OPTIONS FOR GREENHOUSE GAS MITIGATION MECHANISMS IN SOUTH AFRICAN LEGISLATION

(Paper drafted within the context of BASIC Task 3: Policy coherence and institutional coordination: clarifying institutional responsibilities, including for the Clean Development Mechanism)

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The final text of this document is the responsibility of the authors' and any inaccuracies or inconsistencies are theirs alone.

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ABSTRACT :

This paper's point of departure is the thinking that, in the absence of current legislative mitigation obligations, it would be worthwhile to consider whether certain of South Africa's current environmental statues contain vehicles for the implementation of greenhouse gas emissions mitigation mechanisms. The authors' notion is that such legislative vehicles may profitably be used to introduce urgent mitigation obligations until such time (if ever) government embarks upon a comprehensive legislative programme to reduce such emissions.

However, in order to understand South Africa's place within the international climate change legal architecture, this paper first considers the country's obligations in terms of the United Nations Framework Convention on Climate Change and Kyoto Protocol, and attempts to asses the country's present status of compliance with these commitments. Against this international background the paper proceeds to consider the national environmental legal dimension which originates in the South African Constitution Act (No. 108 of 1996). The implications of the national environmental law reform process, whence recent South African statutes derive, is considered, and the potential of specific, legislative greenhouse gas emissions mitigation mechanisms are explored. Two key statutes, namely the National Environmental Management Act (No. 107 of 1998) and the National Environmental Management: Air Quality Act (No. 39 of 2004) are discussed as the legislative space for the development of greenhouse gas mitigation mechanisms. Examples of such mechanisms explored in this paper include: voluntary agreements, trading schemes, labeling and monitoring. The paper concludes by providing a number of conclusions and concrete recommendations for further action.

The authors' hope that this paper will contribute to the broader objectives of the BASIC project and, more particularly, will provide some perspective to South African law- and decision-makers on the potential for harnessing legislative tools to the objective of greenhouse gas emissions mitigation.

For a broader international perspective this paper may be read in conjunction with the Companion Resource hereto, also produced under the auspices of the BASIC Project, namely: *Greenhouse gas mitigation mechanisms: Relevant South African Policy and Strategy and Lessons from International Jurisdictions.*

GLOSSARY OF TERMS

APPA:	Atmospheric Pollution Prevention Act No. 46 of 1965
DEAT:	Department of Environmental Affairs and Tourism
DME:	Department of Minerals and Energy
EMCA:	Environmental Management Co-operation Agreement
NEMA:	National Environmental Management Act No. 107 of 1998
NGO:	Non-governmental Organisation
FCCC:	United Nations Framework Convention on Climate Change

PART ONE - INTRODUCTORY

1. INTRODUCTION TO THE TOPIC

1.1 Background

History demonstrates that the actions thought necessary for dealing with the phenomenon of global climate change are typically driven by national governments, rather than the private sector. It has been commented that "only through decisive action by single countries or coalitions of countries can real progress be made in international climate change policy".[1] In this context the BASIC project seeks *inter alia* to strengthen capacity in participant countries, particularly the capacity to undertake analytical work required to identify greenhouse gas mitigation mechanisms best suited to the prevailing national circumstances, interests, priorities and legal regimes. The BASIC countries are suitable subjects for such intervention because they include some of the largest United Nations Framework Convention on Climate Change (FCCC) Non Annex-I emitters of greenhouse gasses in the world.

South Africa, the focus of this paper, is the largest emitter of greenhouse gases on the African continent and "boasts" one of the most carbon emission-intensive economies in the world, "annually emitting 7 tonnes of carbon dioxide *per capita*", due largely to the very high dependence on coal for primary energy production.[2] Carbon dioxide is also the country's most significant greenhouse gas, contributing to more than 80% of total emissions, while the energy sector generates between 89% and 91% of total carbon dioxide emissions. [3]

1.2 South Africa's international response to climate change

South Africa's international response to the issues associated with climate change is in accordance with the framework established by the FCCC and the Kyoto Protocol. The country ratified the FCCC on 27 November 1997, but is not included on Annex I. Consequently South Africa is an FCCC Non-Annex I Party with a "common but differentiated" responsibility to comply with the commitments imposed on all Parties to the FCCC. South Africa ratified the Kyoto Protocol on 31 July 2002. As an FCCC Non-Annex I Party, South Africa has not taken on a quantified emission limitation and reduction commitment in terms of Article 3 of the Kyoto Protocol.

Notwithstanding the absence of a quantified emission limitation and reduction commitment, South Africa's national greenhouse gas emissions profile clearly suggests

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[1] Droge, S., Trabold, H, Biermann, F., Bohm F., and Brohm, R., *National Climate Change Policy – Are the New German Energy Policy Initiatives in Conflict with WTO Law?* German Institute for Economic Research, Discussion Paper 374, Berlin, October, 2003, at 4.

[2] Department of Minerals and Energy, *Energy Efficiency Strategy of the Republic of South Africa*, March 2005, at 10, www.dme.gov.za

[3] *South Africa's Initial National Communication under the United Nations Framework Convention on Climate Change*, Department of Environmental Affairs and Tourism, 2004, at v.

that the country is under a "commonsense", if not a moral, obligation to take action to reduce it greenhouse gas emissions. In addition, the lack of a Kyoto-delimited national commitment does not mean that South Africa has no legal obligation to take action towards mitigating its impact on global climate change. As a Party to both the UNFCCC and the Kyoto Protocol South Africa has committed itself to taking action in this regard, including formulating and implementing mechanisms to address anthropogenic emissions by sources of certain greenhouse gasses.[4]

2. STRUCTURE OF THE PAPER

2.1 Objectives

Against the background described above the objectives of this paper are:

- Part One: to introduce the topic and to describe the parameters of the paper;

- Part Two: to assess the extent of South Africa's commitment to implement greenhouse gas mitigation mechanisms, to consider indicators for the scope of such mechanisms in the international climate change regime and to present the broad architecture of South Africa's prevailing environmental legal regime; and,

- Part Three: in light of the abovementioned discussion, to investigate the potential within certain South Africa environmental statutes to serve as vehicles for the implementation of greenhouse gas mitigation mechanisms, to make recommendations in this regard and to draw final conclusions.

This paper is part of a trio of papers, all drafted under the BASIC aegis, providing a country perspective on a range of issues associated with South African actions aimed at combating climate change. Certain points of conflation between the three papers are referenced in the body of this paper. The other two papers are:

- Palmer Development Group, *Policy Coherence and institutional coordination: clarifying institutional responsibilities*, BASIC, July 2006.

- Rosenberg, S., *A "prompt start" for the CDM? Lessons from early experiences from South Africa*, BASIC, May 2006.

For a further South African and international dimension in regard to greenhouse gas mitigation mechanisms, this paper may be read in conjunction with the Companion

[4] For clarity this paper uses the terms "greenhouse gas mitigation mechanisms" or "mechanisms" to describe the legislative vehicles that the authors have defined within South African legislation. This term is used extensively at Part Three, below. The term "measures" has a specific meaning within the international climate change legal framework and the authors have, therefore, tried to avoid using it to describe the separate, legislative actions, described at Part Three below, and which, it is submitted, may be used to achieve greenhouse gas mitigation. It should also be noted that the Air Quality Act, discussed at Part Three, below, also uses the term "measures".

Resource hereto, namely, IMBEWU, *Greenhouse gas mitigation mechanisms: Relevant South African Policy & Strategy and Lessons from International Jurisdictions*, Companion Resource to: Warburton, C., Gilder, A., and Shabalala, S., Basterfield, M., "Options for greenhouse gas mitigation mechanisms in South African Legislation", BASIC, 2006.

2.2 **Parameters**

The following considerations have informed the parameters of this paper.

2.2.1 Renovation of existing institutions and legislation

The abovementioned objectives of Part Three of this paper do not imply that South Africa does not, currently, take any action to mitigate harmful emissions. On the contrary, certain limitations on point source emissions of "noxious and offensive gasses" have been in operation for some time. However, the country has never regulated emissions of any of the greenhouse gasses addressed by the Kyoto Protocol – with the exception of methane in the context of mine health and safety.[5]

An example of an existing mechanism may be found in the conditions imposed by Registration Certificates issued pursuant to Section 9 of the Atmospheric Pollution Prevention Act No. 46 of 1965 (APPA). Registration certificates are required to undertake one of the "scheduled processes" as found on the second schedule to APPA. Such conditions typically provide for a limitation on the quantitative emissions produced during the undertaking of the specified process. Such actions are, however, generally recognized as having been inadequate to control emissions to the degree necessary to prevent degradation of the environment (including contributing to climate change), and damage to human health. Consequently APPA is currently in the process of being replaced by the National Environmental Management: Air Quality Act No. 39 of 2004, a process that will take some years to complete. The Air Quality Act, which is discussed more fully at Part Three, below, seeks *inter alia* to introduce ambient air quality standards into South African air quality control legislation for the first time, in addition to retaining point-source control of emissions.

While appropriate renovation and/or remediation of perceived weakness in the existing institutional or legislative framework is likely to contribute to the mitigation of South African's greenhouse gas emissions, it is not the purpose of this paper to address such weaknesses or to make recommendations in that regard.[6] Instead this paper seeks to

[5] The basket of Kyoto greenhouse gasses: Carbon dioxide (CO_2), Methane (CH_4), Nitrous oxide (N_2O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), Sulphur hexafluoride (SF_6)

[6] This is partly due to the fact that the necessity for such action has already been recognized by government and certain actions, including the national law reform programme discussed below, are underway to address such weaknesses. It is not the purpose of this paper to replicate efforts already in progress. Some specific actions already undertaken to address perceived weaknesses in the current institutional or legislative framework include: (i) a restructuring of the electricity generation industry intended *inter alia*: to encourage the entry of independent power producers and non-fossil fuel generated power into the South African generation pool and to reduce the size of power-utility Eskom's monopoly on generation, distribution and

assess the extent of South Africa's international commitments to implement greenhouse gas mitigation mechanisms, and to make recommendations for the use of existing legislative provisions as potential vehicles to implement such mechanisms.

2.2.2 Not a comprehensive study

It follows from the above that the recommendations made herein do not constitute a comprehensive programme for the implementation of greenhouse gas mitigation mechanisms. Such wider study is beyond the ambit of this paper - although it is possible that this paper might form the foundation for further research in this regard. Rather, this paper seeks to highlight the potential for climate change-related lawmaking that exists within certain environmental South African legislation. In essence, therefore, this paper is a "cherry-picking" exercise, in that only a limited number of appropriate legislative provisions were analysed.

2.2.3 Existing *environmental* legislation

Given the scope and complexity of the South African statute book this paper, in the main, limits itself to a consideration of environmental legislation. This means that potential legislative vehicles deriving from other specialist legal disciplines, e.g., commerce or taxation, are not considered in detail. Certain examples are simply mentioned insofar as they may contain mechanisms for achieving environmental objectives.

2.2.4 Policies and Strategies

Certain national policies and strategies, some containing the legislative kernels for the implementation of greenhouse gas mitigation mechanisms, have emerged from the DEAT and general national law reform processes.[7] These are, therefore, obliquely relevant to the objectives of this paper in that they have the potential to influence the shape of future legislation pertinent to greenhouse gas mitigation. Reporting on such policies and strategies was therefore considered to be important in the context of this paper's objectives. However, as the timeframes for the implementation of the policies and strategies is unclear, their recommendations remain nascent and they have not been closely analysed. They are mentioned here as possible indicators of future legislative

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supply; and, (ii) the implementation of standards for energy efficient buildings. In addition various studies have been undertaken and recommendations made in regard to appropriate improvements to the existing legislative and institutional framework. For example, a study produced under the auspices of the Department of Minerals and Energy's (DME) *Capacity Building in Energy Efficiency and Renewable Energy (CaBEERE)* programme (2004 and 2005) and entitled: *Legal Issues and Problems Preventing the uptake of Renewable Energy into the Grid*, makes certain specific recommendations for amendments to the existing legislative framework for power generation in South Africa. These recommendations seek *inter alia* to provide for a greater uptake of renewable energy into the national power grid which, in turn, is likely to have the effect of reducing greenhouse gas emissions. The *CaBREERE* study may be downloaded from www.dme.gov.za

[7] Note the distinction drawn between the DEAT law reform process, which has resulted in the promulgation of the environmental legislation (discussed at Part Three), and the wider, national, law reform process, of which the DEAT initiative is a component. Legislation and policy deriving both from the DEAT process and the national process are relevant for the purposes of this paper.

trends and, so as not to burden this paper, have been cursorily discussed in the Companion Resource hereto.

