

# Promoting Clean Development Mechanism Implementation in South Africa: Law and policy

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## Introduction

‘Warming of the climate system is unequivocal’.<sup>1</sup> In addition to increasing air and ocean temperatures, other changes observed in the environment include melting polar icecaps, rising sea levels and more extreme weather conditions including droughts, tropical cyclone activity and heavy precipitation.<sup>2</sup> If we are to continue on a ‘business as usual’ approach, global warming and climate change will intensify further.<sup>3</sup> Even if emissions are kept at 1990 levels, there will still be warming of about 0.1° Celsius per decade.<sup>4</sup> It is thus clear that irreversible harm has been done to the environment and that strong and urgent action is needed. Indeed, taking strong action now will prove more beneficial from a cost point of view than to ignore the effects of climate change for now and have to deal with more serious consequences later on.<sup>5</sup> It is furthermore recognised that it is the

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<sup>1</sup>Intergovernmental Panel on Climate Change *Climate change 2007: The physical basis - summary for policymakers (Fourth Assessment Report)* (February 2007) available at <http://www.ipcc.ch> (accessed 2008-03-27) 5.

<sup>2</sup>*Id* 7-8.

<sup>3</sup>*Id* 13.

<sup>4</sup>*Id* 12.

<sup>5</sup>*Stern Review on the economics of climate change* (2006-10-30) available at [http://news.bbc.co.uk/1/shared/bsp/hi/pdfs/30\\_10\\_06\\_exec\\_sum.pdf](http://news.bbc.co.uk/1/shared/bsp/hi/pdfs/30_10_06_exec_sum.pdf) (accessed

poorest countries that are the most vulnerable to climate change,<sup>6</sup> largely because they do not have sufficient resources to deal effectively with the adverse effects of climate change such as droughts and flooding. Collective international action is thus necessary to deal with climate change most effectively.<sup>7</sup>

In 2005 South Africa produced 330.34 million tonnes of carbon dioxide from fuel combustion alone.<sup>8</sup> This amounts to the production of 7.04 tonnes of carbon dioxide per capita, compared to China's 3.88 and India's 1.05.<sup>9</sup> An assessment of the emissions produced in South Africa per unit of economic output places South Africa in the top 15 most energy intensive economies in the world.<sup>10</sup> Furthermore, while South Africa has five per cent of Africa's population, it consumes about half of the electricity produced in Africa.<sup>11</sup>

The United Nations Framework Convention on Climate Change<sup>12</sup> and the Kyoto Protocol<sup>13</sup> (both are discussed in detail below) set out the obligations of parties to these agreements. While developing countries have fewer obligations than developed countries under these agreements, it is clear that developing countries also have a role to play in tackling climate change.

Indeed, the Kyoto Protocol makes provision for developing countries to take part in the clean development mechanism ('CDM') (discussed in more detail below) in terms of which developed countries implement project activities in developing countries, which result in the reduction of carbon dioxide emissions in the developing countries and the generation of certified emission reductions ('CERs') to assist developed countries to comply with their obligations under these agreements.<sup>14</sup> It

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2008-03-27) i-ii.

<sup>6</sup>*Id* vii.

<sup>7</sup>*Id* xxii.

<sup>8</sup>International Energy Agency *Key world energy statistics* (2007) available at [http://www.iea.org/textbase/nppdf/free/2007/key\\_stats\\_2007.pdf](http://www.iea.org/textbase/nppdf/free/2007/key_stats_2007.pdf) (accessed 3 May 2008) 56.

<sup>9</sup>*Id* 51 and 53.

<sup>10</sup>Department of Environmental Affairs and Tourism ('DEAT') *A National Climate Change Response Strategy for South Africa* (September 2004) available at [http://unfccc.int/files/meetings/seminar/application/pdf/sem\\_sup3\\_south\\_africa.pdf](http://unfccc.int/files/meetings/seminar/application/pdf/sem_sup3_south_africa.pdf) (accessed 2008-04-26) 8.

<sup>11</sup>United Nations Industrial Development Organisation ('UNIDO') *Clean development mechanism (CDM) investor guide: South Africa* (2003) available at <http://www.unido.org/index.php?id=o71852> (accessed 2008-04-29) 11.

<sup>12</sup>United Nations Framework Convention on Climate Change 1992 ('UNFCCC').

<sup>13</sup>Kyoto Protocol to the United Nations Framework Convention on Climate Change 1997.

<sup>14</sup>Art 12.

has been recognised that while ‘South Africa seems an ideal candidate to host CDM projects ... it continues to lag behind other (developing) countries like India, China, Brazil and even Honduras and Chile in the number of projects that are implemented’.<sup>15</sup>

This paper will attempt to identify why South Africa is lagging behind other developing countries in terms of CDM implementation. In this regard, this article will compare South Africa to Brazil in light of the similarities shared by these countries, in that South Africa is the largest economy of Africa while Brazil is the largest economy of South America.<sup>16</sup> It has also been said that South Africa and Brazil ‘share similar challenges and like-mindedness of approach’.<sup>17</sup> They have also both ratified the United Nations Framework Convention on Climate Change and the Kyoto Protocol.

In recognition of the critical effects of climate change described above, developed and developing countries party to the Kyoto Protocol agreed at the last Conference of the Parties in Bali to increase their efforts to address climate change. They also agreed to engage in negotiations on ‘long-term cooperation action’, which negotiations are to be concluded at the Conference of the Parties in Copenhagen in 2009.<sup>18</sup>

This article will thus also attempt to consider the measures that South Africa, as a developing country, can take to promote CDM implementation and thereby increase its contribution to the movement against climate change, ahead of the conference in Copenhagen. This article will tend to focus on carbon dioxide in view of the fact that it is recognised as ‘the most important anthropogenic greenhouse gas’.<sup>19</sup>

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<sup>15</sup>Little, Maxwell, and Sutherland ‘Accelerating the implementation of the clean development mechanism in South Africa’ (2007) 10 *South African Journal Of Economic And Management Sciences* 395.

<sup>16</sup>Department of Foreign Affairs *Attendance of President TM Mbeki at the Inauguration Ceremony of the President-Elect of Brazil, Mr Luiz Inacio Lula Da Silva, on 1 January 2003, 30 December 2002* available at <http://www.info.gov.za/speeches/2002/02123016111001.htm> (accessed 2008-04-25).

<sup>17</sup>*Ibid.*

<sup>18</sup>UNFCCC *Fact sheet: Stepping up the International Action on Climate Change - The Road to Copenhagen* available at [http://unfccc.int/files/press/backgrounders/application/pdf/the\\_road\\_to\\_copenhagen.pdf](http://unfccc.int/files/press/backgrounders/application/pdf/the_road_to_copenhagen.pdf) (accessed 2008-07-02) 1.

