. Towards a Global and Ethical Approach to Environmental Challenges***

***By Cristina Narbona Ruiz<sup>1</sup>***

### ***The crisis: an opportunity to overhaul the economic model***

The current crisis offers a unique occasion to review from a progressive approach the economic model and, in particular, the relationship between economy and ecology.

In the past few months we have seen the emergence of the dire economic, social and environmental consequences of a system which privileges personal profit over the general interest, and greed and wastefulness over responsibility and prudence. Thus, an economic and cultural paradigm based on the myth of boundless abundance is sinking. The share of responsibility of those on the left who have tolerated or even justified the prevalence of the market over public regulation cannot be eluded.

This crisis must be tackled urgently, but by understanding its deep roots and not yielding to the temptation of tending only to the more serious symptoms. All the analyses point to the subordination of the real economy to a financial economy that generated astronomical profits for a tiny minority of the world population, and promoted excessive consumption and indebtedness; while concurrently social inequalities and the systematic destruction of the ecosystems escalated. The lack of regulation and insufficient public oversight favoured this process. Public authorities tolerated speculation and tax avoidance, which run alongside pollution and the exhaustion of natural resources. All in the name of a type of economic growth that in no way increased global well-being, but rather increasingly threatens it for future generations.

For too long, even among the political left, environmental demands have been considered incompatible with economic growth, and in turn with job creation and social progress. The reality is that the economy has never been 'autonomous' from ecology: all the economic processes are interdependent with ecological processes. The consequences of having ignored this reality have become tragically evident today. As evident, unfortunately, as the capacity of the dominant economic model to destroy employment and seriously compromise the delivery of basic public services. By no means did environmental demands trigger this crisis, nor were the demands for social justice the culprits of the financial catastrophe, but rather quite the other way around.

On the other hand, the experience of some European countries have shown throughout the years that higher and lasting levels of continued job creation and increasing well-being, alongside reinforced environmental and social requirements are possible; in contrast to other countries such as Spain, where unemployment rates remained stable in a period of fast economic growth which featured a combination of low skilled jobs, scant attention to the impact on eco systems and the inefficient use of natural resources.

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Since the mid-20<sup>th</sup> century there has been increasing scientific knowledge on the risks of ecological deterioration of our planet created by our economic model. Since the 90s there has been mounting evidence that global warming is the fallout of the overuse of fossil fuels and massive deforestation, two of the 'conditions' for economic growth. Climatic change is already on the political agenda of most countries, but until now the effectiveness of the existing policies has been minimal.

Climate change is just one face of the ominous incidence of human activity on the ecological balances, with very serious consequences for the less favoured citizens, especially in the poorest countries, and even, according to Pentagon studies that were kept secret until very recently, with significant consequences for peace and international security.

Other environmental challenges are still far from the political decision making arena. One example is the loss of biodiversity. Among other effects it has brought the extinction of species essential for the production of foodstuffs. FAO data from 2007 shows that almost 80% of the fishing-grounds are already exhausted or on the brink of depletion due to overfishing. Pressure on biological resources also reduces the potential for remedying illnesses and entails higher vulnerability risks to the geographical propagation of pests. But there are hardly any binding commitments to protect biodiversity at the national and international levels.

Air, water and ground pollution create increasing threats to public health, particularly in the poorest countries and developing economies. One million people die yearly in China solely due to pollution-related causes. Scarcity of drinking water and inadequate treatment of sewage is the number one cause of disease in the world.

Climate change is fuelling the recrudescence of adverse meteorological phenomena that are felt more severely by the populations of less developed countries. From 1984 to 2004, natural disasters caused 900,000 victims in these countries, with 75,000 in the rich countries. The fourth Report of the Intergovernmental Panel of Climatic Change (IPCC), published in 2007, confirms that the ability to adjust and become resilient to climate change (and any other ecological risks) depends on the economic and social development level of the country.

Africa is the great paradox. Despite contributing only 4% to the world emissions of greenhouse gases, it suffers the worst consequences of climate change: longer lasting droughts, more frequent floods, growing desertification and biodiversity loss. The IPCC estimates that by 2020 more than 400 million Africans will be severely affected by global warming.

As stated in the Brundtland Report (1987), "As a system approaches ecological limits, inequalities sharpen". Climate change, as any other environmental impact of our economic model, is above all a huge ethical problem, since those who suffer more greatly from the decline of the ecosystems are not only those who are the least responsible for it, but also those who benefited the least from the global economic growth. This demands a much more committed answer from developed countries. They need to re-orientate their consumption patterns while contributing to the introduction of cleaner technologies in developing countries.

On top of its ethical dimension, environmental decline carries increasing economic costs. The OECD has estimated the economic cost of environmental 'inaction' since 2004. Its methodology was later adopted in the World Bank reports (since 2006) and the well-know Stern Review on the Economics of Climate Change for the UK Prime Minister (2007). The costs of "inaction", broadly understood as total absence, insufficiency or delays of the decisions for reducing environmental risks,

are much higher than those of adopting the right policies in time. The mentioned reports see the yearly cost of inaction reaching 20% of the world GDP by 2050. Its counterpart, should action be taken, is only 1%.

This means that, even in a strictly economic approach which overlooks the ethical dimension, it is preferable to face up to the environmental challenges sooner rather than later. This reasoning has been absent from the recent operation of the economy that promoted, or at least tolerated, the pursuit of short-term personal profits. Maybe falling prey to short-term electoral interests, once again public action has failed by not favouring long-lasting collective benefits.

Political reaction has been absent even when the short-term effects of the ecological crisis rocked the economy as seen with the spectacular increase of energy and food prices in 2008. There is a tendency to interpret these signals as cyclical and not as evidence of the gradual depletion of fossil fuels in the case of energy or the effects of climatic change and the quality loss of soils in the case of foodstuffs.

Strong political leadership is needed to go beyond the described economic paradigm. In fact, the biggest current political challenge is leading the transition towards a more equitable economy that duly respects the environment and reinforces democracy: an economy that produces longer lasting well-being for more persons; an economy based on a new approach to the concept of efficacy, beyond the one measured in monetary terms, focused on answering more social needs with less resources and generating less pollution; an economy that imitates the natural processes that guarantee the maintenance of life, diversification, closed loops, and symbiosis in the long-term.

Undoubtedly, this downturn has revealed how extremely grave mistakes have been made when developing business strategies free of environmental constraints, as in the case with the auto industry in the US, and has brought about a renewed interest in energy efficiency and renewable energies. Every public stimulus plan aimed at economic recovery incorporates “green policies” of varying scope and intensity.

Nevertheless, in many instances the positive impact of these action plans will be far smaller than the negative effects from all the other policies which have been adopted. What is sorely missing is a global approach that consistently integrates environmental constraints into each and every one of these measures. In this context it is worth mentioning the initiatives taken by the US for building up renewable energies and calling for better energy efficiency in all sectors of production.