Part Two of this paper considers aspects of the international climate change regime relevant to greenhouse gas mitigation mechanisms.

PART TWO – LEGAL REGIMES

3. "MEASURES": INTERNATIONAL COMMITMENTS AND SCOPE

3.1 International commitments with regard to "measures"

The submission, made at section 1.2, above, that South Africa is committed to undertake certain greenhouse gas mitigation measures is rooted in various provisions of the FCCC and Kyoto Protocol. This submission is discussed in this section. The term "measure" can be thought of as referring *to legislative, administrative or other means through which a predetermined course of action may be implemented*.[8]

3.1.1 Framework Convention on Climate Change

FCCC, Article 4.1(b), provides that "(all) Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, shall:

> (a) …;
>
> (b) Formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, …;"[9] (our emphasis).

A number of limitations have been noted in regard to the above, seemingly unequivocal, statement of commitment. Firstly, it has been commented that the *chapeau* of FCCC Art. 4.1 creates a "highly differentiated regime as it means that there is no common standard that is being laid down, leaving each Party, in effect, to determine its own level of implementation [of its commitments]".[10] Secondly, FCCC Article 4.7 is relevant to

[8] The italicized words are an adaptation of a definition of "measure" used in Yamin, F., and Depledge, J., *The International Climate Change Regime – A Guide to Rules, Institutions and Procedures*, Cambridge, 2004, at 107.

[9] FCCC, Art. 4.1(b).

[10] Yamin and Depledge, s*upra.*, at 93. The question of assessing and reporting on the climate change commitments of developing countries is particularly important in the current debate on the future of the climate change regime. Elements of *The Sao Paulo Proposal for an Agreement on Future International Climate Policy*, August 2006, prepared under the BASIC aegis, and some of the discussion at the August 2006 BASIC Workshop (*Future International Climate Policy*, Sao Paulo, 7-9 August 2006), considered

developing country commitments in that it provides that "(the) 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 under the Convention related to financial resources and transfer of technology and will take fully into account that economic and social development and poverty eradication are the first and overriding priorities of the developing country Parties".[11] Yamin and Depledge note that commentators are divided in their opinions on the implications of FCCC Article 4.7 for the commitments of developing country Parties. Some argue that such Parties retain a legal obligation for their commitments but cannot be expected fully to comply with such commitments if developed country Parties have not complied with their financial and technological obligations. Others argue that Article 4.7 has no implications for the legal responsibility of developing country Parties.

The implications of the above, for South Africa, are that while it may be argued that the country appears to have committed itself *inter alia* to formulate a national programme containing greenhouse gas mitigation measures this commitment is not universally and unequivocally accepted as such. Yamin and Depledge describe Article 4.1(b) as "…essentially a qualitative commitment, albeit one that is highly significant because it leads to establishment of institutional processes charged with the important function of identifying, implementing and assessing measures to mitigate and adapt to climate change". [12] In addition, as abovementioned, monitoring of a country's level of compliance with its FCCC Article 4.1(b) commitment is, arguably, left up to the country itself. This suggests that failure to comply with the commitment is unlikely to have any serious repercussions under the current regime. Notwithstanding the looseness of the commitment, however, it is submitted that the moral or "commonsense" obligation referred to at section 1.2, above, is sufficient impetus for the implementation of greenhouse gas mitigation measures, and that the lack of certainty with regard to the extent of its FCCC commitment should not be regarded as a reason for South Africa's delaying the development and implementation of a national programme of measures. In this context it is interesting to note that *A National Climate Change Response Strategy for South Africa*, discussed at section 3.3.1, below, simply accepts, without demure or discussion, that the country is under an obligation to implement greenhouse gas mitigation measures.[13]

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inter alia: (i) the issue of the "type" of future commitments that developing countries may be prepared to undertake; (ii) how to assess progress towards achievement of such commitment; (iii) whether such achievement should be regarded as contributing to compliance with FCCC commitments; and, (iv) whether such compliance should lead to benefits flowing to developing countries under the climate change regime.

[11] UNFCCC, Art. 4.7

[12] *Supra*. at 95. Note that FCCC Article 4.1 imposes a number of commitments on country Parties. For convenience this paper focuses on the commitment relating to greenhouse gas mitigation "measures', and particularly the potential for their implementation through legislation. The discussion of other commitments of FCCC country Parties, e.g., those relating to adaptation, while no less important, is not within the scope of this paper.

[13] DEAT, *A National Climate Change Response Strategy for South Africa*, September 2004, at 9. Please see generally section 3.3, below.

3.1.2 Kyoto Protocol

Article 10(b) of the Kyoto Protocol, echoing FCCC Article 4.1(b), provides that all Parties shall "(formulate), implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change". Yamin and Depledge note that the *chapeau* of Article 10(b) reproduces "almost verbatim" the text of FCCC Article 4.1(b) and comment that "…the Kyoto Protocol reinforces the differentiated structure, and conditionalities, of the FCCC".[14] It is therefore submitted that while the Kyoto Protocol provides some perspective, discussed below, on the scope of greenhouse gas mitigation measures, it does not add to, or subtract from, the (equivocal) FCCC Article 4.1(b) commitment in regard to measures.

3.2 **Scope of "measures"**

Yamin and Depledge indicate that "(implementing) [FCCC] Article 4.1(b) requires each Party to utilize or establish domestic policy processes with sufficient institutional, administrative and legal capacity to formulate and implement their national programmes, to have ongoing oversight of such programmes, and to ensure their integration with a broader range of economic, social and development planning".[15] Formulation of a national programme is also likely to require a number of particular actions, including:

- undertaking, against the background of sustainable development, a strategic assessment of mitigation options; and,

- considering the associated costs and benefits of implementing various options, particularly as measured against the potential cost from damage caused by climate change.

In formulating its programme of measures, an FCCC Party might also wish to seek some guidance on the scope of such a programme. Limited guidance with regard to the specific content of national programmes may be found in Article 10(b)(i) of the Kyoto Protocol which provides that such programmes "…would, *inter alia*, concern the energy, transport and industry sectors as well as agriculture, forestry and waste management…".[16] More substantial guidance in regard to the scope of measures may be found in the guidelines on initial national communications from Annex I Parties, which contain detailed information on mitigation programmes, and in certain resources devised to assist Parties in implementing their commitments relating to national programmes.[17]

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[14] *Ibid*., at 94.
[15] *Ibid*, at 96.
[16] Yamin and Depledge, at 96, comment, I regard to Article 10(b)(i), that the use of the auxiliary verb "would", rather than "shall" or "should" ensures that Article 10(b)(i) does not create any commitments additional to those in the FCCC.
[17] Yamin and Depledge at 98, list the following resources: *Technologies, Policies and Measures for Mitigating Climate Change* (IPCC Technical Paper I), *Greenhouse Gas Mitigation Assessment: A Guidebook by the United States Country Studies Programme*, *Climate Change 2001: Mitigation* (Contribution of Working Groups III to the Third Assessment Report of the IPCC).

3.2.1 The potential offered by FCCC Article 4.2(g)

An interesting semantic distinction may be traced between the commitments of all FCCC Parties and those of FCCC "developed country Parties and other Parties included in Annex I". FCCC Article 4.2(a) provides that each of the latter "…shall adopt national policies and take corresponding measures on mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases…" (our emphasis). By contrast FCCC Article 4.1(b) provides that all FCCC Parties shall "(formulate), implement, publish and regularly update national … "programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol…" (our emphasis). In short Annex I country Parties are committed to adopting "policies and measures" the purpose of which is to "limit" greenhouse gas emissions, while the commitment of all FCCC country Parties (including Non-Annex I Parties) is simply to take certain actions with regard to "programmes" that "address" a specified set of greenhouse gases, i.e., those not controlled by the Montreal Protocol. The term "addressing" is not defined in the FCCC although the relevant meaning, as used in of Article 4.1(b) can be taken to be "direct one's attention to", while that of "limiting" (also undefined in the FCCC), as used in Article 4.2(a), can be thought of as "imposing a restriction". [18] It is therefore submitted that the term "addressing" imposes a less onerous obligation on FCCC developing country Parties, in regard to greenhouse gas mitigation measures, than the term "limiting" imposes on FCCC developed country Parties. In addition it is very unlikely that the term "addressing" would include an obligation to devise and promulgate legislation to mitigate climate change.[19]

This last point is relevant because FCCC Article 4.2(g) provides that a Party not included in Annex I, "…may, in its instrument of ratification, acceptance, approval or accession [of/to the FCCC], or at any time thereafter, notify the Depositary that it intends to be bound by subparagraphs (a) and (b)…".[20] It would thus be open to South Africa to make an FCCC Article 4.2(g) notification and, in so doing, officially elevate the level of its FCCC commitment with regard to measures, and to inject more specificity into the scope of such measures. South Africa has not made a notification in terms of FCCC Article 4.2(g), and the possible consequences of such notification, for the country's commitments in regard to measures, consequently remain moot.[21]

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[18] *Oxford Paperback Dictionary and Thesaurus.*

[19] In this context it is interesting to note the recent appearance of the *California Global Warming Solutions Act* (Assembly Bill 32) which operates so as to add Division 25.5 to the California Health and Safety Code; and movement within the United Kingdom in regard to the mooted *Climate Change and Sustainable Energy Bill*.

[20] FCCC Article 4.2(b) provides for reporting on policies and measures as well as on resulting, projected anthropogenic emissions by sources and removals by sinks of greenhouse gases not controlled by the Montreal Protocol.

[21] An interesting anomaly would arise in the event that South Africa made an FCCC Article 4.2(g) notification. The anomaly relates to the Kyoto Protocol definition of "Party included in Annex I" which means "a Party included in Annex I to the Convention, as may be amended, or a party which has made a notification under Article 4, paragraph 2(g), of the Convention" (our emphasis). The implication of this definition seems to be that, in elevating its FCCC commitment with regard to "measures" through Article 4.2(g) notification by the act of making such notification the country automatically assumes Annex I status

Perhaps this semantic distinction - which seems from the phrasing of the FCCC to have been deliberate – may not be particularly relevant to South Africa's practical compliance with its FCCC Article 4.1(b) commitments. This is because, in the formulation of relevant strategy and legislation, South Africa appears to be developing a framework that may, in its implementation, take the country beyond its existing commitments. Please see the discussions that follow below and the information in the Companion Resource hereto, both of which provide perspectives on the South African's actions in this regard.

3.3 **South Africa's level of compliance with its FCCC Article 4.1(b) commitments**

3.3.1 Section Introduction

There is no comprehensive statement describing the full range of South African government actions, across all departments and cross-cutting issues, currently being undertaken to address climate change. It is, however, possible to gain an impression of relevant interventions, both current and proposed, from a perusal of various relevant documents, including the legislation described at Part Three, below, and the policies and strategies mentioned at Part I of the Companion Resource hereto. While some of the information in regard to relevant interventions is latent within the abovementioned legislation, policies and strategies, the two documents considered in this section contain explicit reference to South Africa's progress towards complying with its international climate change commitments, including commitments with regard to measures. Certain elements of these documents are therefore discussed below, in addition to their being described in more detail in the Companion Resource to this paper.

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under the Kyoto Protocol. Presumably this would also imply that it should assume a quantified emissions limitation and reduction commitment, requiring the calculation of an assigned amount. The South African government's stated position is that it is unprepared to assume such a commitment, making it unlikely that South Africa would make an FCCC section 4.2(g) notification - although the DEAT Minister (at COP11/MOP1, in Montreal in November 2005), indicated that the country was prepared to discuss the assumption some level of commitment, without being specific as to the form of such commitment. It is possible that this automatic enrolment on Annex I, as the result of an Article 4.2(g) notification, will discourage Non-Annex I Parties from making such notification and elevating its FCCC commitment. Other complications are also likely to arise in the event of South Africa's making an Article 4.2(g) notification. For example, significant progress has been made in establishing the institutions and infrastructure required for the implementation of CDM projects. While it would still be open for South Africa, should it assume Annex I status, e.g., via an FCCC section 4.2(g) notification, to participate in the Kyoto flexibility mechanisms - through Joint Implementation and Emissions Trading – the assumption of such status would mean that the national CDM regime may become redundant. There is greater advantage for a country to participate in the CDM, rather than Joint Implementation, *inter alia* because participation the latter mechanism implies a reduction in a country's budget of Assigned Amount Units, whereas there is no current limitation on Certified Emissions Reductions generated from CDM projects in developing countries. On this last point it may be noted that *The Sao Paulo Proposal for an Agreement on Future International Climate Policy*, August 2006 and November 2006, has been developed under the BASIC aegis. The proposal postulates a future climate change regime which *inter alia* imposes a limit on the number of Certified Emissions Reductions that may be transferred by a developing country. Upon reaching this limit the developing country would be expected to "graduate" to assuming a quantified emissions limitation and reduction commitment.