<sup>19</sup>Intergovernmental Panel on Climate Change *Climate Change 2007: The physical basis - summary for policymakers* (n 1) 2.

## United Nations Framework Convention on Climate Change, 1992 ('the Convention')<sup>20</sup>

The Convention came into force on 1994-03-21. Its ultimate objective is to achieve the 'stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system'.<sup>21</sup> This should not be done at the expense of food production and should not interfere with economic development proceeding in a sustainable manner.<sup>22</sup>

Member states are required to address 'anthropogenic (man-made) emissions by sources and removals of sinks of all greenhouse gases not controlled by the Montreal Protocol'<sup>23</sup> and are required to implement various measures to achieve the ultimate objective. These measures include providing inventories of emissions and removals; developing and implementing programmes dealing with these emissions and removals;<sup>24</sup> developing and supporting programmes and efforts aimed at promoting research, data collection, systemic observation and research capacities<sup>25</sup> and promoting education, training and public awareness of climate change and its effects.<sup>26</sup>

While the ultimate objective is a common one and the member parties share common responsibilities, a clear distinction is made between the obligations of developed and developing countries. The underlying rationale for this is that developed countries are historically responsible for the bulk of emissions and that developing countries will in future increase their emissions, which have previously been fairly low, in order to meet their 'social and development needs'.<sup>27</sup> It furthermore appears to be based on the consideration that it would not be fair if developing countries were required to undertake a 'disproportionate or abnormal burden' under the Convention.<sup>28</sup>

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<sup>20</sup>Note: While the Convention sometimes refers to the parties as 'parties included in Annex I' and 'parties not included in Annex I', for the most part the Convention refers to the parties as developed and developing country parties respectively. Thus, any reference here to 'developed countries' refers to Annex I parties; while 'developing countries' refers to non-Annex I parties.

<sup>21</sup>United Nations Framework Convention on Climate Change, 1992, art 2.

<sup>22</sup>*Ibid.*

<sup>23</sup>Art 4(1).

<sup>24</sup>Art 4(1)(a)-(b).

<sup>25</sup>Art 5.

<sup>26</sup>Art 6.

<sup>27</sup>Preamble.

<sup>28</sup>Art 3(2).

The principle of common but differentiated responsibilities is explicitly set out in several places<sup>29</sup> and it is stated that developed countries are to take the lead in addressing climate change.<sup>30</sup> There are also various commitments that only apply to developed countries including the adoption of national policies and measures to mitigate climate change by decreasing anthropogenic emissions, while maintaining sustainable development,<sup>31</sup> as well as the communication of information on such policies and measures and the resulting proposed emissions and removals.<sup>32</sup> Socio-economic development and the elimination of poverty are identified as 'the first and overriding priorities of the developing country parties'.<sup>33</sup> Account is also taken of the fact that in considering implementation of the Convention, member parties must consider the position of developing country parties, especially those that are highly dependent on fossil fuels<sup>34</sup> such as South Africa.

Although developed countries are required to take the lead in addressing climate change, this does not absolve developing countries from all responsibility under the Convention. Developing country parties are required to achieve the Convention's objective, simply subject to their respective capabilities<sup>35</sup> and priorities.<sup>36</sup>

All parties are required to submit national inventories of anthropogenic emissions and removals,<sup>37</sup> and are also required to submit information on steps taken or steps planned to be taken to implement the Convention.<sup>38</sup> Developing countries may also choose to be bound by the commitments (identified above) that would otherwise only bind developed countries.<sup>39</sup> The Convention furthermore provides for various forms of financial, technological<sup>40</sup> and technical assistance<sup>41</sup> to developing countries *for the very purpose of enabling them to comply with their obligations under the Convention*. The Convention also establishes a financial mechanism to provide financial assistance, including the

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<sup>29</sup>Preamble, art 3(1) and art 4(1).

<sup>30</sup>Art 3(1).

<sup>31</sup>Art 4(2)(a).

<sup>32</sup>Art 4(2)(b).

<sup>33</sup>Art 4(7).

<sup>34</sup>Art 4(10).

<sup>35</sup>Art 3(1).

<sup>36</sup>Art 4(1).

<sup>37</sup>Art 12(1)(a).

<sup>38</sup>Art 12(1)(b).

<sup>39</sup>Art 4(2)(g).

<sup>40</sup>Art 4(3), (5).

<sup>41</sup>Art 5(b).

transfer of technology.<sup>42</sup> The Convention makes further provision for financial assistance that may be provided by developed countries to developing countries for the purpose of the implementation of the Convention.<sup>43</sup>

It is thus clear that developing countries *are* required to attempt to reduce their anthropogenic emissions unless this is entirely beyond their capacities, which is arguably unlikely in light of the ample provision made for assistance under the Convention.

While the Convention sets out general objectives and commitments, it is the Kyoto Protocol that sets out these commitments more concretely.

## **Kyoto Protocol to the United Nations Framework Convention on Climate Change, 1997 ('the Protocol')<sup>44</sup>**

The Protocol was drafted pursuant to the Convention in order to further the ultimate objective of the Convention.<sup>45</sup> It entered into force on 16 February 2005. For the most part the Protocol only imposes obligations on developed countries party to the Convention. Developed country parties are required to ensure that their

aggregate anthropogenic carbon dioxide equivalent emissions of the greenhouse gases listed in Annex A do not exceed their assigned amounts ... with a view to reducing their overall emissions of such gases by at least 5 per cent below 1990 levels in the commitment period 2008 to 2012.<sup>46</sup>

The reduction commitments are set out in Annex B. The United Kingdom, for example, is required to reduce its emissions by eight per cent by 2012. Developing country parties are not subject to these binding emission reduction targets.

The Protocol reiterates the obligation of developed countries to assist developing countries financially to implement their obligations under the

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<sup>42</sup>Art 11(1).

<sup>43</sup>Art 11(5).

<sup>44</sup>Note: In contrast to the Convention, the Protocol generally refers to the parties as 'parties included in Annex I' and 'parties not included in Annex I'. However, for the sake of consistency, the parties will continue to be referred to here as developed and developing country parties respectively.

<sup>45</sup>Kyoto Protocol to the United Nations Framework Convention on Climate Change, 1997, Preamble.

<sup>46</sup>Art 3. The greenhouse gases listed are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride.