In summary, the present crisis should be seen as a manifestation of the lack of economic, environmental and social sustainability of our present economic model. It should be understood that in a long term perspective the economy is fully dependent on ecology and J. Genereux<sup>2</sup> wrote that the “economic laws” are “man made laws”, reflecting human priorities and institutions, whereas “natural laws”, be they from biology or chemistry, cannot be circumvented by human action without entailing results which may even become irreversible. Therefore, to get out of this crisis ecology must lay down conditions, such as social justice, goals, and economic rationale and show the way to proceed.

A specific way to act upon this approach is given by the advocates for the so called “economics of functionality”, which makes the case for a shift from an economic model focused around the sale of products to another based upon the

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<sup>2</sup> J. Genereux, “Les vraies lois de l’économie”, Seuil 2005

renting and selling of services. Such an approach would make it possible to move back from the symbolic value we attach to material goods, favouring instead their use value. In Europe many cities have wide experience in renting council-owned bicycles and now this is being extended to publicly owned vehicles along the same lines. The environmental results and the improved use of public spaces have been both fully encouraging and herald the extension of this approach to many other durable consumer goods.

### ***Democracy and sustainability: the right to the environment***

Overcoming the present downturn calls for a paradigm shift which begins with accountability and the recognition of the right to a dignified life for all the citizens of the planet, both those living today and those who will live in it tomorrow.

The environmental challenges are not marginal issues stemming from an “aesthetic” stance towards the natural environment, but rather indispensable conditions for the health, quality of life and progress of the human race. Each and every human being is equally entitled to breathing unpolluted air, to have access to enough drinking water and to enjoy our natural habitat. Those are rights inextricably linked to the most fundamental of all, the right to life.

As observed by J.P. Fitoussi and E. Laurent, “environmental equality is the true key to sustainable development, and this calls for us to step up our claims for more democracy. The food crisis, as the energy crisis, highlights the relationship between distribution of resources and distribution of rights, between ecology and democracy”<sup>3</sup>.

It would however be impossible to implement a “full equality of rights” to natural resources without first introducing sustainability criteria. For example, the right to food must be understood as an entitlement to an adequate caloric diet to keep the subject in good health, but it is not tantamount to an unlimited right to an animal protein rich diet which is unsustainable from the public health point of view due to methane emissions and intensive usage of land and water. The same can be said about the right to use energy resources, which does not extend to energy waste as practiced by rich countries.

A specific instance of the need to distribute environmental rights according to fair principles is that of the future agreement on the fight against climate change. The EU, following the suggestion from Spain among others, champions the gradual convergence of CO<sub>2</sub> per capita emissions in order to introduce an element of justice which would make possible the involvement of developing countries in such an agreement. Following this approach Eco-equity, composed of a group of researchers, has put forward a calculation method to distribute the effort required to mitigate climate change which takes into consideration the per capita emissions, emissions accumulated since 1990, per capita income and the relative poverty level in each country. According to this calculation, the commitments geared toward reducing greenhouse gases by 2020 would represent an amount equal to 1.5% of the US GNP, 1.1% of the EU GNP, 0.7% of the Chinese GNP and only 0.08% of the GNP of all the developing countries combined.

Amartya Sen<sup>4</sup> goes as far as saying that “a famine means that people are starving, which does not imply that there is no food to eat ... famines never happen in

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<sup>3</sup> J.P. Fitoussi and E. Laurent, „La Nouvelle Ecologie Politique“, Seuil 2008.

<sup>4</sup> A.Sen.“Poverty and famines: an essay on entitlement and deprivation“, Oxford University Press, 1981.

a truly democratic country.” Furthermore, many studies<sup>5</sup> prove that “democratic quality”, the set of mechanisms guaranteeing the exercise of rights, accountability and participation of the public, has a far greater effect on a country's environmental quality than on its level of economic development.

### ***Measuring development and well-being***

If the time has come to argue for worldwide ecological emergency and social justice as effective priorities of political action, this requires above all a new interpretation of the notion of well-being more in tune with the new conception of the relationship between people and between human beings and nature.

Up to now the GDP has been the primary indicator of “economic success” and even of social advancement, even though it does not take into account at all basic components of wellbeing such as income and wealth distribution, environmental quality, gender equality and quality of public services.

Alternatives to GDP have been suggested since the beginning of the 1970's<sup>6</sup>, and a whole array of indicators have been developed, especially since the UN “Human Development Report” in 1990 and the subsequent work by the Nobel Laureate for Economics, Amartya Sen.

However, this analytical work has hardly spilled over into the realm of political debate, where GDP continues to hold sway even today as an indicator holding more relevance than that warranted by its content. Such a consideration is linked, once again, to the dominant values. GDP measures the amount of goods and services traded in the market, determined by prices, overlooking the social and environmental effects of the current production and consumption model. If one or other indicators do not substitute for GDP, or at least complement it when assessing the evolution of the economy and the effectiveness of public policies, the reason is due to an “ethical”<sup>7</sup> choice and not to technical problems in developing or making available other indicators. GDP is not an indicator of well-being at all<sup>8</sup>; if it continues to be the main indicator in the political and economic debate it is because the main goal of the dominant economic model is not the continuing well-being of all its citizens.

Selecting the “best possible well-being indicator”, or specifically weighing up several indicators, is thus subordinate to the goals of public policies and to the citizens' own perceptions of their quality of life.

The OECD takes an active role in this discussion and it promotes an international platform to improve the measurement of social progress. The results will be made public in the course of this year. In addition, the French Government has instituted a Committee to pursue the same goal, headed by J. Stiglitz, A. Senn and J.P. Fitoussi.

At any rate, most of the available indicators on well-being today incorporate variables measuring environmental quality, depletion of natural resources or ecosystem degradation. The value of human well-being as the quality of the whole life web to which we belong is then explicitly recognized. This calls for a different outlook on our world, identifying basic elements which are vital for happiness and whose

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<sup>5</sup> „Environmental Sustainability Index“, Yale Center for Environmental Law&Policy“, 2005.

<sup>6</sup> W.Nordhaus and Y. Tobin: Is Growth Obsolete?“, in „The Measurement of Economic and Social Performance“, National Bureau of Economic Research, 1973.

<sup>7</sup> A. Vanoli: “Une Histoire de la Comptabilité Nationale“, La Découverte, „Repères“, 2002.

<sup>8</sup> In the 2001 report on „Report on the Welfare of nations “ OCDE , 2001, GDP limitations are explicitly recognized.

significance had been relegated by the dominant cultural patterns of the “consumer society”.