3.3.2 A National Climate Change Response Strategy for South Africa

DEAT is designated as the lead agent for South Africa's response to climate change and has produced *A National Climate Change Response Strategy for South Africa*[22] (the Climate Change Response Strategy), which sets out, in a very broad manner, government's (mainly DEAT's) notion of how to deal with the challenge. In discussing the integration, into government policy and action, of appropriate responses to climate change the Climate Change Response Strategy recognizes the "cross-cutting" nature of the phenomenon and consequent ramifications for diverse activities across a variety of government departments.[23] To be effective these activities, including the development of legislation, requires co-ordination and co-operation between government departments. The Climate Change Strategy admits that awareness within government of the likely impacts of climate change, and the necessary actions to combat such impacts, is "somewhat limited", and anticipates a possible situation where officials of "other departments" might come to view such actions as working against national development priorities.[24] Lack of government capacity to develop and implement the required activities is identified as a further hurdle to South Africa's effective participation in efforts to counter global warming.

The Climate Change Response Strategy contains an ambitious list of "key actions" that DEAT considers necessary for mitigating and combating climate change and which, collectively, are described as a "national climate change response programme".[25] Not unexpectedly, the key actions contain interventions that are likely to result in the mitigation of greenhouse gas emissions and which can, therefore, be regarded as mitigation measures.[26] While development of the Climate Change Response Strategy is a positive step, comprehensive implementation thereof seems to be lacking. The Climate Change Response Strategy provides very little guidance on necessary interventions for the practical realization of the key actions. No official indication has been provided on progress towards achieving the key actions since the Climate Change Strategy's appearance in 2004, and the document has not been updated. Concrete signs of implementation of the key actions are few and there are some indications that certain of the key actions have either been removed from the national agenda or are, at least, indefinitely postponed.[27]

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[22] DEAT, *A National Climate Change Response Strategy for South* Africa, September 2004. Discussed in more detail at: Part I, section 5 of the Companion Resource to this paper.

[23] Yamin and Depledge, at 99, comment in detail on the question of integration of measures into wider sustainable development concerns, while Palmer Development Group, *Policy coherence and institutional coordination: clarifying institutional responsibilities*, BASIC, July 2006, provides a South Africa-specific discussion of the integration and coordination of actions to combat climate change into government institutions.

[24] *A National Climate Change Response Strategy*, at 10.

[25] *Ibid*, at 35.

[26] More detail on the "key actions" is provided in Part I of the Companion Resource. Interventions listed as "key actions" include: funding of "climate change projects", implementing the objectives of the Renewable Energy White Paper (2003) and the Energy Efficiency Strategy, and optimising waste management resources to minimise emission of greenhouse gases.

[27] For example key action (j) is "(harnessing) the efforts of all stakeholders to achieve the objectives of the Government's White Paper on Renewable Energy (2003)…". The Renewable Energy White Paper sets a

Included among the "key actions" are the establishment of the Designated National Authority (DNA) for the Clean Development Mechanism; and, using the ongoing law reform process to ensure that climate change issues are provided for in legislation. A stated legislative intention is to deal with greenhouse gas emissions and inventories within the framework of the National Environmental Management: Air Quality Act No. 39 of 2004 (the Air Quality Act), which was still in Bill form at the time of drafting of the Climate Change Strategy.

Tangible evidence that the Climate Change Strategy is not simply a theoretical exercise can be found in the establishment and operation of the DNA, in the promulgation of the Air Quality Act[28] and in certain other government actions.[29] It is anticipated that implementation of this Act will require some years to complete. In addition, one of the threads running through the law reform process, discussed at section 4, below, is a concern with climate change issues. The Climate Change Response Strategy notes that the White Paper on Integrated Pollution and Waste Management (2000), the White Paper on a National Water Policy for South Africa (1997) and the National Water Resource Strategy all reference, or directly refer to, climate change. Furthermore, all of the legislation analysed at Part Three, below, for its potential as a vehicle for the implementation of greenhouse gas mitigation mechanisms, is a product of the national law reform process.

3.3.3 South Africa's Initial National Communication under the FCCC

In a sense *South Africa's Initial National Communication under the United Nations Framework Convention on Climate Change* (2004) (the Initial National Communication) is somewhat internally inconsistent. One section of the Initial National Communication, presenting "policies and measures" for limiting the impact of climate change for a number of economic sectors, contains information with regard to policies and measures

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target of 10 000 gigawatt-hours of renewable energy contribution to final energy demand by 2013. However, some commentators have remarked that achieving this target is increasingly unlikely as the national power utility (Eskom) engages with the problem of expanding its generation capacity to a greater degree and at a faster rate than was originally anticipated. The utility's expansion will, in the main, rely on the use of coal-based power generation, e.g., the de-mothballing of three 1980s-era coal-fired power stations while seeking to manage the peaks and troughs in electricity demand and the expansion of the Demand Side Management programme (which depends on fossil-fuel based power generation). The *rationale* for these actions is that coal technology is "tried and tested" and South Africa has significant coal reserves. It may also be noted that Eskom is driving a number of initiatives, including: (i) those based on renewable energy, e.g., a 100 MW Concentrating Solar Power Plant which is currently in the environmental impact assessment phase; and, (ii) the development of certain nuclear options, e.g., the Pebble Bed Modular Reactor, and the building of a new plant based on more traditional nuclear technologies. For further information in regard to actions being undertaken by Eskom see: WBCSD, *Case Study: Eskom (Energy Efficiency)*, July 2006.
http://www.wbcsd.org/plugins/DocSearch/details.asp?type=DocDet&ObjectId=MTkwMTc

[28] For further discussion of the establishment and operation of the DNA See: Rosenberg, S, *A "prompt start" for the CDM? Lessons from early experiences from South Africa*, BASIC, May 2006.

[29] A Memorandum of Understanding in regard to developing emissions inventories was concluded between government and business during the course of the first South African National Climate Change Conference (October 2005), but no further developments in this regard has been reported recently.

currently being, or soon-to-be, implemented.[30] The document indicates that national priorities were considered in the development of the policies and measures described, including: alleviation of poverty; provision of basic services for all South Africans; equity; employment creation; and, economic growth. The economic sectors include: energy; transport; mining; agriculture; forestry; health; water resources and biodiversity. While it is clear that there is a marked paucity of policies and measures for some of the sectors, others are characterized by a number of existing and varied interventions aimed at greenhouse gas mitigation, including legislative and policy-drive interventions.[31]

By contrast, another section of the document, which presents and analyses a number of mitigation and adaptation strategies across a number of sectors and against a variety of criteria, comments that "(due) to national priorities such as poverty alleviation, providing access to basic facilities and health issues such as AIDS, as well as financial and technological limitations, South Africa's current approach to specific GHG mitigation measures is only at an exploratory phase" (our emphasis).[32] Notwithstanding this apparent contradiction the Initial National Communication, as is *inter alia* required of such a document, presents a broad range of information on South African greenhouse gas mitigation measures, both nascent and more mature.

3.3.4 Assessing South Africa's compliance with its FCCC Article 4(1)(b) commitments

As abovementioned there is no comprehensive statement of the full range of South African government action towards mitigating climate change. However, if one were to attempt to assess South Africa's current level of compliance with its FCCC Article 4.1(b) commitment, namely to formulate, implement, publish and regularly updating national programmes containing measures to mitigate climate change by addressing anthropogenic emissions of all greenhouse gases not controlled by the Montreal Protocol, one might do so by way of the following matrix.

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[30] DEAT, *South Africa's Initial National Communication under the United Nations Framework Convention on Climate Change*, 2004, at 42.It is interesting to observe that while the Climate Change Strategy, in discussing South Africa's international obligations (at 9, section 3.4), refers (correctly) to the commitment to formulate "programmes to mitigate climate change", and avoids the term "policies and measures". By contrast the Initial National Communication describes certain "…policies and measures for limiting the impact of climate change" (at 40). The question arises of whether the term "policies and measures" is used deliberately in the Initial National Communication to indicate that South Africa's actions in this regard are intended to exceed its FCCC Article 4.1(b) commitment. It is submitted that this unlikely because it seems sensible, if this was the intention, for such intention to be explained. There is no such explanation in the Initial National Communication. The alternative is that the term is used simply as a convenient, collective label for categories of actions undertaken or contemplated - which seems more likely. The latter usage might be construed as careless in light of the distinction between "programmes" and "policies and measures" at section 3.2.1, above.

[31] For example the information provided on the energy sector refers to the promotion of a "no regrets" energy policy, the requirements of the White Papers on Energy Policy and Renewable Energy and a process, already initiated by the National Electricity Regulator, to develop an appropriate regulatory framework for non-grid electrification.

[32] *South Africa's Initial National Communication under the United Nations Framework Convention on Climate Change*, at 49.

Minimum action required in terms of all FCCC Parties in terms of FCCC Article 4.1(b)	South Africa's compliance (Yes/No)
Formulate national programme	Yes – *inter alia* the Climate Change Response Strategy[33]
Implement national programme	Yes – partially (see generally the body of this paper)
Publish national programme	Yes
Regularly update national programme	No (although it should be noted that FCCC Article 4.1(b) does not provide an indication of what would constitute a "regular" update.

The important question that may be posed in light of the above assessment is: what mechanisms exist that may assist in achieving the broad objectives of the national programme to mitigate climate change?

The balance of this paper will consider certain mechanisms found within South African environmental legislation that may be utilized for this purpose.

4. SOUTH AFRICAN ENVIRONMENTAL LEGAL CONTEXT

4.1 Section Introduction

Certain broad parameters of the coalescing South African national environmental legal framework are relevant to this paper. This is because any legislative action that may flow from the recommendations made herein will, of necessity, be influenced by and subject to the *milieu* created by the Constitution of the Republic of South Africa Act (No. 108 of 1996). It is therefore necessary to contextualize the environmental legal architecture within which such recommendations would be implemented.

4.2 The "environmental right" in the Constitution

The Constitution is the supreme law of the country and enshrines a Bill of Rights which, in turn, introduces a so-called "environmental right" as a fundamental human right in South African law. Section 7(2) of the Constitution provides that the State must respect, protect, promote and fulfil the rights in the Bill of Rights while the "environmental right" provides that:

"24. Everyone has the right –

(a) to an environment that is not harmful to their health or well being; and

[33] It is submitted that the Climate Change Response Strategy, its "national climate change response programme", the realization of certain of the "key actions" and certain achievements of the national and DEAT law reform programmes provide support for the contention that South Africa is currently in compliance with the letter of its FCCC Article 4.1(b) commitment.

(b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that -

(i) prevent pollution and ecological degradation;
(ii) promote conservation; and

(iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."

Section 24(b) of the Bill of Rights has been interpreted as mandating government to enact legislation which "must" achieve the goals of environmental protection, the prevention of pollution and ecological degradation and the promotion of conservation and sustainable development.[34]

4.3 **The DEAT law reform process**

In recent times government has sought to comply with the legislative mandate contained in Section 24 of the Constitution and to address fragmented environmental policy and legislation through an environmental law reform process driven by DEAT (the DEAT law reform process).

The DEAT law reform process is generally aimed at:

- overhauling important general environmental legislation, resource and sectoral legislation; and,

- introducing new environmental legislation and policy documents concerning important aspects relevant to environmental management.

Substantial change has been introduced into South African environmental legislation as a result of DEAT's efforts and the notion of sustainable development permeates the emerging environmental legal regime as the new, national philosophy of environmental governance. Some of the "changes" mentioned have the potential significantly to impact on greenhouse gas emitting industries and are important for the purposes of this paper.