Convention.<sup>47</sup> Even where developing countries are subject to obligations regarding the implementation of programmes dealing with the mitigation of climate change<sup>48</sup> and the improvement of the ‘quality of local emission factors’<sup>49</sup> parties must take into account ‘their common but differentiated responsibilities’; and furthermore, no new commitments are to be introduced for developing country parties.<sup>50</sup>

The Protocol provides for three ‘flexible mechanisms’ to assist the developed countries in achieving their reduction targets.<sup>51</sup> The joint implementation mechanism allows developed parties to transfer to or acquire from other developed countries emission reduction units (‘ERUs’) following implementation of projects that reduce anthropogenic emissions or enhance the removal of emissions.<sup>52</sup> Developed country parties may furthermore take part in emissions trading amongst themselves,<sup>53</sup> pursuant to the allocation of ‘assigned amount units’ (‘AAUs’) at the beginning of each commitment period according to each party’s emission reduction targets.<sup>54</sup>

The Protocol also establishes a clean development mechanism (‘CDM’) which developing countries may participate in. The purpose of the CDM is to

assist parties not included in Annex I in achieving sustainable development and in contributing to the ultimate objective of the Convention, and to assist parties included in Annex I in achieving compliance with their quantified emission limitation and reduction commitments under Article 3.<sup>55</sup>

Under the CDM developed country parties implement ‘project activities’ in developing country parties, which must result in ‘real, measurable and long-term benefits related to the mitigation of climate change’<sup>56</sup> and emission reductions that are additional to those that would otherwise have occurred.<sup>57</sup> These emission reductions are referred to as

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<sup>47</sup> Art 11(2) and (3).

<sup>48</sup> Art 10(b).

<sup>49</sup> Art 10(a).

<sup>50</sup> Art 10.

<sup>51</sup> Carr and Rosembuj ‘Flexible mechanisms for climate change compliance: Emission offset purchases under the clean development mechanism’ (2008) 16 *New York University Environmental Law Journal* 44 at 45.

<sup>52</sup> Kyoto Protocol (n 45) art 6.

<sup>53</sup> Art 17.

<sup>54</sup> Carr and Rosembuj (n 51) 46.

<sup>55</sup> Kyoto Protocol (n 45) art 12.

<sup>56</sup> Art 12(5)(b).

<sup>57</sup> Art 12(5)(c).

‘certified emission reductions’ (‘CERs’) and they can be used by developed country parties to assist them in achieving their emission reduction targets in terms of article 3.<sup>58</sup> One CER is equivalent to one metric ton of carbon dioxide equivalent (‘t CO<sub>2</sub>e’).<sup>59</sup> This means that if a developed country exceeds its emission reduction target by five metric tonnes of carbon dioxide (or equivalent), it needs to offset this excess by earning five CERs through CDM project activities implemented in developing countries, or by acquiring five CERs through the other flexible mechanisms provided for under the Kyoto Protocol.

Where necessary, the CDM is to assist with funding of certified project activities.<sup>60</sup> The proceeds arising from certified project activities are to be used for administrative expenses and to help particularly vulnerable developing countries to meet the costs of adaptation.<sup>61</sup> Public and private entities may participate under the CDM.<sup>62</sup> The Protocol also provides for non-compliance by the member parties and states that the Conference of the Parties serving as the meeting of the parties shall approve procedures and mechanisms to deal with cases of non-compliance.<sup>63</sup>

The result of these flexible mechanisms is a booming international carbon market, which includes trading systems such as the European Union Emission Trading System (EU ETS)<sup>64</sup> and the New South Wales Greenhouse Gas Reduction Scheme (GGAS).<sup>65</sup> In the first nine months of 2006 the value of the carbon market grew to approximately US\$21,5 billion.<sup>66</sup>

### ***Brief overview of the procedural requirements of the CDM***

The parties participating in the CDM project must be parties to the Protocol<sup>67</sup> and are required to designate a national authority (‘DNA’) for

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<sup>58</sup>Art 12(3)(b).

<sup>59</sup>Carr and Rosebuj (n 51) 46.

<sup>60</sup>Kyoto Protocol (n 45) art 12(6).

<sup>61</sup>Art 12(8).

<sup>62</sup>Art 12(9).

<sup>63</sup>Art 18.

<sup>64</sup>Available at [www.euets.com](http://www.euets.com).

<sup>65</sup>Available at <http://www.greenhousegas.nsw.gov.au/>.

<sup>66</sup>Capoor and Ambrosi *State and trends of the carbon market 2006 - update: 1 January - 30 September 2006* (October 2006) available at [http://carbonfinance.org/docs/StateandTrendsMarketUpdateJan1\\_Sept30\\_2006.pdf](http://carbonfinance.org/docs/StateandTrendsMarketUpdateJan1_Sept30_2006.pdf) (accessed 2008-05-01).

<sup>67</sup>Decision 3/CMP.1 *Modalities and procedures for a clean development mechanism as defined in Article 12 of the Kyoto Protocol* paras 30 and 31, available at <http://unfccc.int/resource/docs/2005/cmp1/eng/08a01.pdf#page=6> (accessed 2008-04-30).



the CDM.<sup>68</sup> A project design document ('PDD'), including a monitoring plan,<sup>69</sup> must be submitted to the designated operation entity ('DOE').<sup>70</sup> A 'letter of approval'<sup>71</sup> from the host (developing country) party confirming that the proposed project activity contributes to sustainable development must also be submitted to the DOE.<sup>72</sup>

The DOE reviews the PDD to determine whether the relevant requirements have been complied with. It is *inter alia* required that the reductions in anthropogenic emissions are additional to any that would occur in the absence of the proposed project activity.<sup>73</sup> This means that 'anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the registered CDM project activity'.<sup>74</sup> It is also required that documentation be submitted relating to the environmental impacts of the proposed project activity.<sup>75</sup> If the environmental impacts of a project activity would be significant, an environmental impact assessment must be carried out according to the procedures of the host country.<sup>76</sup> It remains the prerogative of the host party to determine whether the project contributes to sustainable development in the host country.<sup>77</sup>

Once the DOE has determined that the proposed project activity is valid, it is required to submit to the Executive Board ('EB'), which supervises the CDM,<sup>78</sup> a request for registration, which takes the form of a validation report and includes the PDD and 'letter of approval'.<sup>79</sup> The registration by the EB is considered to be final eight weeks from when the EB receives the above-mentioned documentation unless a request for review is submitted by one of the parties involved in the project activity or at least three members of the EB.<sup>80</sup>

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<sup>68</sup>*Id* para 29.

<sup>69</sup>*Id* para 53.

<sup>70</sup>*Id* para 35.

<sup>71</sup>Carr and Rosembuj (n 51) 49.

<sup>72</sup>Decision 3/CMP.1 (n 67) para 40.

<sup>73</sup>*Id* para 37(d).

<sup>74</sup>*Id* para 43.

<sup>75</sup>*Id* para 37(c).

<sup>76</sup>*Ibid*.