***Conclusion***

Natural resources are limited, but our imagination and determination in building a better world should know no bounds. The chief role of progressive forces has always been to push for a transformation of society beyond the dominant particular interests holding sway at any moment in history. Following on from the struggle for the rights of workers, women and minorities, the struggle must urgently be pursued for the rights of all citizens on this planet, those of today and of tomorrow, to dwell in an environment that is able to guarantee them health, quality of life and durable progress.

## ***ii. Climate Change, the EU and Markets for Emissions*** ***By Navraj Ghaleigh<sup>9</sup>***

### ***Introduction***

The concept that anthropogenic climate change is the greatest of the 21st century's challenges has been taken seriously by the EU. Keen to fill the vacuum left by the Bush Administration's abstention from multilateral attempts to engage with the problem,<sup>10</sup> the EU has positioned itself as a climate change leader to the USA's laggard. The most striking evidence of this role may be found in the EU's Emissions Trading Scheme<sup>11</sup> - anyone with even a nodding familiarity of global carbon markets recognises the position of primacy held by the Scheme within them. With a trading volume of at least €28bn in 2007, the EU ETS represents approximately 70% of global traded volumes in carbon products<sup>12</sup> and 62% of physical volumes<sup>13</sup>. It is variously described as "the main driving force of the global carbon market", "the main driver for emissions reductions, both at homes and in developing countries"<sup>14</sup>, "the engine, perhaps even the laboratory, of the global carbon market".<sup>15</sup> The EU ETS's trading volumes dwarf those of its rivals - the voluntary Chicago Climate Exchange, the New South Wales ETS, the New Zealand ETS and the fledgling Japanese scheme - none of which has a volume equal to even 1% of the EU ETS<sup>16</sup>. Within its own territory the Scheme is a significant policy instrument, with 40% of the EU's total GHG emissions within its regulatory ambit, representing approximately 11,000 of the EU's largest emitting installations. For the period 2008-2012 alone it is estimated to generate emissions reductions of 3.3% (139 MtCO<sub>2</sub> p.a.) from the base year of 1990 in the EU-15<sup>17</sup>. Whilst the European Climate Change Programme (ECCP) extends to issues of fuel efficiency and quality, vehicular emissions, biofuels, renewables, and carbon capture and storage, it is no exaggeration to describe the EU ETS as the keystone in the architecture of the European response to global climate change.

This paper commences with a discussion of the science of climate change and the international legal framework that underpins responses to the problematic – a crucial if not always considered matter – including the United Nations Framework Convention on Climate Change (Part A). The Kyoto Protocol is rightly considered to form the basis of current commitments to emissions reductions. The discussion here however seeks to ground it in its economic context which in turn raised a set of challenges for the EU in

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<sup>10</sup> See generally, Ghaleigh, N.S. in O'Connor (ed) *Anti-Americanism: History, Causes, Themes* (Vol 1, Oxford, 2007) 139

<sup>11</sup> Established by Directive 2003/87/EC, hereinafter 'EU ETS' or 'the Scheme'

<sup>12</sup> K Roine et al, *Carbon 2008 - Post-2012 Is Now* (Point Carbon: 2008). The World Bank's estimate €37bn, representing more than 2bn EUAs changing hands. See World Bank, *State and Trends of the Carbon Market 2008* (Washington DC, 2008).

<sup>13</sup> Ibid

<sup>14</sup> Roine et al, *ibid*

<sup>15</sup> World Bank, *State and Trends of the Carbon Market 2008* (Washington DC, 2008)

<sup>16</sup> Ibid, 7.

<sup>17</sup> European Environment Agency, *Greenhouse Gas Emission Trends and Projects in Europe 2008: Tracking Progress Towards Kyoto Targets*, EEA Report 5/2008, 7

the Kyoto negotiations (Part B). Part C introduces the EU's principal legislative commitment in the wake of that process and consequent regulatory realignment – the EU Emissions Trading Scheme. The state of the art of climate change negotiations, mechanisms and processes is addressed in Part D which seeks to outline the major currents of intellectual debate, diplomatic progress and structural capacity in climate change processes.

**Part A: Climate Change Science and the Framework Convention**

It is 'very likely' that the major risk of global climate change comes from anthropogenic increases in greenhouse gases<sup>18</sup>. The greenhouse effect is the result of certain gases (principally water vapour, carbon dioxide and to a lesser extent, methane) which envelop the earth, regulate the in- and out-flow of the sun's energy and make the earth habitable. In its absence, the earth's temperature would be about -18°C. Carbon dioxide, the most voluminous of the greenhouse gases, was present in the pre-industrial (1750) atmosphere at a concentration of 280 parts per million (ppm). Its rise to 379 ppm by 2005 is substantially a function of global industrialisation, which is in turn driven by fossil fuel combustion. In the same period, methane (which has a global warming potential approximately 70 times greater than CO<sub>2</sub> by mass) has increased in concentration from 715 to 1774 ppm<sup>19</sup>. Other human activities, such as deforestation also contribute to global climate change, as to do emissions of methane from agricultural sources and the loss of soil carbon due to excessive ploughing and intensive agriculture. The effects of global climate change are likely to be felt world-wide, but with differential impacts. Predicted rises in global temperatures would potentially have world-wide effects on sea levels, forests, agriculture, natural ecosystems, and population distribution<sup>20</sup>. The ability to adapt to such changes is not unconnected to the economic wealth, technical capabilities and government structures of different societies.

Science has played a decisive role in the formation of the current regime of climate change. Indeed, the Intergovernmental Panel on Climate Change (IPCC), was established in 1988 by UNEP and WMO "anticipating the critical role that scientific consensus would play in building the political will to respond to climate change."<sup>21</sup> Established to review the scientific evidence and make recommendations, the IPCC's reports are recognised as the definitive source of information on climate change. The most recent Assessment Reports of 2007 give the lie to suggestions that climate change is a natural, not anthropogenic, phenomenon, finding that the rise in global average temperature since the mid-20th century is "very likely" (that is, more than 90% certain) to result from the increase in human-induced greenhouse gas emissions. If left unchecked, such increases in emissions are "likely" (more than 66% certain) to result in an average temperature change of up to 6.4oC by 2099. In addition, the IPCC predicts an average sea level rise due to thermal expansion and melting of ice of up to 65 cm by the year 2100, with the probability of reduced precipitation in Africa, Southern Europe, Amazonia and central North America due to temperature increases.

Legal responses to climate change have had, inter alia to address the fact that greenhouse gas production goes to the heart of energy, transport, agricultural and industrial policy in all developed states and increasingly in developing ones too. The

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<sup>18</sup> IPCC, 'Summary for Policy Makers' in *Climate Change 2007: The Physical Science Basis: Contribution of Working Group 1 to the Fourth Assessment Report* (Cambridge 2007).