The most important environmental statute to emerge in recent years is the National Environmental Management Act No. 107 of 1998 (NEMA) which came into operation on 29 January 1999. NEMA contains a multi-faceted definition of "sustainable development" and provides the overarching framework for integrating sound environmental management into all development activities, including those that might result in greenhouse gas emissions, and for promoting co-operative environmental governance. Certain "National Environmental Management Principles" set the tone for NEMA's approach to environmental management by:[35]

[34] Glazewski, J., *Environmental Law in South Africa (First Edition)*, Butterworths, 2000, at 87.
[35] NEMA, Section 2.

- introducing into South African law certain international environmental law principles, e.g., the "polluter pays", "preventative" and "precautionary" principles;

- entrenching "cradle-to-grave" responsibility for actions that may affect the environment and sustainable development as a guiding environmental legal principle; and,

- confirming the state as the guardian of the national environment.

In the same way that the application of environmental legislation must be guided by section 24(b) of the Constitution, so too must such legislation be interpreted in the context of NEMA and the National Environmental Management Principles. The Principles, contained in NEMA Chapter One, apply to the actions of all organs of state that may significantly affect the environment and serve as a guide for the interpretation, administration and implementation of NEMA and any other law concerning the protection of the environment. [36] The factors are important for actions that may flow from the recommendations in regard to the drafting of new law made in this paper because such law must pay heed to the Constitution and NEMA.

Recent legislative activity has seen the promulgation of a number of statutes under NEMA's *aegis*. The names of these "new" environmental statutes typically include the prefix "National Environmental Management". Thus the National Environmental Management: Protected Areas Act No. 31 of 2004 and the National Environmental Management: Biodiversity Act No. 10 of 2004, have been promulgated to deal with a very broad range of conservation and biodiversity issues. The most recent addition to the list of NEMA-derived legislation is the National Environmental Management: Air Quality Act No. 39 of 2004 (the Air Quality Act).

A further feature of the "new" environmental legislation is the recurrent and specific reference therein to the particular statute's allegiance to NEMA. In the case of the Air Quality Act, for example, this is stated as follows:

> "5(1) This Act must be read with any applicable provisions of the National Environmental Management Act.
>
> 5(2) The interpretation and application of this Act must be guided by the national environmental management principles set out in section 2 of the National Environmental Management Act."[37]

4.4 **Section Conclusion and other relevant legislation**

The potential of certain environmental statutes, including those emerging from the DEAT law reform process, to provide greenhouse gas mitigation vehicles is explored below.

[36] Section 2(1)(e).
[37] National Environmental Management: Air Quality Act No. 39 of 2004, section 5(1) & 5(2).

However, for completeness sake it must be mentioned that the body of new legislation developing from the wider, national law reform process includes statutes that might not be environmentally focused, but which contain components that may be utilized to achieve an environmental end. An example of this type of statute is the Property Rates Act No. 6 of 2004 the objectives of which include regulating the power of municipalities to impose rates on property and providing for municipalities to implement a transparent and fair system of exemptions, reductions and rebates through their rating policies.
In the environmental context the Act excludes, from the obligation to pay municipal rates, land used for certain conservation purposes. For example, a section dealing with "impermissible rates" provides that a municipality may not levy a rate… "(on) those parts of a special nature reserve, national park or nature reserve within the meaning of the Protected Areas Act, or of a national botanical garden within the meaning of the National Environmental Management: Biodiversity Act, 2004, which are not developed or used for commercial, business, agricultural or residential purposes."[38] The Act also provides municipalities opportunity to encourage good practice in biodiversity management within their jurisdictions, by including in their rates policies:

- judicious exemptions for properties with threatened ecosystems that are appropriately conserved;

- rebates for property owners that invest in sound land management activities, such as regulated alien clearing and implementing fire control measures;

- penalties for properties not complying with environmental directives; and,

- allowing the property rates valuation system to reflect a reduction in property value if the land is encumbered by a conservation restriction.[39]

Following this conservation-focussed logic it is submitted that similar mechanisms might be utilised to incentivise greenhouse gas mitigation measures. It would be a relatively simple matter to introduce the following amendment which, for the purposes of this example, seeks to encourage landowners to implement the greenhouse gas mitigation potential of Clean Development Mechanism projects:

> ***Other impermissible rates***
>
> *Section 17(1) A municipality may not levy a rate –*
> *(a)…;*
> *(j) on a property [alternatively on the first 30% of 50% of the value of a property] on which a Clean Development Mechanism Project, which has been registered with the Executive Board, is being implemented; or a property on which a project is being implemented, which is in compliance with an*

[38] Property Rates Act No. 6 of 2004, Section 17(1)(e).
[39] Botha, M., *Environmental Analysis of the Property Rates Act No. 6 of 2004*, Botanical Society Conservation Unit, August 2004.

Environmental Management Cooperation Agreement, made in terms of section 35 of the National Environmental Management Act, the object of which Agreement is the reduction of greenhouse gas emissions.

To complete the logic of this proposed amendment a further amendment introducing, into the Property Rates Act, the definition of "greenhouse gas" contained in the Air Quality Act would be necessary. The proposed amendment is restricted to registered Clean Development Mechanism projects and to projects with the object of reducing greenhouse gas emissions that comply with the terms of an Environmental Management Co-operation Agreement the object of which is the reduction of greenhouse gases. This restriction is intended to ensure that the land benefiting from the proposed amendment includes *bona fide* projects with verifiable greenhouse gas emissions reductions. The potential for Environmental Management Co-operation Agreements made in terms of NEMA as greenhouse gas mitigation measures is explored in Part Three of this paper.

The proposed amendment to the Property Rates Act uses a financial incentive to encourage a particular environmentally-friendly activity. For further information on draft proposals by the South African National Treasury on financial measures that may be applied in the interests of sound environmental management, please see the discussion of: *A Framework for considering market-based instruments to support environmental fiscal reform in South* Africa, in the Companion Resource hereto. Part Three, below, contains analysis of the potential for greenhouse gas mitigation measures within certain South African environmental statutes.

PART THREE – POTENTIAL "MECHANISMS" AND RECOMMENDATIONS

5. POTENTIAL LEGISLATIVE AND REGULATORY VEHICLES FOR THE IMPLEMENTATION OF GREENHOUSE GAS MITIGATION MECHANISMS

5.1 Section Introduction

As mentioned at section 3.2, above, certain resources have been devised to assist Parties to the FCCC in implementing their commitments relating to national programmes. A typical approach of such resources is to divide greenhouse gas mitigation measures into a number of categories, both for convenience and ease of understanding of their origin and application. A typical set of categories would be: regulatory, voluntary and market-based.[40] Certain country-specific research has also been conducted into, and recommendations made with respect to, greenhouse gas mitigation measures appropriate to the South African economy and domestic legal regime. The utility of the latter set of

[40] Part Two of the Companion Resource hereto, which presents Greenhouse Gas Mitigation Measures with reference to International Jurisdictions, uses the guidance found in *Technologies, Policies and Measures for Mitigating Climate Change* (IPCC Technical Paper I), and divides measures into these three categories.

research is that the points of departure of this paper and of such research are, essentially, congruent, namely, the identification of greenhouse gas mitigation measures appropriate to South Africa.[41]

In its approach to locating potential vehicles for greenhouse gas mitigation measures in certain South African environmental legislation Part Three is guided by the abovementioned categorizations, i.e., mechanisms proposed below fall into the internationally accepted categorizations. Note that, in order to avoid confusion with use of the term "measure" within the international climate change legal architecture, this paper uses the term "mechanism" when referring to the legislative that have been identified as having the potential to produce greenhouse gas emissions mitigation.

The following further considerations may be noted in regard to the internationally accepted categorizations of "measures":

- Operation: While the typical categorizations, e.g., into market-based, regulatory and voluntary measures, relies on the dominant characteristic of a particular measure, many measures actually depend on the operation of legislation and regulation for their efficacy. This is, perhaps, a simplistic point to make but this factor means that, often, a voluntary or market-based measure is as likely to rely on legislation and regulation for its operation as does a regulatory measure. For example, a mandatory "cap-and-trade" scheme may be considered as having a dual-character, namely a regulatory element and the market-based element which determines its categorisation. This duality is evident in the fact that permitted volumes of greenhouse gasses that may be emitted by participating entities (the "caps") are typically prescribed by regulation and the trading regime enshrined in legal instrument. However, such a scheme is typically categorized as "market-based" because, in the final analysis, it relies upon commodities trading, i.e., the market in greenhouse gas emissions reductions (the carbon market). In the same way, "pollution taxes" may be characterized as economic measures but rely, for their operation, on being prescribed in legislation or regulation. By contrast a measure that simply seeks to regulate the permissible volume of greenhouse gas emissions, e.g., by way of a permit condition, can be thought of as operating mainly within a regulatory context, and is typically characterized as such. The importance of this discussion for Part Three of this, legislatively-focused, paper is that while legislation and/or regulation are the vehicles for all of the greenhouse gas mitigation measures discussed below, including a measure that can legitimately be categorized as "voluntary", the measures themselves are spread across the generally recognized categorizations.[42]

[41] See, for example, the every comprehensive modelling and presentation of potential scenarios in: (i) Energy & Development Research Centre, University of Cape Town, *Policies and Measures for Renewable Energy and Energy Efficiency in South Africa*, Report prepared for: Sustainable Energy and Climate Change Partnership, March 2003; and, (ii) Energy Research Centre, University of Cape Town (Ed.: Winkler, H), *Energy Policies for Sustainable Development in South Africa – Options for the Future*, April 2006, www.erc.uct.ac.za

[42] The Energy Research Centre of the University of Cape Town (*Policies and Measures for Renewable Energy and Energy Efficiency in South Africa*), adds a fourth category, namely, "Institutional and Legal

- Comparative effectiveness: Research has also been conducted into the comparative effectiveness of the abovementioned categories of measures. The context for such investigation is the shift, in recent decades, from a largely regulatory (also described as a "command and control") approach to dealing with activities that impact on the environment, to one that relies more heavily on economic measures. The *rationale* for this change is identified as the reduction in compliance costs expected as a result of bringing the "creative power" of the market to bear on pollution control.[43] The finding of this research is that a "combination" of measures is usually more effective that the use of a single category of measure. One particular piece of research is interesting in that the perceived efficiency of economic measures was tempered by evidence that polluting firms preferred regulatory measures because of anticipated lower costs to the firm of implementing such measures. [44] The comparative effectiveness of measures was not considered in the drafting of Part Three hereof. Rather, in order to demonstrate the potential for the implementation of various categories of measures, latent or patent within a range of environmental legislation and regulation, relevant legislative and regulatory provisions were "cherry-picked" for their utility as vehicles for such implementation. The remainder of this section considers how certain existing environmental legislation can be utilised to achieve greenhouse gas emissions reductions.

5.2 **National Environmental Management Act No. 107 of 1998**

5.2.1 International environmental agreements

NEMA is the foundation of the South African environmental legal regime and has, as its underlying principle, the notion of environmentally sustainable development. NEMA also provides a potentially useful mechanism to give effect to South Africa's international environmental obligations. Chapter Six empowers the DEAT Minister to introduce legislation into Parliament, or to make such regulations as may be necessary, to give effect to an international environmental instrument to which the country is a Party. Such legislation or regulation may *inter alia* deal with the co-ordination of the implementation of the instrument; initiatives and steps regarding research, education, training, awareness raising and capacity building or on any matter necessary to give effect to the instrument.[45] NEMA defines the term "international environmental agreement" to mean

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Measures", to the regular trio of market-based, voluntary and regulatory. This fourth category includes: strengthening the institutional framework for energy efficiency, (developing) a renewable energy legislative framework and (undertaking) research, development, demonstration, awareness and education. The objective of such measures would be to contribute to the creation/enhancement of an enabling environment for the implementation of other categories of greenhouse gas mitigation measures.

[43] Energy & Development Research Centre, University of Cape Town, *Policies and Measures for Renewable Energy and Energy Efficiency in South Africa*, Report prepared for: Sustainable Energy and Climate Change Partnership, March 2003, at 87.

[44] Harrington, W and Morgenstern, R., D., *Economic Incentives versus Command and Control – What's the best approach for solving environmental problems?* Resources for the Future, Fall/Winter 2004, www.rff.org . This paper presents a comparative analysis of different combinations of measures, seeking to achieve a particular environmental end, across a wide rang of jurisdictions.

[45] Section 25(3). See more detailed discussion on powers of the Minister in section 5.3.2 below.