<sup>77</sup>Decision 17/COP.7 *Modalities and procedures for a clean development mechanism as defined in Article 12 of the Kyoto Protocol*, Preamble, available at <http://unfccc.int/resource/docs/cop7/13a02.pdf#page=20> (accessed 2008-05-30). The decisions of the 7<sup>th</sup> session of the Conference of Parties are referred to as the Marrakesh Accords.

<sup>78</sup>Kyoto Protocol (n 45) art 12(4).

<sup>79</sup>Decision 3/CMP.1 (n 67) para 40(g).

<sup>80</sup>*Id* para 41.

Once a project has been implemented the CERs generated by the project are calculated according to the methodology included in the monitoring plan.<sup>81</sup> Thereafter the DOE verifies that the CERs calculated have actually resulted due to the project activity.<sup>82</sup> After the DOE has certified that ‘during the specified time period ... the project activity achieved the verified amount of reductions in anthropogenic emissions by sources of greenhouse gases that would not have occurred in the absence of the CDM project activity’,<sup>83</sup> the actual CERs are issued.<sup>84</sup>

## South Africa

### *Emissions*

As identified above, South Africa produced 330.34 million metric tonnes of carbon dioxide (‘Mt CO<sub>2</sub>’) in 2005 from fuel combustion alone.<sup>85</sup> While this is less than the emissions of other developing countries such as China and India, with 5059.87 Mt CO<sub>2</sub><sup>86</sup> and 1147.46 Mt CO<sub>2</sub><sup>87</sup> respectively, one must also consider the per capita carbon dioxide emissions. South Africa’s level of per capita emissions was 7.04 tonnes carbon dioxide per capita (‘t CO<sub>2</sub>/capita’) as of 2005, while those of China and India were 3.88 and 1.05 respectively.<sup>88</sup> South Africa is also one of the most energy intensive economies in the world.<sup>89</sup>

One reason for South Africa’s high energy intensity is its dependence on the burning of coal to produce electricity. The statistics reveal that 75.4 per cent of the total energy consumed in South Africa in 2004 was produced from coal.<sup>90</sup> In fact, the energy sector is the largest producer of greenhouse gas emissions in South Africa.<sup>91</sup> Other reasons for South Africa’s high energy intensity are its heavy reliance on coal in industry and mining, as well as inefficient use of energy.<sup>92</sup>

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<sup>81</sup>*Id* para 59.

<sup>82</sup>*Id* para 61.

<sup>83</sup>*Id* para 63.

<sup>84</sup>*Id* part J.

<sup>85</sup>International Energy Agency *Key world energystatistics* (2007) available at [http://www.iea.org/textbase/nppdf/free/2007/key\\_stats\\_2007.pdf](http://www.iea.org/textbase/nppdf/free/2007/key_stats_2007.pdf) (accessed 2008-05-03) 56.

<sup>86</sup>*Id* 50.

<sup>87</sup>*Id* 52.

<sup>88</sup>*Id* 51 and 53.

<sup>89</sup>DEAT *A National Climate Change Response Strategy for South Africa* (n 10) 8.

<sup>90</sup>Energy Information Administration *South Africa: Background* available at [http://www.eia.doe.gov/emeu/cabs/South\\_Africa/Background.html](http://www.eia.doe.gov/emeu/cabs/South_Africa/Background.html) (accessed 2008-05-03).

<sup>91</sup>UNIDO *Clean Development Mechanism (CDM) investor guide: South Africa* (n 11) 10; DEAT *A National Climate Change Response Strategy for South Africa* (n 10) 23.

<sup>92</sup>UNIDO *Clean Development Mechanism (CDM) investor guide: South Africa* (n 11) 9.

Government has taken steps to establish renewable sources of electricity such as wind, hydro and solar energy. However, as of 2004 hydro and other renewable sources of energy produced only 0.1 per cent of the total energy consumed.<sup>93</sup> It was projected that 'coal will remain the major source of energy for the foreseeable future'.<sup>94</sup> In light of South Africa's continued heavy reliance on coal as an energy source, it is clear that this projection remains valid. This is partly due to the fact that coal is a cheap source of energy as opposed to renewable sources of energy, which have significant start-up costs. It should be noted however, that the cheap price of coal does not include environmental externalities and therefore does not take account of the overall financial impacts of coal production on society.<sup>95</sup> This represents a gap that could be filled by the CDM.

### *The CDM in South Africa*<sup>96</sup>

There are currently 14 registered CDM projects in South Africa,<sup>97</sup> which as of mid-2008 had a population of 48.3 million people.<sup>98</sup> This is in contrast to Brazil, which has 145 registered projects<sup>99</sup> and a population of 195.1 million as of mid-2008.<sup>100</sup> Thus, with approximately 24.8 per cent of Brazil's population, South Africa has only 9.7 per cent of Brazil's registered CDM projects. China has 264 registered projects and India has 356 registered CDM projects.<sup>101</sup> South Africa's CDM projects relate inter alia to fuel-switching, nitrous oxide abatement as well as landfill projects.<sup>102</sup>

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<sup>93</sup>Energy Information Administration *South Africa: Background* (n 90).

<sup>94</sup>Department of Minerals and Energy ('DME') *White Paper on the Energy Policy of the Republic of South Africa* (December 1998) available at [http://www.dme.gov.za/pdfs/energy/planning/wp\\_energy\\_policy\\_1998.pdf](http://www.dme.gov.za/pdfs/energy/planning/wp_energy_policy_1998.pdf) (accessed 2008-05-04) 77.

<sup>95</sup>DME *White Paper on Renewable Energy* (November 2003) at 27 available at [http://www.dme.gov.za/pdfs/energy/renewable/white\\_paper\\_renewable\\_energy.pdf](http://www.dme.gov.za/pdfs/energy/renewable/white_paper_renewable_energy.pdf) (accessed 2008-05-15).

<sup>96</sup>Note: The statistics presented here are correct as of 2008-09-10.

<sup>97</sup>UNFCCC *Registered project activities by host party* available at <http://cdm.unfccc.int/Statistics/Registration/NumOfRegisteredProjByHostPartiesPieChart.html> (accessed 2008-09-04).

<sup>98</sup>Population Reference Bureau *2008 World Population Data Sheet South Africa: Statistics* available at [http://www.prb.org/pdf08/08WPDS\\_Eng.pdf](http://www.prb.org/pdf08/08WPDS_Eng.pdf) (accessed 2008-09-04) 8.

<sup>99</sup>UNFCCC *Registered project activities by host party* (n 97).

<sup>100</sup>Population Reference Bureau *2008 World Population Data Sheet* (n 98) 8.

<sup>101</sup>UNFCCC *Registered project activities by host party* (n 97).

<sup>102</sup>UNFCCC *Project Search: South Africa* available at <http://cdm.unfccc.int/Projects/projsearch.html> [accessed 2008-09-04].