<sup>19</sup> *Ibid.*

<sup>20</sup> *Ibid.*

<sup>21</sup> *Ibid.*

objective of the Convention is not to reverse greenhouse gas emissions but to stabilize them 'at a level that would prevent dangerous anthropogenic interference with the climate system'. The principles listed in Article 3 include reference to inter-generational equity, common but differentiated responsibility, the precautionary principle, and the right of all parties to sustainable development, as well as the need to promote 'a supportive and open international economic system'. Policies and measures taken should be cost-effective in the sense that they will ensure 'global benefits at the lowest possible cost' – a consideration that looms large in the architecture of the Kyoto Protocol itself. As articulated in Article 4, the explicit assumption is that the developed states that have contributed most of the greenhouse gas emissions should also contribute most to tackling the problem, both by providing resources and by 'taking the lead' in adopting control measures.

### **Part B: The EU and Climate Change**

Before examining the substance of the Kyoto Protocol, we should pause to consider the EU's own methods of addressing environmental concerns. Prior to and continuing into the 1990s, the EU adopted a policy approach of "regulatory environmentalism", premised on the assumption that reliance on free-market solutions would misallocate natural resources and produce inadequate incentives to prevent environmental degradation<sup>22</sup>. There also existed a secondary and emerging strain in EU policy that, as early as 1993 in the form of the Community's Fifth Environmental Action Programme, acknowledged the limitations of command-and-control regulation and the utility of market mechanisms to "internal[ise] external environmental costs"<sup>23</sup>. Also familiar is the influence that these American domestic policy successes had in the negotiations at Kyoto, the architecture of the Kyoto Protocol and in particular the flexibility mechanisms contained in its Articles 6, 12 and 17<sup>24</sup>.

The key feature of the Kyoto Protocol is its establishment, for the first time, of quantitative restrictions on emissions from industrialised economies. These states listed in Annex B of the Protocol<sup>25</sup> are limited in their emissions of the six greenhouse gases listed in Annex A. The quantified emission limitation and reduction commitments contained in Article 3(1) (that seeks to ensure that overall emissions from annex B states are reduced to at least 5% below 1990 levels within the period 2008 to 2012) is of course subject to Article 4(2)(a) of the Convention. Article 3(1) sets out different limits for each party, in deference to their particular circumstances, including ability to reduce emissions, access to clean technology, use of energy and so on. In most cases (including the EU, USA and Japan) a reduction of between 5% and 8% is specified, but New Zealand, Russia and Ukraine need only stabilise emissions, while Norway, Australia and Iceland are permitted to increase by amounts ranging from 1% to 10%. All parties listed in annex I of the Convention must show 'demonstrable progress' in meeting their Kyoto Protocol commitments by 2005<sup>26</sup>.

Whilst reductions of 5% or so may seem low, they are deceptive. Choice of 1990 as the main base year means that percentage reductions of up to 30% or more of present emissions will have to be made by those states whose greenhouse gas

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<sup>22</sup> Golub, Jonathan, ed. (1998), *New Instruments for Environmental Policy in the EU*, London: Routledge, 8.

<sup>23</sup> "A European Community programme of policy and action in relation to the environment and sustainable development", Official Journal C 138 , 17/05/1993, p.5

<sup>24</sup> Ghaleigh, N.S. in O'Connor (ed) *Anti-Americanism: History, Causes, Themes* (Vol 1, Oxford, 2007) 139

<sup>25</sup> The list of parties in Annex B Kyoto Protocol is substantially similar to that in Annex I of the UNFCCC.

<sup>26</sup> 1997 Protocol, Article 3 (2).

emissions have increased since 1990. The United States is in this category: in 2000 a cut of some 36% would have been needed to reduce its emissions to 1990 levels. In certain circumstances economies in transition, including Russia and Ukraine, may opt for a base year earlier than 1990<sup>27</sup> in order to enable them to increase emissions because their economies have contracted so sharply since then. Developing states are not included in annex B so no emissions limits apply to them and they are not required to do more than meet their existing commitments under Article 4(1) of the Convention<sup>28</sup>.

The possibility that some developed states might find it economically advantageous to meet their commitments jointly, and that developing states might also benefit from such assistance, was envisaged in Articles 4(2)(a) and 4(5) of the Convention and in a decision of the 1st COP, although the commitments of each party would not thereby be modified<sup>29</sup>. Such ideas were more fully articulated in the Kyoto Protocol and in particular, in its three flexibility mechanisms – Clean Development Mechanism under Article 12, Joint Implementation under Article 6 and International Emissions Trading under Article 17. Before each of these is explored at greater length, it is necessary to consider their conceptual underpinnings.

### ***Economic Background***

The Kyoto Protocol's use of market based instruments to generate emission reductions is commonly described as innovative or radical<sup>30</sup>. Whilst this may be true in the context of international environmental regulation, its pedigree in both theory and practice is venerable. Those familiar with Law and Economics theory will recognise in techniques such as carbon trading the legacy of Pigovian and Coasian economics. The former identified the social benefits of compelling companies to pay for the costs of their own pollution<sup>31</sup>, whilst the latter's *The Problem of Social Cost* demonstrated how allocating property rights and allowing trade yields pareto efficient results<sup>32</sup>. These insights laid the foundations for market mechanisms, such as emissions trading, as an alternative to traditional command-and-control methods, based on its claim to deliver environmental outcomes at the least cost.

The rationale of mechanisms such as emissions trading is as follows. A regulator sets a cap on aggregate emissions, distributes the right to emit to regulated facilities (with their emission allowances totalling less than the aggregate emissions) and permits the market to determine the emission price and degree of abatement at individual facilities. If the regulator allows regulated facilities to transfer their emission allowances, the distribution of emission reductions among facilities will be equal to the marginal cost of emission reductions among facilities<sup>33</sup>. If the marginal cost of emission reductions varies among facilities, total costs can be lowered by reallocating greater effort to the facility that can lower emissions at a lower cost. Thus, when marginal cost is equal among facilities, total costs are lowest and the environmental target is reached.

Market mechanisms were first used as environmental tools in the USA in the 1990s in the form of Title IV of the Clean Air (Amendment) Act 1990. A response to SO<sub>2</sub>

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<sup>27</sup> *Ibid*, Article 3 (5). Annex I parties may use 1995 as a base year for gases listed in Article 3(8).

<sup>28</sup> *Ibid*, Article 10.

<sup>29</sup> See Decision 5/CP.1 (1995) and generally Missfeldt, 7 *RECIEL* (1998) 128; Barrett, in Cameron, Werksman, Roderick (eds) *Improving Compliance with International Environmental Law* (London, 1996) 229.

<sup>30</sup> See Freestone and Streck (eds) *Legal Aspects of Implementing the Kyoto Protocol*, Ch 1.