"any international agreement, declaration, resolution, convention or protocol which relates to the management of the environment".[46] It is submitted that both the FCCC and the Kyoto Protocol fall within this definition.
It is further submitted that NEMA provides an opportunity to address both climate change and sustainable development by the promulgation of legislation and/or regulation introducing the FCCC and/or Kyoto Protocol, or elements thereof, into South African statute law. There is national precedent for such legislative action. The World Heritage Convention has been introduced, in slightly modified form, into South African domestic law as the World Heritage Convention Act (No. 49 of 1999).
The above submission is founded on the abovementioned provisions of NEMA Chapter Six, the NEMA definition of "international environmental agreement', and the following further considerations:

- the climate change-context of this paper;
- South Africa's position as a Party to the FCCC and Kyoto;
- NEMA's requirement that the National Environmental Management Principles should provide guidance for the implementation of laws that may significantly effect the environment; and,
- the sustainable development-focus of the National Environmental Management Principles.

An early draft of the (then) Air Quality Management Bill seemed to promise just this situation by providing that certain international agreements both bound the Republic and formed part of the law of the land subject to the Constitution and the (then future) Air Quality Act.[47] The following international agreements were listed in a draft Schedule to the draft Bill: the FCCC; the Kyoto Protocol; the Vienna Convention for the Protection of the Ozone layer; and, the Montreal Protocol on Substances that Deplete the Ozone Layer. The draft Schedule went so far as to allude to relevant Protocols of the South African Development Community (SADC) as potential further instruments for inclusion. While the introduction of these instruments into a national legal regime would have been precedent-setting, the "gestation" of this instrument was a hotly contested and lengthy process and the abovementioned draft provisions did not find their way into the final statute.

One of the myriad changes affected during the abovementioned "gestation" was to the instrument's name which was finalised as the "National Environmental Management: Air Quality Act No. 39 of 2004". Echoes of the abovementioned draft provision and Schedule may be found in the section empowering the DEAT Minister to make Regulations. The Minister may make regulations, not in conflict with the Act regarding "any matter

[46] Section 1.
[47] The National Air Quality Management Bill, Draft 6.0, March 2002, Section 45.

necessary to give effect to the Republic's obligations in terms of an international agreement relating to air quality".[48] No such regulations have yet been made.

The Air Quality Act still offers significant scope for mechanisms limiting greenhouse gas emissions and is discussed in more detail below.

5.2.2 Environmental Management Co-operation Agreements

NEMA provides for the possibility of any person or community entering into a voluntary, contractual agreement with certain regulatory authorities for the purposes of promoting compliance with the National Environmental Management Principles. Such contractual agreements are called Environmental Management Co-operation Agreements (EMCAs). Due to the wide scope of the Principles the potential application of EMCAs is extensive.

The relevant section provides as follows:

"35. **Conclusion of agreements**

(1) The Minister and every MEC and municipality, may enter into environmental management cooperation agreements with any person or community for the purpose of promoting compliance with the principles laid down in this Act. (our emphasis)

(2) Environmental management co-operation agreements must –

(a) only be entered into with the agreement of –

(i) every organ of state which has jurisdiction over any activity to which such environmental management co-operation agreement relates;

(ii) the Minister and the MEC concerned;

(b) only be entered into after compliance with such procedures for public participation as may be prescribed by the Minister; and

(c) comply with such regulations as may be prescribed under section 45.

(3) Environmental management co-operation agreements may contain –

(a) an undertaking by the person or community concerned to improve on the standards laid down by law for the protection of the environment which are applicable to the subject matter of the agreement; (our emphasis)

[48] National Environmental Management: Air Quality Act No. 39 of 2004, section 53(a).

(b) a set of measurable targets for fulfilling the undertaking in (a), including dates for the achievement of such targets; and

(c) provision for –

(i) periodic monitoring and reporting of performance against targets;

(ii) independent verification of reports;

(iii) regular independent monitoring and inspections;

(iv) verifiable indicators of compliance with any targets, norms and standards laid down in the agreement as well as any obligations laid down by law;

(d) the measures to be taken in the event of non-compliance with commitments in the agreement, including where appropriate penalties for non-compliance and the provision of incentives to the person or community."

The above provision is of interest due to its status as a voluntary mechanism[49] and for its "social contract" nature. It also presents an interaction of private law with administrative law. This interaction increases the potential complexities likely to be encountered on implementation. Notwithstanding their having been on the statute books for some years, there are no signed EMCAs in operation in South Africa as yet. In June 2000 DEAT informally published a Discussion Document entitled *Environmental Management Co-operation Agreements: A Guide for their Design and Use*. However, this document was never finalised. The Guide recognises the increasing importance of "voluntary measures" such as EMCAs as part of the "optimal policy mix" which would include command and control regulatory measures, market based economic measures and civil society participation and "watchdog" type measures.

A more detailed exposition of these policy options is contained in a relevant journal article by Jonathon Hanks[50] who argues that, while there may be merit in the use of negotiated instruments to achieve environmental ends, this option should only be considered in conjunction with more traditional regulatory approaches. This view is premised on the notion that South Africa lacks a culture of political-institutional relationships.[51] Government impetus on the development of EMCAs seemed to dissipate in the early part of this decade, as is mentioned below.

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[49] The White Paper on Integrated Pollution and Waste Management for SA of 1999 makes reference to the need for voluntary agreements in pollution and waste management. This White Paper includes the specific goal of investigating the introduction of mechanisms to promote and administer voluntary agreements. It is also indicates that voluntary agreements could be used to achieve performance in excess of compliance with minimum standards and may include the setting pollution reduction targets and penalties for non-compliance with agreed targets.

[50] Hanks, J "Achieving industrial sustainable development in South Africa: What role for self regulatory and co-regulatory instruments?", 199*8, SAJELP*, 298**.**

[51] *Id.*

5.2.2.1 *The potential application of Section 35 of NEMA*

Note that EMCAs made in terms of NEMA may contain an undertaking, by the person or community concerned, "to improve on the standards laid down by law for the protection of the environment". Two comments are relevant in this context. Firstly, an EMCA providing for an improvement on the standards laid down would not have the effect of circumventing relevant legal requirements pertaining to the protection of the environment. Secondly, it would be pointless for an EMCA to commit the person or community concerned to complying with applicable environmental standards because this level of compliance may be regarded as the minimum required. Consequently the utility of the EMCA lies in its potential to be harnessed to *improving on* applicable environmental standards.

The question arises as to whether an EMCA may be used in circumstances where there are no current legal requirements regarding the particular issue that the EMCA seeks to regulate. This question is pertinent to greenhouse gas mitigation because there is currently no South African legal requirement to reduce such emissions. Given the range of environmental issues facing South Africa and the logistical problems relating to the monitoring of compliance with those current legal standards, EMCAs could provide a powerful tool for dealing with those instances where the legislation is silent, as in the instance of greenhouse gas emissions reductions.[52]

It is further submitted that the voluntary mechanism represented by EMCAs offers a solution to instances where industry is reticent to commit to environmentally beneficial actions due to the absence of applicable regulatory standards. A voluntarily negotiated EMCA, particularly one providing for appropriate incentive, as opposed to a statutory standard, could entice such industries to reduce the impact of their activities on the environment. While the Air Quality Act provides for ambient concentrations in air of certain substances,[53] these do not include greenhouse gasses. This Act defines greenhouse gas as "gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and re-emit infrared radiation, and includes carbon dioxide, methane and nitrous oxide". [54] The inclusion of this definition, perhaps, reveals government's intention to regulate greenhouse gas emissions in the future. Until such regulation appears, however,

[52] Section 53(b) of the Air Quality Act provides that the DEAT Minister may make regulations in respect of matters relating to environmental Management Co-operation Agreements to the extent that those agreements affect air quality. Given the very wide provisions of NEMA section 35 it is arguable that section 53(b) of the Air Quality Act is redundant. However, the Air Quality Act's statement of the applicability of EMCAs to the context of air quality management emphasises their utility in this regard. By extrapolation of this logic it is conceivable to contemplate EMCAs as vehicles for greenhouse gas mitigation measures. See below for further discussion of the utility of regulations under the Air Quality Act as such vehicles.
[53] Air Quality Act, Schedule Two.
[54] *Id.*, section 1.

it is submitted that EMCAs could be used to fill the current regulatory gap and to achieve urgent greenhouse gas mitigation.[55]

The attraction of such EMCAs, to industry, is likely to be enhanced if they were also coupled with appropriate incentive to encourage the required behaviour change. Inventive might be in the shape of reward for "early" or "additional" greenhouse gas emissions mitigation actions. Such EMCAs could include provisions relating to the monitoring and verification of compliance thus permitting such reductions to be quantified and credit for early action to be determined.

Hanks is of the opinion that voluntary agreements which rely on self-regulation of compliance may be criticised for a perceived lack of credibility of such regulation,[56] and submits that pressure from peers and the general public is unlikely to provide effective motivation for compliance. This submission is the basis for the further submission that EMCAs would need to include meaningful dissuasive sanction to deal with compliance failure.[57] A NEMA-derived EMCA, or indeed any voluntary environmental agreement, could avoid the abovementioned criticism by using those sections of the Act which contemplate inclusion of requirements for monitoring of, and reporting on, compliance with undertakings made, alternatively with verifiable indicators of applicable norms and standards and/or any legal obligations, independent inspection and verification. [58] It may be noted that these sections are not prescriptive, indicating the legislature's intention not to require the inclusion of monitoring and compliance provisions in EMCAs.

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[55] Care would need to be taken with the drafting of voluntary agreements. One aspect of the agreement that would need to be approached with caution relates to the fact that voluntary agreements seeking to achieve emissions reductions might provide for less stringent standards than would have been imposed if emission reductions were regulated. It is foreseeable that an industry party to such an agreement might, in the face of more stringent regulated standards (than those standards provided for in the voluntary agreement) making their appearance after the conclusion of the agreement, seek to argue that it may be held only to the lower standard, by virtue of their prior agreement with government. One way to obviate such a situation might be to include, in the voluntary agreement, a resolutive providing that the industry party's obligations remain in force only until such time as more stringent standards, than those provided for in the agreement, come into existence via regulation, or some other means. Other means could include acknowledgement, by an industry representative body, that more stringent standards constitute current environmental best practice for that industry. This issue is relevant to the Memorandum of Understanding (MoU) concluded between government and industry, committing industry to monitor its emissions (the MoU is mentioned in a footnote at section 3.3.2, above, and is referred to further, below). The Air Quality Act provides that the future "national framework" for achieving the objectives of the Act must establish standards for monitoring of emissions and data-collection necessary to assess compliance with the Act. This process is underway and the National Air Quality Information System (NAQIS) will emerge with the announcement of the national framework, mooted for September 2007 (*New Ambient Air Quality Standards*, Press Briefing, National Assembly, Cape Town, 6 July 2006, at: www.deat.gov.za). Once the detail of the NAQIS is know it is submitted that the undertaking made by industry in the MoU should be reviewed to determine the relative stringency of the undertakings in light of the requirements of the NAQIS.

[56] *Supra n* 45 at 318.

[57] *Supra* n 45 at 318.

[58] NEMA, section 35(2)(c). While the exact nature of the Memorandum of Understanding, discussed above, concluded between government and industry on the monitoring of industrial greenhouse gas emissions is unclear, it is submitted that the agreement is unlikely to have been constituted as an EMCA. It is arguable that the credibility of this agreement would have benefited from the inclusion of the NEMA monitoring provisions.