South Africa's designated national authority ('DNA')<sup>103</sup> is housed in the Department of Minerals and Energy ('DME'). The DNA is responsible for inter alia assessing applications by persons submitting CDM projects for approval and determining whether they comply with national and international criteria, and if so, issuing letters of approval,<sup>104</sup> which effectively grant to the project applicant all rights and title to the emission reductions generated by the CDM project.<sup>105</sup>

The National Committee on Climate Change ('NCCC') and the Governmental Committee on Climate Change ('GCCC') have also been established.<sup>106</sup> The NCCC is inter alia responsible for advising the Department of Environmental Affairs and Tourism ('DEAT') on issues related to climate change as well as designing 'a process leading to the formulation of a national climate change policy and a national implementation strategy'. Its composition includes officials from various government departments and representatives of NGOs.<sup>107</sup> The GCCC is inter alia responsible for advising the sub-directorate of Climate Change and Ozone Layer Protection on climate change issues and discussing the CDM and the other flexible mechanisms.<sup>108</sup>

### *Policy*

While there are regulations and legislation dealing with *inter alia* energy, electricity, coal, gas and liquid fuels,<sup>109</sup> none deal specifically with climate change. It has been said that such legislation is not necessary at present, as climate change can be dealt with sufficiently by amending other legislation.<sup>110</sup> For example, the National Environmental Management: Air Quality Act<sup>111</sup> deals with greenhouse

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<sup>103</sup>Established in terms of GNR 721 GG No 27788 (2005-07-22) available at [http://www.dme.gov.za/dna/pdfs/dna\\_regs\\_juL\\_05.pdf](http://www.dme.gov.za/dna/pdfs/dna_regs_juL_05.pdf) (accessed 2008-05-04). GNR 721 was passed under s 25 of the National Environmental Management Act 107 of 1998.

<sup>104</sup>GNR 721 (n 103), s 3(1)(a) and (b).

<sup>105</sup>*Id* s 7(5)(f).

<sup>106</sup>DEAT *Global Climate Change and Ozone Layer Protection: Key Committees* available at [http://www.environment.gov.za/ClimateChange2005/Key\\_Committees.htm](http://www.environment.gov.za/ClimateChange2005/Key_Committees.htm) (accessed 2008-05-20).

<sup>107</sup>*Ibid.*

<sup>108</sup>*Ibid.*

<sup>109</sup>DME *Energy Key Documents* available at <http://www.dme.gov.za/energy/documents.stm> accessed 2008-05-17).

<sup>110</sup>DEAT *A National Climate Change Response Strategy for South Africa* (n 10) 29.

<sup>111</sup>Act 39 of 2004.

gas emissions and recognises the deleterious effects of greenhouse gases on the environment.<sup>112</sup>

Government has also issued a number of publications such as the White Paper on the Energy Policy of the Republic of South Africa<sup>113</sup> and the White Paper on Renewable Energy.<sup>114</sup> South Africa has also issued its Initial National Communication under the Convention<sup>115</sup> and its National Climate Change Response Strategy<sup>116</sup> pursuant to its international obligations.<sup>117</sup>

### ***Barriers to further CDM implementation in South Africa***

From the literature it is clear that capacity and awareness regarding climate change are lacking in government.<sup>118</sup> This is partly due to South Africa's history and its previous lack of participation in the international arena. Since climate change is a relatively new issue to South Africa, South Africa has not yet developed the capacity or expertise to deal sufficiently with climate change.<sup>119</sup> Since 1994 South

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<sup>112</sup>National Environmental Management: Air Quality Act 39 of 2004, Preamble. It also provides that provisional atmospheric emission licences and atmospheric emission licences must specify the greenhouse gas emission measurement and reporting requirements (s 43(1)(l)).

<sup>113</sup>DME *White Paper on the Energy Policy of the Republic of South Africa* (n 94).

<sup>114</sup>DME *White Paper on Renewable Energy* (n 95) at 27.

<sup>115</sup>*South Africa: Initial National Communication under United Nations Framework Convention on Climate Change* (October 2000) available at [http://unfccc.int/national\\_reports/non-annex\\_i\\_natcom/items/2979.php](http://unfccc.int/national_reports/non-annex_i_natcom/items/2979.php) (accessed 2008-05-02).

<sup>116</sup>DEAT *A National Climate Change Response Strategy for South Africa* (n 10).

<sup>117</sup>It should be noted that the Department of Environmental Affairs and Tourism (as it then was) commissioned a study inter alia to determine the various mitigation options that were available to South Africa in order to provide a sound basis from which a 'long-term climate policy' could be developed. See Scenario Building Team *Long Term Mitigation Scenarios: Strategic Options for South Africa* (October 2007) available at <http://www.environment.gov.za/HotIssues/2008/LTMS/A%20LTMS%20Scenarios%20for%20SA.pdf> (accessed 2009-01-24) 1. With reference to this document (and since the time of writing), participants at the Climate Change Summit 2009 held in Midrand, Gauteng (South Africa) committed themselves to an implementation plan, which called for a National Climate Change Response White Paper to be gazetted by December 2010, culminating 'in the introduction of legislative, regulatory and fiscal packages to give effect to the strategic direction and policy by 2012'. See Climate Change Summit 2009 *Towards an effective South African Climate Change Response Policy: Conference Statement* (2009-03-06) available at [http://www.csummit2009.co.za/Downloads/Media/2009.03.06\\_Climate\\_Change\\_Summit\\_2009\\_Statement.pdf](http://www.csummit2009.co.za/Downloads/Media/2009.03.06_Climate_Change_Summit_2009_Statement.pdf) (accessed 2009-03-11) 11.

<sup>118</sup>*Id* 10.

<sup>119</sup>*Id* 13.

Africa's policy makers 'have had to catch up on much lost ground'.<sup>120</sup> The lack of expertise at national level is even greater at the provincial and local government levels.<sup>121</sup>

Furthermore, climate change is only considered to be 'fairly important' in South Africa.<sup>122</sup> Government officials often see issues such as poverty and the housing backlog as more pressing social concerns and it has been said that they even see climate change 'as working against national development priorities'.<sup>123</sup> One can imagine that this perception would lead to reluctance on the part of government officials to seriously address climate change. Indeed government has acknowledged that the development of renewable energy sources has been overlooked.<sup>124</sup> This is unfortunate as dealing with climate change in terms of the international frameworks should be seen as an opportunity to promote sustainable growth.<sup>125</sup>

DEAT was designated as the lead department in respect of implementing South Africa's commitments under the Convention.<sup>126</sup> Although climate change is a 'cross-cutting issue', awareness as to the impacts of climate change exists only within the departments that are directly involved.<sup>127</sup> There is therefore a need to promote communication and coordination between different governmental departments, especially since the DNA of the CDM is housed in the Department of Minerals and Energy.