<sup>31</sup> See Pigou, *The Economics of Welfare* (London, 1920)

<sup>32</sup> See Coase, 3 *Journal of Law and Economics* (1960) 1. See Kramer, *A Coda to Coase in In the Realm of Legal and Moral Philosophy: Critical Encounters* (Basingstoke, 1998).

<sup>33</sup> 'Marginal cost' is the additional cost to achieve an additional unit of emissions at any facility.

generated acid rain, the Act allocated a fixed number of allowances to the electricity industry, with firms being required to surrender allowances for tons of SO<sub>2</sub> emitted, with transfers being permitted and banking<sup>34</sup>. The success of the scheme in terms of costs but also as a driver of abatement innovation exceeded expectations. As a consequence the tool of emissions trading gained favour domestically and most significantly at the multilateral level, where it formed a key negotiating strategy for the Clinton administration in negotiations leading Kyoto<sup>35</sup>. Each of the three Kyoto 'Flexibility Mechanisms' seeks to draw on the logic of the Coasian privatisation of the commons and trading the resultant property rights with a view to achieving emission reductions in the most cost effective manner, in the optimal global location.

### **Part C. The EU Emissions Trading Scheme**

It is notable that having 'lost' the battle of ideas over the optimal means by which to tackle climate change, the EU subsequently embraced the new settlement with gusto. The Kyoto Protocol committed the EU to an 8% GHG reduction by the end of 2012. Reductions were to be re-assigned to Member States pursuant to its own 'Burden Sharing Agreement'<sup>36</sup>, facilitated by one of the EU's few negotiating successes at Kyoto, Article 4(1)<sup>37</sup>. Foremost amongst the jointly implemented responses of the EU is the Emission Trading Directive<sup>38</sup>. The Directive followed Commission consultations, studies and finally a "Green Paper on Greenhouse Gas Emissions Trading within the European Union"<sup>39</sup> which acknowledged the EU's Kyoto obligations as well as the necessity that that process did not represent the outer limit of the EU's relevant ambitions. Accordingly the proposal was for a scheme whose industry sector coverage was substantially repeated in the final Directive<sup>40</sup>, though with a threshold of 50MW rated thermal input. In terms of quantum of allowances and distribution, the Green Paper saw a role for the Commission only for purposes of determining Member States' internal allocations where the risk of national discrimination arose. The setting of total quantities of allowances was for the Member States themselves. The question of free allocation (by grandfathering or benchmarking) or auctioning was left open whilst the need to avoid discrimination against new entrants was given consideration.

In terms of the substance of the process, it is notable that the questions of industry sector coverage and thresholds attracted minimal contention<sup>41</sup>. Furthermore, the task of setting total quantities of allowances to be allocated and the task of distributing those allowances which were envisaged as separate in the Green Paper, were combined into what were to become National Allocation Plans. This created the risk that the "level of ambition under the scheme risks being diluted as a result of industry lobbying over their allocations...rather than ensuring that negotiation over the

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<sup>34</sup> See Streck and Gehring, 4 *Environmental Law Reporter* (2005) 10219.

<sup>35</sup> See MacKenzie, *The Political Economy of Carbon Trading*, 29 *London Review of Books* (2007)----, and Damro and Mendez, 12 *Environmental Politics* (2003) 2.

<sup>36</sup> See Council Decision of 25 April 2002 concerning the approval of the Kyoto Protocol and the joint fulfilment of commitments thereunder, Official Journal L 130 , 15/05/2002

<sup>37</sup> "Any Parties included in Annex I that have reached an agreement [may] fulfil their commitments under Article 3 jointly..." Italics added.

<sup>38</sup> For an account of the Scheme's details,, see Robinson J et al, *Climate Change Law: Emissions Trading in the EU and the UK* (Cameron May, London, 2007), Part I

<sup>39</sup> COM (2000) 87 Final

<sup>40</sup> see Legal Form supra

<sup>41</sup> See Robinson J et al, *Climate Change Law: Emissions Trading in the EU and the UK* (Cameron May, London, 2007) p.63,

distribution [between and within Member States] is a zero sum game with no impact on the environmental integrity of the scheme.”<sup>42</sup>

### **Legal form**

The EU ETS is in its basic structure a conventional cap-and-trade scheme<sup>43</sup>. At its heart a fixed number of allowances are issued which are divided into a quantity of pollutant which is emitted over commitment periods or phases. The level of resultant emissions is thus equal to the established cap on emissions. Allowances are allocated to operators who are then obligated to monitor and report their emissions, and to surrender at the end each period an equal number of allowances to the units of pollution emitted. Penalties are attached to non-compliance. The scheme also provides for the buying and selling of allowances between parties, whether regulated entities with obligations under the Scheme or mere third parties.

To this generic schema, the EU ETS's specific approaches to coverage and allowance should be noted. The Directive's coverage of activities, detailed in its Annex I, excludes aviation, shipping and most contentiously the aluminium and chemical sectors while including energy, ferrous metals, minerals, and pulp and paper. The Commission's Explanatory Memorandum to its original proposal justified the chemical exemption on the basis of its mere 1% contribution to the EU's total CO<sub>2</sub> emissions and the fact that the large number of installations (approximately 34,000) would create significant administrative complexity to the Scheme<sup>44</sup>. The Memorandum remains silent on the exclusion of the aluminium sector. These choices have generated much subsequent controversy, not least before the ECJ<sup>45</sup>.

Allowances, as we shall see, have been a source of at least equal controversy. Defined by Article 3(a) as one tonne CO<sub>2</sub>e<sup>46</sup>, allowances are allocated and issued to installations by way of a two stage process. Stage one requires Member States to develop National Allocation Plans “stating the total quantity of allowances that it intends to allocate for that period and how it proposes to allocate them...based on objective and transparent criteria, including those listed in Annex III.”<sup>47</sup> Such NAPs are subject to Commission approval, only after which may MSs definitively determine the total quantity of allowances and the allocation of the same amongst installations<sup>48</sup>. As with the question of sectoral scope, the details of such matters have greatly exercised the ECJ and are discussed below.

The EU ETS has been implemented in phases - 2005 to 2007 and 2008 to 2012 - which coordinate with the Kyoto Protocol compliance period. Subsequent phases are intended to run in consecutive 5 year periods. Phase I is commonly described as a learning-by-doing phase, allowing Member States to get acquainted with a novel system, to make progress towards their Kyoto Protocol commitments and towards meeting their

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<sup>42</sup> Ibid, at 65

<sup>43</sup> The economic rationale for such mechanisms is the claim that they minimise the marginal abatement cost of arriving at a particular level of pollution - the locus classicus for which is Dales, J.H. Pollution, Property and Prices (Toronto, 1968), drawing, *inter alia*, on the Nobel prize winning insights of Ronald Coase's The Problem of Social Cost, 3 *Journal of Law and Economics* (1960)

<sup>44</sup> COM (2001) 581 Final, OJ C 75E, 26.3.2002, 33 at Part 11.