The Draft Policy of Environmental Fiscal Reform in South Africa recognises the potential of voluntary environmental agreements to offer rapid and simple solutions to environmental problems, without placing undue burden on the regulator.[59] This document also stresses that, to ensure their greater effectiveness, such agreements should conform with recognized behavioural principles, must include real threat of sanction in the event of non-compliance or free-riding on the actions of others, and that compliance with undertakings made should be adequately monitored.[60]

5.2.2.2 *Initial concerns in the negotiation of EMCAs*

The South African chemicals and oil refining industry acknowledged the potential benefits of EMCAs soon after the promulgation of NEMA and it was noted that "the incorporation of [the section on EMCAs] in the NEMA follows the increasing worldwide trend of introducing negotiated agreements between industry and the regulatory authorities".[61] It was further suggested that chemicals industry representative bodies might derive more advantage, for their constituency, by concluding so-called "sectoral EMCAs" with government, rather than installations attempting to conclude agreements with the state on an individual basis.[62] Flowing from industry's positive response to this suggestion, Draft EMCAs *inter alia* providing industry with incentives for environmentally beneficial actions, were developed for discussion with government.[63] However, negotiations to finalise these agreements faltered and nothing came of the initiative. In searching for a reason to explain this failure cert ain Non-Governmental Organisations have expressed the view that effective legislation and standards, "which are necessary preconditions for the successful implementation of EMCAs are not yet in place in SA."[64]

5.2.3 Sub-section Conclusion

Global trends indicate that the use of voluntary approaches is an important supplement to traditional, regulatory or command-and-control measures. However, environmental

[59] National Treasury *Draft Policy Paper A Framework for considering market-based instruments to support environmental fiscal reform in South Africa* April 2006.
[60] *Id*. at page 46-47.
[61] Scoltz W, *"The Possible Promotion of Sustainable Development at Local Government Level, Via Instruments such as Environmental Management Cooperation Agreements"* available at www.kas.org.za/Publications/SeminarReports/constitution%20and%20iv/ [Date of last access 17 October 2006].
[62] It is interesting to note that these industries are included on DEAT's recently published Top Fifty list of the worst air pollution emitters in the country.
[63] For example see: *Third Draft EMCA between the Chemical Industry and the regulatory authorities* and the *Draft SA Oil Refinery EMCA*. Hardcopies of these documents are on file with IMBEWU. The oil refinery industry Draft EMCA states that incentives "may include but are not limited to tax benefits, the subsidisation of technology investments, support for research and development programmes and assistance with regard to access to international technology." The chemical industry Draft EMCA makes provision for incentives and disincentives
[64] Groundwork, *A Caution to Civil Society*, "The Development of EMCAs in South Africa", available at www.groundwork.org.za/Pamphlets/emcas.htm [Date of last access 17 October 2006].

public-private partnership agreements in South Africa have been viewed with much scepticism and have not received favourable consideration from business and industry. It is therefore recommended that opportunities for such agreements initially be explored at a company or community level and with a limited scope, e.g., dealing only with regard to CO_2 emissions from specified sources on a particular site. This tentative approach might prove more profitable than immediately attempting to introduce this approach at a sectoral level and incorporating a number of issues, perhaps until the popularity and efficacy of industry self-regulation takes root. In addition comprehensive consultation would need to be conducted with civil society and with all relevant tiers of government. It is submitted that all roleplayers are likely to be more receptive to EMCAs with limited implications and where both government and industry or communities can more freely develop the confidence to experiment further with this type of instrument.

5.3 **National Environmental Management: Air Quality Act No. 39 of 2004**

5.3.1 Sub-section Introduction

The Air Quality Act No. 39 of 2004 represents a realignment of South Africa's air quality management regime and will come into operation in a progressive fashion over the next few years. A significant innovation to domestic air quality management is the introduction of ambient air quality standards that will apply in addition to existing point-source controls.[65]

Section 60 (not yet in operation) repeals the outdated Atmospheric Pollution Prevention Act No. 45 of 1965 (APPA), thus anticipating the Air Quality Act's future role as the principal law regulating air quality in the country. The objective of the Act is specifically stated as being to reform the law regulating air quality in order to protect the environment by providing for reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development while promoting justifiable economic and social development.

The Act is identified in the Climate Change Response Strategy as DEAT's primary instrument in combating climate change and, as such, provides a framework for very effective future interventions in this regard. It remains to be seen whether such interventions will, indeed, be forthcoming or, if they are forthcoming, are made in time for them to contribute to resisting the climate change phenomenon. To achieve its objective the Act provides for a number of regulatory mechanisms. For present purposes the utility of Regulations under the Act and of the so-called "Air Quality Management Measures", as mitigation measures, will be explored.

[65] Pending the establishment of National Ambient Air Quality Standards, the set of ambient concentrations in air of certain substances, found at Schedule Two to the Air Quality Act are applicable. In June 2006 a government notice entitled *Identification of substance in ambient air and establishment of national standards for the permissible amount of concentration of each substance in ambient air* was published for comment.[65] No ambient concentrations for any greenhouse gas are included - either in the abovementioned Schedule Two or the latter government notice.

5.3.2 Regulations under the Air Quality Act

Typically, for recent DEAT legislation, the Air Quality Act provides a framework for future air quality management, the details of which will be implemented over time and through regulations under the Act. Regulations under the Act are potentially ver wide-ranging and seek to address a number of issues in the interests of achieving the Act's objective. Certain categories of these regulations are relevant as vehicles for the implementation of greenhouse gas mitigation.

For completeness sake the full range of regulations permissible in terms of the Air Quality Act is quoted below. Certain categories of regulation, potentially relevant as vehicles for mitigation mechanisms, are highlighted in bold. Due to space constraints is has not been impossible to analyse each category in detail. Consequently the remainder of this sub-section explores the potential for greenhouse gas mitigation of certain of the most promising categories.

"**Regulations by Minister**

53. The Minister may make regulations that are not in conflict with this Act, regarding-

(a) any matter necessary to give effect to the Republic's obligations in terms of an international agreement relating to air quality;[66]
(b) matters relating to environmental management co-operation agreements, to the extent that those agreements affect air quality;[67]
(c) emissions, including the prohibition of specific emissions, from point, non-point and mobile sources of emissions, including motor vehicles;
(d) open fires and incinerators;
(e) ozone-depleting substances;
(f) codes of practice;
(g) records and returns;
(h) labelling;
(i) trading schemes;
(j) powers and duties of air quality officers;
(k) appeals against decisions of officials in the performance of their functions in terms of the regulations;
(l) incentives to encourage change in behaviour towards air pollution by all sectors in society;
(m) requirements in respect of monitoring;
(n) the avoidance or reduction of harmful effects on air quality from activities not otherwise regulated in terms of this Act;
(o) any matter that may or must be prescribed in terms of this Act; or

[66] See the discussion, at section 5.2.1, above, of NEMA provisions relating to the introduction into domestic law of international environmental agreements, or parts thereof, to which South Africa is a party.
[67] See the discussion, at section 5.2.2, above, of NEMA provisions relating environmental management co-operation agreements.

(p) any other matter necessary for the implementation or application of this Act."

(Highlighted regulations, our emphasis, are considered below).

The above list of categories of regulation anticipates the possible introduction of a number of innovative actions (by South African standards) for air quality management. For the purposes of this paper, the following categories are considered to be most promising in this regard:

- "Trading schemes" (section 53(i)): The broad language used by the Act leaves a wide legislative space for more than one intervention, including:

    - A national trading scheme for greenhouse gas emissions. There are a number of emissions trading initiatives currently operating internationally, both within and outside the framework established by the Kyoto Protocol. It is submitted that it would be possible for South Africa to construct a trading scheme model based, for example, on the rules of the European Union Emissions Trading Scheme (EU ETS), the Regional Greenhouse Gas Initiative (RGGI)[68] or the (currently shelved) Canadian proposal regarding emissions from "Large Final Emitters".[69] Other viable options could see trading occurring between emitting installations, alternatively trading being permitted between different regions of the country. A regional strategy for controlling emissions might be based on the model provided by the United States-based RGGI - an initiative for the implementation of a multi-state, cap-and-trade emissions trading scheme.[70] In order properly to implement a similar scheme in South Africa extensive research would need to be undertaken *inter alia* into the potential impact of trading on affected industrial sectors and the possibility

[68] In December 2005, seven U.S. states signed a Memorandum of Understanding to develop a regional strategy for mitigating carbon dioxide emissions. The agreement takes effect in 2009, and is designed to reduce $C0_2$ emissions to a level 10% below current emissions by 2019. The Model Law/Rule for RGGI is available at: http://www.rggi.org/draftmodelrule.htm. [Date of last access 26 October 2006]. It may also be noted that there is considerable American experience and expertise in matters relating to establishing emissions trading schemes largely due to the implementation, in the early 1990s, of SO_2 trading using the platform of the Chicago Exchange.

[69] *The notice of intent to regulate greenhouse gas emissions by Large Final Emitters* was published in terms of the Canadian Environmental Protection Act 1999, Part 5 and 11 and may be found in the *Canada Gazette*, Volume 139, No 29, Part I, of 16 July 2005. With the relatively recent change in government and the seeming reticence of the current Canadian administration to tackle climate change-related issues the future of the Large Final Emitters scheme is in doubt. However, the principles expressed in the abovementioned *Canada Gazette* and described briefly in the Companion Resource hereto, would be of value to any country seeking to implement a similar scheme.

[70] A "cap and trade" approach pre-determines the total quantity of emissions that can be emitted, i.e., the "capo", before allowing trading of allowances. In a "baseline and credit" system emission credits are generated through the implementation of an activity which results in the reduction of emissions, and the results of the activity are measured against a baseline. Emissions reductions below the baseline are tradeable. See Freestone, D., and Streck, C., *Legal Aspects of Implementing the Kyoto Protocol Mechanisms* at 41.

of linking with other, similar, schemes.[71] Such linking could contribute to the development of a truly international emissions trading regime.[72]

- A system for the trade in energy related certificates similar to the Australian scheme for tradable renewable energy certificates implemented in terms of the Mandatory Renewable Energy Target (MRET). This scheme has proven effective in supporting renewable energy generation domestically.[73] Despite potential for the implementation of a similar system in South Africa the market in energy efficient technologies and renewable energy is still relatively immature as there currently seems to be little interest within government and the private sector to support the development of renewable energy resources/technologies more aggressively due to the country's abundant coal reserves. Given the relative expense of generating power from renewable sources implementation of a tradable renewable energy certificate mechanism is likely to require a far wider programme of incentives for investment in the country's fledging renewable energy industry than the (virtually non-existent) one that is currently in place.[74] The current energy crisis in South Africa[75] has presented an unique opportunity for a transition to more

[71] Legislation to implement RGGI into state law is currently being developed in certain of the participating American states, e.g., by New York State. Among the intentions behind the RGGI is to create a link with the EU ETS, thus anticipating emissions trading between different schemes. Following this initiative it is submitted that South Africa should adopt a similar, inclusive, approach in the development of any future domestic emissions trading scheme.

[72] By way of further context for emissions trading in South Africa: it might be noted that industry generally does not participate in voluntary emissions trading, e.g., as is undertaken using the platform provided by the Chicago Climate Exchange (CCX: see. www.chicagoclimatex.com). If voluntary trading is undertaken by sectors of industry or individual companies or installations, this information is not publicised and therefore unknown.

[73] Rossiter D and Singh A, *Australia's Renewable Energy Certificate System*, May 2006 available at www.orer.gov.au/publications/pubs/rec-systems0506.pdf. [Date of last access 18 October 2006]. It might also be noted that South Australia is anticipating the introduction of a Climate Change and Greenhouse Emissions Reduction Bill (possibly as early as December 2006) - for more information see: www.climatechange.sa.gov.au. [Date of access 30 October 2006]. While there is a discrepancy between the actions taken by Australian states and the federal government, Prime Minister John Howard has recently pledged A$500 million to tackle global warming. It is foreseen that these funds will *inter alia* be applied to forging partnerships between companies and state governments aimed at investing new technologies designed to produce cleaner fossil-fuel generated power. A further relevant development is the proposal by the premiers of certain Australian states for a twenty year emissions cap-and-trade scheme to be known as the National Emissions Trading Scheme (NETS). For more information see: *Australian states propose [twenty] year emissions trading scheme*, 16 August 2006, at www.pointcarbon.com .

[74] *EIA South Africa: Energy and Environmental Issues*, November 2004 available at www.eia.doe.gov/cabs/safrenv.html [Date of last access 18 October 2006]. For further information in regard to renewable energy in South Africa see: (i) the description of the Renewable Energy White Paper (November 2003) in the Companion Resource hereto; (ii) the results of the CABREE programme and the details of the Renewable Energy Programme Support Grant (information on both of these is available at www.dme.gov.za); and, (iii) Fakir, S., "South Africa: Finance and the Future of Energy", *Business Day*, 3 October 2006, available at http://allafrica.com/stories/200610030456.html [Date of last access 30 October 2006].