Although industry possesses more capacity and technical expertise than government, there are 'gaps of information across the board (and) no one seems to have the full picture of what is going on in CDM in South Africa'.<sup>128</sup>

Furthermore there is the view of the DEAT that

'(w)hereas it can be strongly argued that government, principally through DME and DTI, should create market conditions in favour of renewable energy and energy efficiency to attract foreign and local investment, the burden of proof that such an approach would be

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<sup>120</sup>Davidson, Tyani and Afrane-Okesse *Climate change, sustainable development and energy: Future perspectives for South Africa* (2002) available at <http://www.oecd.org/dataoecd/22/14/1934698.pdf> (accessed 2008-05-19) 24.

<sup>121</sup>*Id* 30.

<sup>122</sup>UNIDO *Clean Development Mechanism (CDM) investor guide: South Africa* (n 11) iii.

<sup>123</sup>DEAT *A National Climate Change Response Strategy for South Africa* (n 10) 10.

<sup>124</sup>DME *White Paper on the Energy Policy of the Republic of South Africa* (n 94) 79.

<sup>125</sup>Davidson, Tyani and Afrane-Okesse (n 119) 6.

<sup>126</sup>*Id* 14.

<sup>127</sup>DEAT *A National Climate Change Response Strategy for South Africa* (n 10) 10.

<sup>128</sup>Little, Maxwell and Sutherland (n 15) 405.

successful on a large scale rests with the proponents of such schemes'.<sup>129</sup>

While it is true that government has limited resources and capacity, it should not be accepted that government may exempt itself of all responsibility and place the onus of proof entirely on 'proponents of such schemes'. This attitude would clearly not promote the CDM nor promote the undertaking of measures to attract foreign and local investment.

It also appears that South Africa is not taking full advantage of funds made available under the Convention. As discussed above, the Convention requires that developed country parties provide financial, technological<sup>130</sup> and technical assistance<sup>131</sup> to developing countries to enable them to comply with their obligations under the Convention. South Africa needs to implement a strategy that puts in place 'appropriate systems and institutions' to effectively harness the financial resources that are available.<sup>132</sup> In respect of the CDM specifically, developed country parties were involved in (and therefore invested in) 9 of South Africa's 14 registered CDM projects (64.3%).<sup>133</sup> This is in contrast to Brazil where developed countries were involved in about 110 of its 145 CDM projects (75.9%).<sup>134</sup>

Another problem is the lack of public awareness regarding the impacts of climate change. This is also attributed to historical reasons.<sup>135</sup> More specifically, consumers lack the knowledge to make good choices about energy, such as using fuels and appliances that are energy efficient, which has negative consequences for economic competitiveness and sustainable development initiatives.<sup>136</sup> Furthermore, if the public lacks understanding of the serious implications of climate change, it would probably not support measures taken by government to deal with climate change if these are seen as taking precedence over other priorities such as poverty and health.

It is arguable that all of these factors have contributed to South Africa's failure to adequately promote the CDM and the consequent lack of interest in South Africa as a CDM investment location.

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<sup>129</sup>DEAT *A National Climate Change Response Strategy for South Africa* (n 10) 24.

<sup>130</sup>UNFCCC (n 12) art 4(3), (5).

<sup>131</sup>*Id* art 5(b).

<sup>132</sup>DEAT *A National Climate Change Response Strategy for South Africa* (n 10) 32.

<sup>133</sup>UNFCCC *Project search: South Africa* (n 102).

<sup>134</sup>UNFCCC *CDM: Project search: Brazil* available at <http://cdm.unfccc.int/Projects/projsearch.html> (accessed 2008-09-04). Note that these statistics are correct as of 2008-09-10.

<sup>135</sup>DEAT *A National Climate Change Response Strategy for South Africa* (n 10) 30.

<sup>136</sup>DME *White Paper on the Energy Policy of the Republic of South Africa* (n 94) 98.

## Brazil

### *Emissions*

Brazil's emissions profile is very different to that of South Africa. In 2005 Brazil produced 329.28 million tonnes of CO<sub>2</sub> from fuel combustion alone.<sup>137</sup> While this is very similar to that produced by South Africa, being 330.34 MtCO<sub>2</sub>,<sup>138</sup> the two countries differ drastically in terms of per capita emissions. Brazil's per capita emissions are only 1.77 t CO<sub>2</sub>/capita,<sup>139</sup> compared to South Africa's 7.04 t CO<sub>2</sub>/capita.<sup>140</sup>

This can probably be attributed partly to the fact that coal accounted for only five per cent of total energy consumption in Brazil, while hydro alone accounted for 35 per cent of total energy consumption as of 2004.<sup>141</sup> The contrast between these two emissions profiles is thus striking.

### *Brief overview of the CDM in Brazil*

Brazil's DNA is housed in its Interministerial Commission on Global Climate Change (Comissão Interministerial de Mudança Global do Clima)<sup>142</sup> ('the CIMGC'), which was especially created by presidential decree for the very purpose of coordinating government action.<sup>143</sup> The chair is the Minister of Science and Technology and the vice-chair is the Minister of Environment. It is furthermore composed of officials from a number of other ministries.<sup>144</sup> When it was determined that more political participation was required in certain sectors, the Brazilian Forum on Climate Change (Fórum Brasileiro de Mudanças Climáticas') ('the Forum') was created.<sup>145</sup> Such an emphasis on coordination and participation appears to be lacking in South Africa.

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<sup>137</sup>International Energy Agency *Key world energy statistics* (n 85) 48.

<sup>138</sup>*Id* 56.

<sup>139</sup>*Id* 49.

<sup>140</sup>*Id* 57.

<sup>141</sup>Energy Information Administration *Brazil: Background* available at <http://www.eia.doe.gov/emeu/cabs/Brazil/Background.html> (accessed 2008-05-14).

<sup>142</sup>UNFCCC *CDM: Designated National Authorities* available at <http://cdm.unfccc.int/DNA/index.html> (2008-05-16).

<sup>143</sup>UNIDO *Clean development mechanism (CDM) investor guide: Brazil* available at <http://www.unido.org/index.php?id=908> (accessed 2008-05-04) 4.

<sup>144</sup>*The CDM: A Brazilian implementation guide* (December 2002) available at [http://www.ahk.org.br/cdmbrasil/imagens/fgv\\_en.pdf](http://www.ahk.org.br/cdmbrasil/imagens/fgv_en.pdf) (accessed 2008-05-04) 13.

<sup>145</sup>UNIDO *Clean development mechanism (CDM) investor guide: Brazil* (n 142) 4.