<sup>45</sup> See N.S. Ghaleigh, “Emissions Trading Before the European Court of Justice” in D Freestone & C Streck, *Legal Aspects of Carbon Trading: Kyoto Copenhagen and Beyond* (OUP, 2009) forthcoming.

<sup>46</sup> “‘Allowance’ means an allowance to emit one tonne of carbon dioxide equivalent during a specified period, which shall be valid only for the purposes of meeting the requirements of this Directive and shall be transferable in accordance with the provisions of this Directive”

<sup>47</sup> See Article 9(1)

<sup>48</sup> Ibid Article 9(3)

particular CO<sub>2</sub> goals pursuant to the Burden Sharing Agreement.<sup>49</sup> The Scheme may be extended to other greenhouse gases and installations in subsequent phases.

As is well known, the ‘trial period’ of Phase I was characterised by a price collapse in late April 2006 after the publication of the verified emissions data by Member State after Member State revealed that emissions were significantly below their allocations to installations. Pre-announcement OTC prices were slightly over €30/ton, by mid-May had fallen to approx. €15/ton and then to near zero from early 2007 until the end of Phase I. In a sense it is inaccurate to characterize this as a market failure – on the contrary, it might be argued, the market reacted precisely as it ought to have by adjusting when information that changes expectations was made available. Once aggregate emissions and the resulting demand for allowances were known, the fact of over-allocation had its predictable price consequences.<sup>50</sup> Thereafter, Phase II contracts dominated the markets’ attention, with December 2008 EUAs ranging between €12-25 per tonne, remaining within the €20-24 band for the majority of the year. Upon the commencement of Phase II, such prices remained durable (at around €20-25 for most of 2007), revealing the price of emitting GHG in the EU but also sending a strong signal to FlexMechs project developers that emission reductions generated through projects which generate carbon credits would find a robust market in the EU ETS.<sup>51</sup>

A consequence of the Phase I price collapse was its impact on the design of Phase II. The Commission’s approach to the Phase II caps has been described as “unquestionably tough”,<sup>52</sup> being much tighter than in Phase I in an overt attempt to create demand for emission reductions, whether generated within the EU or in non-Annex I countries. The Phase II cap for EU 27 is 2,098 Mt/yr, cutting Member States’ suggested allocations in NAPs by 245 Mt/yr (10.4%). The largest absolute cuts were in Poland (76Mt), Germany (29Mt), Bulgaria (25Mt) and the largest relative cuts in Baltic States (ave. 37%).<sup>53</sup> These figures represent a cut of 130MtCO<sub>2</sub> (6.0%) below 2005 verified emissions and 160MtCO<sub>2</sub> (7.1%) below 2007 verified emissions.

Constraints on Member States’ ability to comply with the Scheme are eased somewhat by Phase II’s credit limits (the maximum CDM/JI volumes that can be purchased for compliance purposes) which vary according to Member States from 10% in most cases, up to 22% for Germany. Coupled with tightness of allocations, this creates the possibility for sizable offset/credit imports. Nonetheless it remains the case that the EU ETS is projected to reduce EU-15 emissions by 139MtCO<sub>2</sub> p.a. during 2008-12 (a 3.3% reduction from the 1990 baseline). The ongoing impact of such measures is demonstrated by the fact that whilst the 2006 emissions of only 4 of the EU 15 were lower than their Kyoto target (France, Germany, Sweden and the UK), that figure is expected to rise to 12 of 15 by 2010 (Denmark, Italy and Spain being the miscreants).<sup>54</sup> Such is the strength of these projections that the operation of Phase II in much of 2008 saw relatively strong prices between €19-29/ton, although that price had halved since the onset of the global recession in February 2009.

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<sup>49</sup> Op cit n.?

<sup>50</sup> It should be noted however that there is also a strong argument that over-allocation was accompanied by over-abatement – see AD Ellerman & BK Buchner, “Over-Allocation or Abatement” A Preliminary Analysis of the EU ETS Based on the 2005-06 Emissions Data” 41 *Environmental Resource Economics* (2008), 267-287, at 270.

<sup>51</sup> See World Bank, State and Trends of the Carbon Market 2008 (Washington DC, 2008), at 7.

<sup>52</sup> Ibid.

<sup>53</sup> See Point Carbon Carbon 2008 - Post-2012 Is Now *ibid.*, p. 28, Table 1.

<sup>54</sup> European Environment Agency, “GHG Emission Trends and Projections in Europe”, 2008

#### **Part D. An Assessment of the State of the Art**

The Economics of Climate Change: The Stern Review,<sup>55</sup> commissioned by the United Kingdom Treasury and a comprehensive treatment, describes anthropogenic climate change in terms of catastrophic market failure. Its main conclusion is that in order to avoid the worst effects of climate change, prompt investment totalling one percent of global gross domestic product per annum is necessary. Investment would be required for mitigation and adaptation, thereby encompassing inter alia low carbon energy technologies and carbon capture and storage. The failure to do so, argues Stern, could risk global GDP being up to twenty percent lower than it otherwise might be.

In this context, emission reductions required by the Kyoto Protocol seem overwhelmingly inadequate. Similarly, whatever the achievements of the Clean Development Mechanism, it is clear that it has so far failed to drive technological innovation at an appropriate rate, or facilitate technology transfer on a scale that meets the needs of the burgeoning new economies of India and China in particular. Indeed a brief analysis of global energy forecasts brings the scale and dynamics of the relative positions of industrialised and emerging economies into sharp relief.

Global demand for energy is forecast to increase by 66% by 2030, with fossil fuels accounting for 86% of the total. Whilst energy usage by OECD and non-OECD states was roughly equal in 2005, the latter's share is set to increase to 59% in 2030, with India and China's accounting for the majority of that extra demand. Global CO<sub>2</sub> emissions are estimated to increase from 28.1 billion metric tons in 2005 to 42.3 billion tons in 2030 and the share of non-OECD economies rising from 51% in 2005 to 63.3% in 2030.<sup>56</sup> If such figures appear to support the argument for uniform emission reductions, it is of course the case that the historic responsibility for global emissions lies mainly with developed, not developing economies, and has facilitated a level of welfare the latter are keen to emulate. Moreover, disparities exist in per capita CO<sub>2</sub> totals. Indian and Chinese emissions stood at 3.7 and 1.0 metrics tons per capita in 2004 as compared with 9.5 and 19.7 metric tons per capita for Japan and the USA. Even after the forecast increases by 2030 to 7.1 and 1.8 metrics tons per capita for India and China (with the US and Europe remaining substantially the same) the gap persists.<sup>57</sup>

#### **The Negotiating Context**

Before considering possible amendments to the existing regulatory architecture of climate change, we must ask how future agreements will be negotiated. Whilst the negotiations under the auspices of the Framework Convention are clearly central, it is important to note the existence of parallel processes.