[75] By the end of 2001, a total of 66% of households have been electrified, which translates to more than 3.4 million connections since 1994. See report National Regulator, Annual Report 2000.

sustainable energy practices.[76] However government commitment to alternative energy sources has not really translated into legislation as yet.[77]

- Labeling (section 53(h)): Research has recently been conducted into the feasibility of implementing a national eco-labeling scheme in South Africa.[78] The research assesses the potential success of such an initiative and concludes that the most appropriate implementation actions would include fostering environmentally improved production and consumption methods, particularly in the energy efficiency market. The research is optimistic that empowering consumers and corporate decision-makers, by providing them (through labeling) with environmentally-relevant information on the purchasing decisions they make, could lead to greater environmental awareness among consumers and encourage corporate commitment to energy efficiency and utilization of renewable energy. These anticipated results of labeling may minimize the need for regulation. By contrast DEAT research indicates that eco-labeling is not a viable option as South African consumers are not sufficiently educated in regard to "green" issues and that regulatory interventions may be more effective in changing behaviour.[79] The polemic between these two pieces of research is intriguing because of its circularity, i.e., the former argues that labeling will raise awareness while the latter argues that labeling will be ineffective because awareness levels are low. DME's Energy Efficiency Strategy recommends the mandatory introduction of labeling for some household appliances as a first step towards promoting consumer awareness on energy efficiency and favours the adoption of European Union labeling standards because these are approved internationally. The Energy Efficiency Strategy also suggests that the potential success of such standards, in conveying the message of energy efficiency to a diverse target-group comprising a variety of cultural backgrounds, would be of particular benefit to South Africa.[80]

  The Air Quality Act provides for the possibility of establishing a market for eco-labeled products, which could not only encourage corporate commitment but also

[76] This notion is echoed by the White Paper on Energy Policy, which requires that an equitable level of national resources is invested in renewable technologies.

[77] The main obstacles to utilising renewable energy sources have been identified as including the cost of implementing the new technologies, high upfront investment costs and resistance from the fossil fuel sector. For more detailed analysis see Munnik, V, "Building a civil society platform for a just transition to sustainable energy", background paper for: *Policies and Measures for Renewable Energy and Energy Efficiency in South Africa*, commissioned by the Sustainable Energy and Climate Change Partnership.

[78] Nedlac *Global Review of Eco-Labels: Implications for South Africa*, available at www.nedlac.org.za/top.asp?inc=research/fridge/eco_labelling/ecec_summary_.htm. [Date of last access 18 October 2006].

[79] See: Empowerment for African Sustainable Development (EASD) in collaboration with DEAT, *Implementation of Agenda 21* available at www.easd.org.za/_non_ssl/Soe/nation/safri-cp.htm. This research notes that lack of awareness on environmental and health risks associated with energy usage was particularly evident amongst low-income households and concludes that consumption patterns are unlikely to change in the foreseeable future. DME and the Department of Trade and Industry are also currently investigating the possibility of introducing an eco-labelling scheme. Information in this regard is available at www.dti.go.za.

[80] Department of Minerals and Energy, *Energy Efficiency Strategy of the Republic of South Africa*, March 2005, page 18. See the discussion of the Energy Efficiency Strategy in the Companion Resource hereto.

have a direct impact of promoting the development of environmentally preferable goods and services through consumer choice. It is our view that there would be sufficient market advantages associated with eco-labelling, including improving environmental production and consumption methods. The viability of establishing and implementing a domestic scheme and the promotion of a certification progrmme, perhaps within the context of other initiatives such as the "Proudly South African" Campaign should be prioritised.

- "Requirements in respect of monitoring (section 53(m)): South Africa's *Initial National Communication to the UNFCCC* (2005) recognizes that the establishment of an emissions measurement database is imperative due to the dearth of baseline emissions information required for proper national emissions management. Much of the emissions information contained in this document relies of monitoring that was conducted inn 1994. This category of regulation could introduce mandatory monitoring for South Africa's emitting industries. As a tentative first step in this direction, and using the country's first National Climate Change Conference (October 2005) as a backdrop, government and industry concluded a Memorandum of Understanding committing industry to the self-monitoring of its greenhouse gas emissions. This initiative has been hailed as representing significant progress towards developing consensus on the management of industrially-derived emissions. It may be noted that the pending national framework for achieving the objectives of the Air Quality Act must include provisions dealing with national monitoring and information management standards.

- "Codes of practice" (section 53 (f): South Africa has a well developed system of standards and codes of practice applicable to the energy sector.[81] The Energy Efficiency Strategy indicates that mandatory energy efficiency standards should be an important component of governmental policy.[82] In addition the Draft Energy Bill empowers the Minister of Minerals and Energy to make such standards compulsory and provides that the Minister may prescribe codes and guidelines for energy efficient measurement standards, manufacturing processes, testing procedures and verification marks and any standards gazetted in terms of the Standards Act No. 29 of 1993.[83] It is submitted that the existing portfolio of standards and codes of practice could be strengthened to support potential regulatory interventions to promote energy efficiency without the need to establish new standards.

- "Incentives to encourage behaviour by all sectors of society (section 53(l)): While the Air Quality Act does not indicate what such incentives may consist of or what

[81] Such standards and codes include: commercial and residential building codes, codes for house-hold appliances, government procurement standards for equipment and for upgrading energy efficiency standards in government buildings and compulsory fuel efficiency standards for corporate and institutional fleets

[82] See n 71 above.

[83] Draft National Energy Bill Version 3 dated 15 September 2004, Section 18(3) (g).

they might be limited to, international experience indicates that tax reform is a practical way of encouraging industry and individuals to shift from environmentally damaging to environmentally friendly processes.[84] With this in mind it may be anticipated that the DEAT Minister, empowered to make regulations under the Air Quality Act, would possibly be acting *ultra vires* his powers should he attempt to make regulations providing for financial incentives. The South African National Treasury exercises strict control over financial matters and regulations under the Air Quality Act seeking to provide for financial incentives will likely to require the acquiescence of Treasury for their implementation. This procedural consideration aside, ecological tax reforms might include a wide variety of actions including removal of subsidies,[85] incentive taxes[86] and green cost-covering charges.[87] There is currently no framework for the imposition of environmentally related fiscal measures in South Africa. National Treasury, in a recent policy document on the options for environmental tax reform, indicates that the introduction of environmentally-related tax instruments would need to be derived from a number of different statues.[88] Direct environmental tax interventions might be derived from existing direct tax legislation, e.g., the Income Tax Act No. 58 of 1962, while indirect environmental tax measures might be derived from indirect tax legislation, e.g., the Customs and Excise Act No. 91 of 1964 and the Value-Added Tax Act No.89 of 1991. Implementing environmental tax would also need to be compatible with commitments in terms of World Trade Organisation agreements[89] and ongoing tax harmonisation measures within the SADC region.[90]

- "Emissions, including the prohibition of specific emissions, from point, non-point and mobile sources of emissions, including motor vehicles": (section 53 (c)):

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[84] Rolfe C, West Coast Environmental Law Research Foundation, *Upstream Emissions Trading: The great leap forward for ecological tax reform?* Available at: www.wcel.org/wcelpub/2000/13125.htm [Date of last access 23 October 2006]. Rolfe submits that several countries, e.g., Denmark and the Netherlands, have successfully introduced carbon taxes to encourage a shift away from carbon-intensive fuels. Finland introduced a carbon tax in 1990 which is credited as being the reason for a 7% reduction in national $C0_2$ by 1998. See also: Harrington and Morgenstern, *supra.*, and the discussion of possible municipal rates rebates for mitigation actions as described at section 4.4, above.

[85] *Supra* n 80 above. The removal of subsidies is intended to ensure that government funding does not support environmentally damaging activities. The Organisation of Economic Cooperation and Development has estimated that the removal of energy subsidies worldwide would reduce global emissions of greenhouse gases by eighteen percent by 2050, see working together to respond to Climate Change, available at www.oecd.org/topic/0,2686_2649_3765_1_1_1_1_37465,00.htm [Date of last access 31 October 2006]. .

[86] *Supra* n 80 above. Incentive taxes are taxes that aim to change environmental behaviour within a sector, without affecting the overall costs facing that sector.

[87] *Supra* n 80 above. These are charges imposed to cover the cost of a particular environmental service or activity.

[88] *Supra* n 55 above.

[89] *Id.*

[90] National tax reforms are an integral part of the broader tax reform process. In the context of globalisation, policy responses need to take into account the imperatives of Southern African economic integration and the need for tax co-ordination across the region. For more information, see *2000 Medium Term Budget Policy Statement*, available at www.treasury.gov.za/document/mtbps2000/4.pdf [Date of last access 23 October 2006].

Motor vehicle emissions represent a significant source of greenhouse gas concentrations especially in South Africa's large urban centres, for example, a recent study in Cape Town has revealed that the highest source of emissions in that city are from diesel powered vehicles.[91] The introduction of unleaded fuels in 1996 and plans to phase out of leaded petrol are examples of mitigation strategies already undertaken by the Government in the transport sector. To date, however, the country has not aggressively pursued policies, in response to increases emissions and congestion caused by extensive motor vehicle use, similar to those adopted by other industrialised countries.[92] Examples of such policies include exhaust treatment devices and encouraging behavioural change in regard to public transport.[93] Current control of vehicular emissions, acknowledged as not being particularly effective, lies within APPA. The relevant sections of APPA[94] must be seen in the context of the Road Traffic Act No. 29 of 1989. This Act provides that the Transport Minister may make regulations regarding the emission of exhaust gas, smoke, fuel, oil and visible vapours from any vehicle operating on a public road.[95] To date, no such regulations have been promulgated in terms of the Road Traffic Act. To avoid a piecemeal approach to the regulation of vehicle emissions it is recommended that such regulations be made under the new Air Quality Act, rather than the Road Traffic Act.

5.3.3 Air Quality Management Measures

The Air Quality Act provides for a series of Air Quality Management Measures, namely:

- Priority Areas;
- Listing of activities resulting in atmospheric emissions;
- Controlled Emitters;
- Controlled Fuels;
- Other measures, namely:
    - Pollution Prevention Plans;
    - Atmospheric Impact Reports;

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[91] City of Cape Town, Study on Diesel Vehicle Testing, available at: www.capetown.gov.za/clusters/health.asp?IDPathstring+1123-1395 [Date of last access 31 October 2006].
[92] White Paper on Energy, Part Four, available at: www.polity.org.za/html/govdocs/white_papers/energy4.html [Date of last access 23 October 2006].
[93] South Africa has, very recently (October 2006), begun construction of an 80km rapid rail link between Johannesburg, Tshwane and the OR Tambo International Airport (previously the Johannesburg International Airport). This will be the first rapid rail link in the country.
[94] Section 36 to 40.
[95] Glazewski J see n 33 above page 597.

- Recognition Programmes.

Each of these offers potential as a less or more effective vehicle for greenhouse gas emissions mitigation mechanisms. Without providing an exhaustive analysis of the potential of each regulation certain comments, relevant to the greenhouse gas mitigation potential of each of these interventions, are provided below.