Brazil currently has 145 CDM projects registered.<sup>146</sup> A number of these projects are concerned with producing energy from hydro and sugarcane bagasse, which is a residue produced from sugarcane processing and a renewable source of energy.<sup>147</sup> This represents a creative approach to finding alternative, renewable sources of energy. Indeed, sugarcane bagasse has been recognised as having considerable potential as a renewable source of energy in South Africa.<sup>148</sup>

One major difference between South Africa and Brazil appears to be the differing attitudes with respect to climate change and greenhouse gas emissions, which are considered to be 'very important' issues in Brazil.<sup>149</sup> While Brazil already has a 'relatively "clean" energy matrix',<sup>150</sup> the country recognises the importance of taking further advantage of renewable energy sources *inter alia* to 'delay the construction of new power plants, some of which will certainly be fossil-fuel thermal power plants'.<sup>151</sup>

Probably as a result of the greater importance attached to climate change, Brazil appears to have far greater capacity and has 'scientific and technical expertise to deal with climate change and the Kyoto Protocol (that) is probably unique among developing countries'.<sup>152</sup> This would arguably increase Brazil's capacity to develop viable CDM project activities.

## Promoting implementation of the CDM in South Africa

While South Africa is an energy-intensive country, this is positive in the sense that there is a lot of potential to improve energy efficiency and thus much potential for CDM projects.<sup>153</sup> Considering that the energy sector is the largest emitter of greenhouse gases, it is apparent that there is the most potential for CDM projects in this sector.

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<sup>146</sup>UNFCCC *Registered project activities by host party* (n 97). This figure is correct as of 2008-09-10.

<sup>147</sup>UNFCCC *CDM project design document form: Alta Mogiana Bagasse cogeneration project* available at <http://cdm.unfccc.int/UserManagement/FileStorage/QEBYT D8UYPEC1ZX2CI6ES4EJ5XPVGI> (accessed 2008-05-19) 2.

<sup>148</sup>Department of Minerals and Energy *White Paper on Renewable Energy* (n 95) 15.

<sup>149</sup>UNIDO *Clean development mechanism (CDM) investor guide: Brazil* (n142) vii.

<sup>150</sup>*Id* 5.

<sup>151</sup>*Id* 39.

<sup>152</sup>*Id* ix.

<sup>153</sup>UNIDO *Clean development mechanism (CDM) investor guide: South Africa* (n 11)) iii.

Potential CDM projects identified with regard to renewable energy relate to wind power, biomass and biodiesel, solar thermal electricity and photovoltaic solar power.<sup>154</sup> It has been recognised that the ‘theoretical potential of solar energy is by far the largest source in South Africa, larger than wind or coal’.<sup>155</sup> Projects that would replace coal with substances that produce fewer emissions such as natural gas should also be implemented.<sup>156</sup> A focus on renewable energy is especially important in South Africa in light of the current energy crisis. It would also go some way to providing South Africa with a *sustainable* energy supply, thereby contributing to South Africa’s socio-economic development, which supports the objects of the Convention. The South African government appears to have recognised the importance of renewable energy in that it has set a target of ‘10 000 GWh ... renewable energy contribution to final energy consumption by 2013’.<sup>157</sup> While it may not be within South Africa’s means to actually implement the type of projects referred to above, this is where the CDM comes in.

In this regard it has been recognised that ‘(t)he perceived efficiency of the government in a potential CDM host country influences investors’ decisions whether or not to invest in a country’.<sup>158</sup> It is thus crucial that government takes measures to increase its capacity and ‘perceived efficiency’.

The government needs to ensure that inter-departmental cooperation is promoted. Climate change and the CDM are cross-cutting issues and have implications for various government departments, including DEAT, the DME, the Department of Agriculture, the Department of Trade and Industry and the Department of Water Affairs and Forestry.<sup>159</sup> It would thus be instructive to adopt Brazil’s attitude with its emphasis on coordination and cooperation between various government departments. The role of the GCCC in ensuring communication and coordination between government departments

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<sup>154</sup>*Id* 13.

<sup>155</sup>*Id* 13.

<sup>156</sup>*Id* 11-12.

<sup>157</sup>Department of Minerals and Energy *White Paper on Renewable Energy* (n 95) 25.

<sup>158</sup>Ellis and Kamel (OECD) *Overcoming barriers to clean development mechanism projects* available at <http://www.oecd.org/dataoecd/51/14/38684304.pdf> (accessed 2008-05-15) 21.

<sup>159</sup>*South Africa: Initial National Communication under United Nations Framework Convention on Climate Change* (n 115) 53.

is crucial and should be intensified.<sup>160</sup> This body could also be responsible for increasing awareness in other government departments, besides the DEAT and DME, of the serious implications of climate change. It is arguable that coordination between government departments will increase consistency and thus the perception that government is acting efficiently and effectively. It might also be valuable to promulgate legislation or regulations dealing specifically with climate change and the CDM process and setting out precisely the functions of the various role-players.<sup>161</sup>

Education, training, awareness and capacity-building have been identified as areas that require immediate attention due to their 'lag behind the requisite standards'.<sup>162</sup> Measures to promote education, training, awareness and capacity building must be directed towards the public generally, as well as towards government officials who (as discussed above) often do not see climate change as a priority.<sup>163</sup> One way this could be addressed is by holding presentations and workshops for the benefit of government officials on the impacts of climate change and the need to take mitigating actions.

Education on climate change should also be implemented at the primary, secondary and tertiary levels as one step in promoting public awareness.<sup>164</sup> To this end the DEAT has produced a guide called *Learning about climate change: An environmental education learning resource for educators*. The guide aims to assist teachers to integrate climate change issues into the curriculum.<sup>165</sup> Awareness and education initiatives should also be directed at industry to enable industry, with its greater capacity and technical expertise, to play a larger role in driving the CDM.<sup>166</sup>

The DNA established a Promotions Sub-Committee during 2006.<sup>167</sup> Such a body would be responsible for promoting awareness of the CDM in South Africa. Due to the need for 'lots and lots of awareness on CDM ... the promotions sub committee ... has a really important role to play'.<sup>168</sup>

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<sup>160</sup>DEAT *A National Climate Change Response Strategy for South Africa* (n 10) 13.

<sup>161</sup>As noted in (n 117) such legislation is envisaged.

<sup>162</sup>*Id* 30.

<sup>163</sup>*Id* 10.

<sup>164</sup>DEAT *A National Climate Change Response Strategy for South Africa* (n 10) 30.

<sup>165</sup>DEAT *Resources: Schools* available at [http://www.environment.gov.za/ClimateChange2005/Resources\\_Schools.htm](http://www.environment.gov.za/ClimateChange2005/Resources_Schools.htm) (accessed 2008-05-19).

<sup>166</sup>Little, Maxwell and Sutherland (n 15) 405.

<sup>167</sup>*Id* 406.