The Kyoto Protocol commitment period expires in 2012. At the time of writing, many of the key issues necessary for a successor agreement were expected to be substantially settled at COP 14 in 2008, if not their details. Adoption of a new protocol was scheduled for COP 15 at Copenhagen in December 2009. Both will build upon the Bali Roadmap – a series of decisions taken at COP 13 in December 2007, which include the Bali Action Plan,<sup>58</sup> purporting to chart the course for a new negotiating process, with

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<sup>55</sup> (Cambridge, 2007). The lead author is the Head of the UK Government Economic Service, and a former Chief Economist of the World Bank. Whilst influential, the report has also attracted criticism – see Tol and Yohe, 7 *World Economics* (2006) 233-50.

<sup>56</sup> Energy Information Administration, *International Energy Outlook* (2008). Whilst the previous edition of this work recognised the “risk that emissions from developing states such as Brazil, China and India will overtake those of OECD states as they industrialise further [as] a real one”, that possibility has now become a fact, with China soon to become the world's single largest GHG emitter.

<sup>57</sup> International Energy Agency, *World Energy Outlook* (Vienna, 2006).

<sup>58</sup> Decision 1/CP.13.

the aim of completion by Copenhagen. It also includes the AWG-KP<sup>59</sup> negotiations, the launch of the Adaptation Fund, and the Article 9 review of the Kyoto Protocol, as well as decisions on technology transfer and reducing emissions from deforestation. This is an ambitious agenda.

Running in parallel with the 'Convention' negotiations are two other processes. The Major Economies Meeting (MEM), initiated by President Bush in 2007, is avowedly "a new initiative to develop and contribute to a post-Kyoto framework on energy security and climate change..." that seeks to "contribute to existing national, bilateral, regional and international programs" and not undermine them.<sup>60</sup> Not surprisingly it has been viewed with some suspicion, given President Bush's less than firm commitment to action on climate change at home and abroad. Moreover, participation is limited to major actors (principally OECD nations, USA, China, India, Brazil, EU) rather than the more broadly based Convention processes. A similarly handpicked parallel process operates under the auspices of the G8. Commenced in 2005 under the British Presidency,<sup>61</sup> the G8 has undertaken various actions to combat climate change, including a 'dialogue' with Brazil, Mexico, South Africa, China and India. As with the MEM, the G8+5 process is intended to complement the UN Framework Convention process and recognises it as the "only forum in which binding agreements on future frameworks can be negotiated."

The 2008 G8+8 meetings in Hokkaido<sup>62</sup> reaffirmed that future cooperation would be "rooted in the objective, provisions, and principles of the Convention" and in the Bali Roadmap. "Serious consideration" would be given to the "ambitious IPCC scenarios," and the role of technology in addressing climate change.<sup>63</sup> Most significantly, governments agreed on the "goal of achieving at least a 50% reduction in global emissions by 2050".<sup>64</sup> Compared with the emission reductions of the Kyoto Protocol, this would represent a significant change in the commitments leading economies are prepared to undertake. Whilst the Summit Leaders Declaration states that, "this global challenge can only be met by a global response, in particular, by the contributions from all major economies, consistent with the principle of common but differentiated responsibilities and respective capabilities",<sup>65</sup> it is far from clear that emerging economies take the same view. The Declaration emerging from the larger meeting of the MEM states the need to "ensure the agreed outcome [of negotiations] maximizes the efforts of all nations [with] nationally appropriate mitigation actions, supported and enabled by technology, financing and capacity-building, with a view to achieving a deviation from business as usual emissions"<sup>66</sup> This differently nuanced emphasis is characteristic of post-Kyoto negotiations.

On the relative negotiating positions of Annex I and non-Annex I parties – and hence the future articulation of the principle of common but differentiated responsibility –

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<sup>59</sup> Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol. Article 3, para 9 of the Kyoto Protocol mandates the Conference of the Parties to initiate consideration of future commitments for Annex I Parties. It aims to complete its work and have its results adopted by the Conference of the Parties at the earliest possible time to ensure that there is no gap between the first and second commitment period of the Kyoto Protocol.

<sup>60</sup> Formally known as the 'Major Economies Process on Energy Security and Climate Change' – see <http://www.state.gov/g/oes/climate/mem/>.

<sup>61</sup> <http://www.g8.gov.uk/>.

<sup>62</sup> Expanded to include Australia, Indonesia and South Korea.

<sup>63</sup> See *G8 Hokkaido Toyako Summit Leaders Declaration*, 8 July 2008, paragraphs 22-35.

<sup>64</sup> *Ibid*, paragraph 23 – note the absence of a specified base year or shared medium term reduction targets.

<sup>65</sup> *Ibid*.

<sup>66</sup> See *Declaration of Leaders' Meeting of Major Economies on Energy Security and Climate Change*, 9 July 2008, paragraphs 2 and 5.

the most striking development of recent years has been the vast economic expansion of India and China. As we have seen, most of the commitments under the Convention and the Protocol apply only to developed state parties. Given recent patterns of industrialisation, is it appropriate, or sustainable, for non-Annex I parties to continue to be largely unconstrained by the climate change regime? Whilst the Convention and Protocol provide some incentives for developing states to tackle greenhouse gas emissions, through various provisions on technology transfer, the clean development mechanism, and 'additional' funding from developed states and the Global Environment Facility, they have trenchantly resisted the application of quantified emission limitation and reduction commitments.

The background to this position is twofold. First is the historic fact that industrialised economies have long benefited from massive GHG emissions, are substantially responsible for the current problems and should not as such deprive newly industrialising economies from similarly raising the standard of living of their own citizens. Secondly, the rejectionist position taken by the Bush administration vis-à-vis the Kyoto Protocol, and its general appearance as a climate change denier, has not persuaded emerging economies that they are obliged to undertake binding commitments. Moreover, pursuant to Article 4(7)'s '[t]he extent to which developing country Parties will effectively implement their commitments under the Convention will depend on the effective implementation by developed country parties of their commitments....'.<sup>67</sup> Here we can see that the already limited obligations of developing states appear to be conditional on provision of benefits by developed states. Whilst a regime in which one group of states bears most of the burdens and another group reaps most of the benefits accurately reflects a sense of historical responsibility for the causes of climate change it is far from clear that this approach is optimally placed to solve the problem at hand. The question thus arises whether the articulation of the principle of common but differentiated responsibility found in the Kyoto Protocol is sustainable given the scientific urgency indicated by the 2007 IPCC Assessment Reports and the economic realities of Indian and Chinese industrialisation.