- Priority Areas (Section 18(1)): The Minister or Provincial Minister of an Executive Council (MEC) responsible for the environment may declare an area as a priority area on the reasonable belief that ambient air quality standards are being, or may be, exceeded in the area, or any other situation exists which is causing, or may cause, a significant negative impact on air quality in the area, and the area requires specific air quality management action to rectify the situation. Priority area management plans must be prepared for priority areas. Such plans must be aimed at co-ordinating air quality management in the area, address issues related to air quality in the area, and provide for their implementation by a committee representing relevant role-players. Declaration of priority areas is intended to take governmental capacity constraints into account by concentrating on unacceptable pollution "hotspots".[96] Government might utilise high concentrations of greenhouse gases emissions as an indicator and seek to regulate areas with high emission levels as a priority area. Current government efforts to establish a regulatory framework providing for emissions reductions, include the declaration of the Vaal Triangle Air-shed Priority Area[97] in terms of section 18(1) of the Air Quality Act[98] and the development of the requisite priority area management plan. The ability to declare a national priority area is one of the most powerful management tools of the Act and follows the Minister being satisfied that the ambient air quality within the area concerned exceeds or may have exceeded ambient air quality standards, that a situation exists within the area that is causing, or may cause, a significant negative impact on air quality in the area and that the area requires specific air quality management action to rectify the situation. The declaration results in the Minister gaining additional regulatory powers to ensure that the area's air quality management plans are implemented and enforced, including prescribing penalties for any contravention of, or any failure to comply with such plans and the securing of additional funding arrangements.[99]

- Licensing of listed activities resulting in atmospheric emissions (various sections): The Act requires the Minister or MEC to publish a list of activities resulting in atmospheric emissions that are reasonably believed to have or may have a significant detrimental effect on the environment, including health, social

[96] The Vaal Triangle Air-Shed was the first area to be declared a priority area in April 2006. Other areas that are likely to follow suit include: Durban, Richards Bay and Milnerton. See Kidd, "*M The implementation gap in South African air pollution legislation",* available at www.law.pace.edu/environmnet/2006-colloquium-papers/kidd.doc [Date of last access 31 October 2006].
[97] The Vaal Triangle is South Africa's industrial centre and a renowned "hot spot" of anthropogenic air pollution, which amongst others, raises important environmental justice and health issues.
[98] GN R 365 GG 28732 dated 21 April 2006.
[99] Section 20.

conditions, economic conditions, ecological conditions or cultural heritage.[100] The list must establish the minimum emission standards of substances, including the permissible amount, volume, emission rate or concentration of substances emitted, resulting from a listed activity.[101] This provision could therefore prove to be a useful tool in the effective regulation and the achievement of quantitative reductions of greenhouse gas emissions. The consequence of listing an activity and regulating the emissions is that no person may conduct an activity without first obtaining a provincial emission licence or and atmospheric emission licence.[102] Municipalities are charged with the implementing the licensing system prescribed in the Act. During te period of the Act's development, this factor was identified as a potential hurdle to the Act's implementation due to a perceived lack of capacity local government.[103] In this context it might be noted that a municipality is able to delegate this licensing authority back up to Provincial level if it should so require. The Air Quality Act provides for a list of factors that are to be taken into account by the licensing authorities,[104] including *inter alia* any applicable minimum standards set for ambient air,[105] any measures taken to protect the environment[106] and any relevant tradable emission scheme,[107] replacing the outdated subjective assessment as was provided for in APPA.[108]Any decision by the licensing authority in respect of granting an application must be consistent with any other provincial or national legislation or environmental management policies and any minimum standards for atmospheric emissions.[109] The licensing authority is also empowered to specify the contents of any emission licence and may specifically require greenhouse gas emission measurement and reporting requirements.[110] It is submitted that these licensing requirements, if appropriately utilised, may prove useful in controlling and restricting greenhouse gas emissions.

- Controlled Emitters (Section 23(1)): The Minister or MEC may declare any appliance or activity, or any appliance or activity falling within a specified category, as a controlled emitter if such appliance or activity, or appliances or activities falling within such category, result in atmospheric emissions which through ambient concentrations, bioaccumulation, deposition or in any other way, present a threat to health or the environment. Certain emissions standards will have to be maintained for controlled emitters. Should a controlled emitter be responsible for greenhouse gas

[100] Section 21 (a).
[101] Section 21 (3).
[102] Contravention of this section is an offence, punishable by either a fine or imprisonment for a period of ten years or both. See section 52.
[103] See Glazeski J, n 33 at 604.
[104] Section 39.
[105] Section 39 (a).
[106] Section 39 (c) (ii).
[107] Section 39 (e).
[108]See section 10(2) (a) (i) of APPA, which provides that the CAPCO must be "satisfied that the best practicable means are being adopted…". The term "best practicable means" was undefined and the CAPCO therefore had wide discretionary powers. See Glazeski J, at 597, n 33 at 597.
[109] Section 40 (2).
[110] Section 43 (l).

emissions then these provisions of the Act might be used to limit such emissions, e.g., through a reduced emission standard for such emitter

- Controlled Fuels (Section 26(1)): The DEAT Minister or a Provincial Member of an Executive Council (MEC), may declare a substance or mixture of substances which, when used as a fuel in a combustion process, result in atmospheric emissions which through ambient concentrations, bioaccumulation, deposition or in any other way, present a threat to health or the environment or which the Minister or MEC reasonably believes present such a threat, as a controlled fuel. Such a declaration may: establish standards for the use of the controlled fuel in combustion processes; establish standards for the manufacture or sale of the controlled fuel; establish specifications, including maximum or minimum levels or concentrations of the constituents of substances or mixtures of substances, for the composition of controlled fuels; prohibit the manufacture, sale or use of the controlled fuel. No person will be able to manufacture, sell or use a controlled fuel unless it complied with the abovementioned standards. Should a controlled fuel be responsible for greenhouse gas emissions, then the abovementioned potential limitations on the utilisation of controlled fuels could be used to mitigate such emissions.

- Other Measures:

    - Pollution Prevention Plans: The Act empowers the Minister or MEC to declare any substance contributing to air pollution as a "priority air pollutant" and may require that any person conducting a listed activity which involves the emission of such a substance, to prepare and submit a pollution prevention plan for approval.[111] These provisions permit the possible regulation of greenhouse gas emissions. This would require a greenhouse gas to be declared a "priority air pollutant" and for a pollution prevention plan to be prepared that sough to reduce the emissions of this pollutant. If handled appropriately then, rather than being regarded as a burden, the requirement to prepare and submit a pollution prevention plan could provide an opportunity for government and industry to work jointly towards capping greenhouse gas emissions.

    - Atmospheric Impact Reports: Another means of managing the effects of emissions on the environment is the requirement that atmospheric impact reports should be submitted in cases where the "air quality officer" reasonably suspects that there has been contravention of the licensing requirements or any provision of the Air Quality Act.[112] In cases where contraventions relate to greenhouse gasses, then the information contained the report could be used in local, provincial or national databases as a means to inform other mitigating actions.

[111] Section 29.
[112] Section 30.

- Recognition Programmes: The Act makes provision for the implementation of a reward system permitting an air quality officer establish a programme for the public recognition of any significant achievement in the area of pollution prevention. This mechanism has the potential to operate as an incentive for behaviour change. Recognition of achievements in the management or reduction of greenhouse gas emissions will promote greater awareness of the associated issues and could encourage better environmental practice.

5.3.4 Sub-section Conclusion

The introduction of the Air Quality Act is set to transform air quality management in South Africa. An underlying feature of the Act's development was the determination, particularly on the part of civil society, that this statute should give effect to the social promise of the Constitution, namely, to secure an environment that is not harmful to health or well being while contributing to the achievement of sustainable development.

The Air Quality Act addresses many of the short comings of its predecessor and provides considerable potential for the development and implementation of energy efficient practices and the regulation of greenhouses gases.[113] Nevertheless, the Act currently lacks "teeth" as the development of the national air quality management framework and national monitoring and information standards, which are relevant to the granting of atmospheric emission licences, are still in their infancy. DEAT is currently engaging industry and civil society in the development of the framework, slated for published on the second anniversary of the promulgation of the Act, in September 2007.[114] The broad range of regulation the DEAT Minister is empowered to make is to be tentatively welcomed. These display the potential for a meaningful contribution to the mitigation of greenhouse and other emissions. Of particular interest is the power of the Minister to declare priority areas as "hotspots" (the first of which has been declared), and the provision for self-regulatory agreements with industry and government.

It is our view that a combination of the approaches anticipated by the Air Quality Act's regulation provisions will provide the optimum legal environment to achieve the Act's objectives.

[113] Historically, incentives for investment in energy efficient technologies and renewable energy in South Africa have been lacking. This problem has been compounded by fragmented energy legislation that has focused on ensuring adequate supplies rather than considering energy efficiency measures or environmental impacts; abundant and cheap coal resources; the lack of awareness amongst consumers and the fact that environmental concerns are inevitably tied to social and economic considerations.

[114] See news article at www.buanews.gov.za

6. CONCLUSION AND RECOMMENDATIONS

One conclusion that may be drawn from the discussion contained in this paper is that, even within the relatively small sample of South African legislation analysed there lies considerable opportunity for the legislative introduction of greenhouse gas mitigation mechanisms.

This is unsurprising in the case of the DEAT-inspired Air Quality Act which is intended as the primary tool for future air quality management. The lesson that can be drawn from the research conducted in drafting this paper, however, is that mitigation opportunity also lies within statutes that are not specifically aimed at achieving an environmental end,[115] and that through the application of creative legal thinking such opportunity may be exploited in defence of the global climate.

The fact that such opportunity exists within different statutes, falling under the jurisdiction of various government departments, suggests that realising the potential offered will require co-ordination between relevant departments. In this regard concern must be raised at the warning sounded by the Climate Change Response Strategy (mentioned at section 3.3.2, above) that awareness within government of the likely impacts of climate change, and the necessary actions to combat such impacts, is "somewhat limited". The Strategy anticipates a possible situation where officials of "other departments", i.e., other than DEAT, might come to view such actions as working against national development priorities. The consequences of such views are not explored in the Strategy but it is easy to imagine that this might lead to a circumvention of co-ordinated government efforts to combat climate change.

This consideration is particularly important in light of the probability that the effects of climate change are likely to impact all aspects of human society, including environmental, economic and social. Perhaps, climate change is the ultimate "cross-cutting" issue. In this light a co-ordinated approach to the problem seems a prerequisite to success. However, and notwithstanding the requirement in Chapter Three of the South African Constitution that governance should be co-operative,[116] it is a malaise of the current administration that this requirement is not implemented to the fullest possible extent. The perception that different legislative vehicles, which may be harnessed to efforts to combat climate change, are the "turf" of one or other government department could prove fatal to the harmonised and successful utilization of such vehicles.

With the abovementioned factors in mind the following recommendations flow from the discussions above:

- The Memorandum of Understanding between government and industry dealing with voluntary emissions monitoring by industry, which has dropped from view

[115] See discussion on municipal property rates rebates, at section 4.4, above, and section 5.3.2, above, in regard to incentives to encourage behaviour by all sectors of society.
[116] Constitution of the Republic of South Africa Act No. 108 of 1996, section 41(1)(h).

since the fanfare surrounding its signing in October 2005, should be upgraded to an Environmental Management Co-operation Agreement in terms of NEMA.

- Given the fact that South African is experiencing a soaring growth rate in the number of vehicles on its roads, it is recommended that regulation of vehicular emissions be prioritised. Policies aimed at the control of emissions, e.g., the installation of exhaust treatment devices[117] should be regulated in terms of the Air Quality Act rather than the Road Transport Act (as is currently the case), to avoid a piecemeal approach to air quality management.

- Further research should be conducted to determine other potential legislative vehicles that may be used to implement greenhouse gas emissions mitigation mechansims.

- The potential offered by regulations under the Air Quality Act should be the subject of urgent further research. In particular the following specific initiative should be urgently investigated:

    - The potential offered by the production of draft model regulations establishing a South African National Emissions Trading Scheme linked to similar international initiatives, particularly those mentioned at section 5.3.2 above.

    - Such linkage should include *inter alia* attention to the fungibility of greenhouse gas emissions reduction certificates with a commercial value, representing the mitigating of a specified amount of greenhouse gas, between the South African and international schemes. It is submitted that the inclusion of this characteristic would increase the scope for trade in such certificates and provide greater incentive for their generation.

    - While it is recognized that emissions trading is not without its detractors[118] the *rationale* for this recommendation is the notion that a commercial incentive to generate emissions reductions is likely to prove a significant contribution to efforts to reduce greenhouse gas emissions in complement to the other interventions, perhaps implemented through the abovementioned regulatory framework.

    - It should be noted that the commercial incentive to mitigate greenhouse gas emissions represented by emissions trading has considerable international support and has been the subject of a great volume of (ongoing) informed research. Emissions trading is also one of the flexible

[117] PEW Center Global Climate Change "*Executive Summary: Transportation in Developing Countries: Greenhouse Gas Scenarios for South Africa"* available at www.pewclimate.org/global-warming-in-depth/all_reports/transportation [Date of last access 31 October 2006].

[118] *Carbon Trading: A Critical Conversation on Climate Change, Privatisation and Power:* available at http://www.dhf.uu.se.

mechanisms (in addition to the project-based mechanisms established by the Clean Development Mechanism and Joint Implementation) provided for by the Kyoto Protocol.[119]

This paper has considered the opportunity that exists to utilize elements of certain of South African environmental statutes as vehicles for greenhouse gas mitigation mechanisms. The authors hope that this paper will prove of value as an analysis of relevant factors and that the recommendations contained above will provide some direction for future actions to mitigate greenhouse gas emissions in South Africa.

Johannesburg,

November 2006

[119] For very recent research into issues related to linking national emissions trading schemes see: Sterck, W., Braun, M., Haug, C., Korytarova, K., Scholten, A., Joint Emissions Trading as a Socio-Ecological Transformation (JET-SET), *Ready to Link-up: Implications of Design Differences for Linking Emissions Trading Schemes*, Working Paper I/06, Wuppertal, 2006.

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