### ***Post-Kyoto, Pre-Copenhagen***

As noted above, the Bali Action Plan aims to chart the course for a new negotiating process, with the aim of completion by the Copenhagen Conference of the Parties in December 2009. The preamble to the Bali Action Plan speaks of the need for "deep cuts" in global GHG emissions and refers to the "urgency" of the task, with the work of the IPCC playing an important role.<sup>68</sup> The report indicates that global emissions of greenhouse gases (GHGs) need to peak in the next 10–15 years and be reduced to very low levels, well below half of levels in 2000 by the middle of the twenty-first century in order to stabilize their concentrations in the atmosphere at the lowest levels assessed by the IPCC to date in its scenarios. This goes further than either the Kyoto Protocol or the UNFCCC in emphasizing the immediacy of the problem. The majority of countries, with EU leadership, wished to consider cuts of between 25%-40% for rich countries, by 2020, but agreement was blocked by the USA, Canada and Russia.<sup>69</sup> The commitment to "Measurable, reportable and verifiable... mitigation commitments or actions including

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<sup>67</sup> Wording of this kind is found also in the Convention on Biological Diversity, Article 20(4), and see *supra* Ch 3, section 3(3). On co-operation within the UNFCCC and Kyoto Protocol regime, see Baettig *et al*, 30 *Environmental Science and Policy* (2008)

<sup>68</sup> Decision 5/CP.13.

<sup>69</sup> See *Climate Change Strategic Comments* (2008) vol 14, available from the International Institute for Strategic Studies at [www.iiss.org](http://www.iiss.org)

quantified emissions limitation” for all developed country parties is however important in ensuring that the USA, which is not a party to the Kyoto protocol, remains involved in mitigation efforts.<sup>70</sup> Although it is moving in a positive direction, the Bali Action Plan frustrates hopes of establishing binding targets, which will be the focus of subsequent negotiations.<sup>71</sup>

The Bali conference made significant progress on putting deforestation and forest degradation firmly on the agenda – issue areas long accepted to mark the most significant failings of the Kyoto Protocol.<sup>72</sup> Decision 2/CP.13 required the SBSTA to undertake a program of work in relation to this, with a report to be made at COP 14. This builds on the groundwork done in the Marrakech Accords on defining and adopting methodologies. The same decision invites developing countries to “explore a range of actions, identify options and undertake efforts, including demonstration activities, to address the drivers of deforestation relevant to their national circumstances”.<sup>73</sup> Developed country parties are “invited” to mobilise resources in support of this, although it is left open what incentives might be provided.<sup>74</sup> Decision CMP3/6 established Good Practice Guidance for land use, land use change, and forestry activities.

The inclusion of Carbon Capture and Storage Technology in the CDM continues to be discussed by the SBSTA. Strengthening of the previous regime on technology sharing is necessary if the potential for cooperation is to be realised. Here the Experts Group on Technology Transfer (EGTT) established by the Marrakech Accords has an important role to play. Decision CP13/3 establishes a very comprehensive work programme including assessing the gaps and barriers to technology transfer, developing a set of performance indicators to monitor and evaluate the effectiveness of the technology transfer framework and bringing forth a strategy paper on how to move forward. The issue of secure funding for the EGTT is also given continued precedence. Decision CP13/4 requests the GEF to develop a plan for scaling up funding for transfer of environmentally sound technologies. Decision CMP3/1 on the clean development mechanism reiterates many of the concerns relating to establishing baselines, approval of methodologies and monitoring that have plagued the CDM from its inception. No promises about the long-term future of the CDM were made. In relation to Joint Implementation, there was again little in the way of radical reform.

Post-Kyoto, the two-track framework of Annex 1/non Annex 1 countries is likely to include further commitments for developing countries. Article 1(b)(ii) of the Bali Action Plan calls for “nationally appropriate” mitigation actions to be undertaken “in a measurable, reportable and verifiable manner.” This may be compared to the commitments in Article 10(b) of Kyoto Protocol to: Formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change and measures to facilitate adequate adaptation to climate change.

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<sup>70</sup> Morgan, *Post-Kyoto: The International Context for Progress on Climate Change*, Memorandum to the House of Commons Environmental Audit Committee, at 1.5.

<sup>71</sup> *Ibid*, at 1.1. See also UK House of Commons, Environmental Audit Committee, *6<sup>th</sup> Report: Reaching an International Agreement on Climate Change* (London, 2008).

<sup>72</sup> See generally, “Climate Policy, Carbon Markets and Forestry”, Vol. 2, No. 3, *Carbon & Climate Law Review* (2008).

<sup>73</sup> *Ibid*, at 3.

<sup>74</sup> In addition, the World Bank has launched a Forest Carbon Partnership Facility to help demonstrate the feasibility of accurately accounting for REDD reductions. The two components are a \$100 million “readiness” fund focusing on capacity building and a \$200million carbon finance mechanism for pilot projects. The Bank has already raised roughly half of this money from nine industrialized countries and The Nature Conservancy.

It is clear that, whilst the Bali Action Plan remains informed by the principle of common but differentiated responsibility, developing countries are increasingly expected to play a full role in mitigation efforts. The language used, although short of binding commitments, indicates that concrete evidence of progress will be required. The strengthening of the Dialogue on Long Term Cooperative Action on Climate Change to form an Ad hoc Working Group<sup>75</sup> is another step towards a more inclusive international framework. This is a positive step in relation to the long-term actions necessary by all countries to address climate change.

### **Conclusions**

The foregoing seeks to place the EU's responses to the climate change challenge in a global and intellectual context. Suffice to say despite its singular contribution to the process, by way of the EU ETS, the EU's leadership position in the approach to the Copenhagen COP is not secured. This is so not least because of the US position which post-Bush is only slowly emerging, so it is difficult to predict their appetite for adopting a leadership role in the negotiations. The Obama administration is certain to be different from its predecessor's but what shape that may take is uncertain.

Further uncertainty, and undermining of the EU ETS, arises from the global recession. In early 2009 it was certainly the case that it operated as a significant interruption to the process, and Parties appear reluctant to table serious offers whilst they try to take stock of the impact of the recession. Furthermore, the global down turn is causing both a significant downturn in carbon prices and price volatility – problematic both for the making of investment decisions and the impact on carbon abatement projects.<sup>76</sup> As with Phase I of the EU ETS, the recession is undermining the capacity of markets to deliver meaningful carbon abatements.

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<sup>75</sup> Decision CP.13/1 at 2.

<sup>76</sup> For the most recent EU response, see Communication ('Towards a comprehensive CC agreement') COM (2009) 39.