<sup>168</sup>*Id* 409.

By promoting education, awareness and training on the effects of climate change, South Africa would also be complying with its obligations under article 6 of the Convention.

Public participation in issues around climate change and the CDM also needs to be encouraged. Thus, while the DME makes provision for the public to comment on proposed CDM projects, as of October 2005, it had not received a single comment on its website.<sup>169</sup> If comments have been received from the public since then, these are not displayed on the website of the DNA. The DNA could make public announcements through the media on proposed CDM projects and inform the public as to how they can get involved. This would serve the dual purpose of increasing public awareness as well as increasing public participation.

It has been recognised that industry possesses more scientific and technical expertise than government and that it should take a leading role with respect to the CDM.<sup>170</sup> While it is important that scientific and technical expertise be increased within government, cooperation between industry and government should also be promoted as an interim measure.<sup>171</sup> To this end, it would be helpful if a body such as the GCCC were responsible for ensuring optimal communication and cooperation between industry and government.

It is clear that China, India and Latin America are preferred locations for CDM investment. Government therefore needs to take measures to increase South Africa's attractiveness to CDM investors. One way to do this would be to 'develop and maintain an investment friendly climate to attract developed country partners to invest in climate change related projects in South Africa, primarily through the Department of Trade and Industry'.<sup>172</sup> South Africa furthermore needs to be proactive with regard to designing project activities in conjunction with project developers that will be viable when released into the market.<sup>173</sup> If government were to be proactive in these regards, this would arguably increase CDM investment in South Africa. This would also give effect to the 'need to move away from

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<sup>169</sup>Erion *Low hanging fruit always rots first: Observations from South Africa's cmony carbon market* (October 2005) available at <http://www.carbonradewatch.org/pubs/CDMsouthafrica.pdf> (accessed 2008-05-30) 49.

<sup>170</sup>Little, Maxwell and Sutherland (n 15) 398.

<sup>171</sup>DEAT *A National Climate Change Response Strategy for South Africa* (n 10) 30-31.

<sup>172</sup>*Id* 35.

<sup>173</sup>UNIDO *Clean development mechanism (CDM) investor guide: South Africa* (n 11) 23.

workshops and reports to action'.<sup>174</sup> The GCCC could be responsible for coordinating the development of CDM project activities between government and project developers. An enterprising approach adopted in some developing countries has been to use the website of the DNA to post CDM projects that are looking for developers.<sup>175</sup>

A further measure might be to introduce incentives such as tax relief for inter alia energy efficiency or renewable energy projects.<sup>176</sup> This would most probably motivate private players to initiate CDM project activities. Furthermore, it appears that a carbon tax is due to be introduced in South Africa in order to encourage the move towards more reliance on renewable sources of energy. While it is not yet clear what form the tax will take, it is estimated to 'start at low levels and escalate to higher levels by 2018'.<sup>177</sup> The promotion of energy efficiency and renewable energy projects could probably be furthered if there were more participants in the energy market. Since Eskom currently produces 95 per cent of South Africa's electricity,<sup>178</sup> government has acknowledged the need to encourage more players to enter the energy generation market.<sup>179</sup>

It has been recognised that CDM projects that benefit communities directly are likely to garner more support.<sup>180</sup> The Kuyasa low-cost housing energy upgrade (pilot) project in Khayelitsha<sup>181</sup> involved installing insulated ceilings, solar water heaters and low-watt fluorescent light bulbs in ten houses.<sup>182</sup> The community supported this project, which resulted in improved living conditions as well as employment opportunities and reduced electricity bills. It also resulted in carbon emission reductions of 2.85 tonnes per household per year.<sup>183</sup>

This kind of project emphasises the objectives of the CDM in that besides contributing to the ultimate objective of the Convention, it is also assisting South Africa to achieve sustainable development.<sup>184</sup> It is

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<sup>174</sup>Little, Maxwell and Sutherland (n 15) 409.

<sup>175</sup>Ellis and Kamel (n 157) 28.

<sup>176</sup>Discussed in Ellis and Kamel. *Id* 21.

<sup>177</sup>Salgado 'Carbon tax mooted' (2008-07-29) *Business Report* available at <http://www.busrep.co.za/index.php?fArticleId=4530610> (accessed 2008-07-30).

<sup>178</sup>Eskom *Company Information* available at [http://www.eskom.co.za/live/content.php?Category\\_ID=14](http://www.eskom.co.za/live/content.php?Category_ID=14) (accessed 2008-05-21).

<sup>179</sup>DME *White Paper on the Energy Policy of the Republic of South Africa* (n 94) 54.

<sup>180</sup>UNIDO *Clean development mechanism (CDM) investor guide: South Africa* (n 11) 9.

<sup>181</sup>This project was registered on 2005-08-27. UNFCCC *CDM: Project search* (n 102).

<sup>182</sup>Erion (n 167) 42.

<sup>183</sup>*Id* 42-43.

<sup>184</sup>Kyoto Protocol (n 45) art 12.

furthermore recognised in the Convention that the overriding priorities of developing countries remain the eradication of poverty and socio-economic development.<sup>185</sup> Therefore, South Africa needs to identify further CDM projects that will promote sustainable development by promoting social upliftment, in addition to reducing greenhouse gases. Indeed, government has recognised that sustainable development and climate change can be addressed in conjunction,<sup>186</sup> and furthermore, that renewable energy 'produced from sustainable natural resources will contribute to sustainable development', which would also improve energy security.<sup>187</sup> While the communities involved in such projects might not be concerned first and foremost with climate change and energy efficiency, if there are benefits for them, they are more likely to support such projects, which can only assist in further implementation of the CDM.

## Conclusion

It has been seen that while the obligations of developing countries under the Convention and the Protocol are not as onerous as those of developed countries, developing countries are still obliged to promote the ultimate objective of the Convention. The Protocol introduces three flexible mechanisms, which aim to assist developed countries in complying with their emission reduction targets. The clean development mechanism is of relevance to developing countries and serves the purposes of enabling developed countries to comply with their obligations under the Protocol, promoting sustainable development in developing countries, as well as promoting the ultimate objective of the Convention.

It has been seen that South Africa seriously lags behind other developing countries in terms of implementation of CDM projects. This paper looked briefly at the position in Brazil and identified a major difference between South Africa and Brazil as being the priority assigned to climate change in Brazil and the recognition of climate change generally as being an important issue.

It is clear that there are significant barriers to be overcome in South Africa including lack of governmental capacity and lack of education and awareness within government and the public generally. Nevertheless, as an energy intensive country, South Africa holds a lot of potential for increased energy efficiency and implementation of

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<sup>185</sup>UNFCCC (n 21) art 4(7).

<sup>186</sup>DEAT *A National Climate Change Response Strategy for South Africa* (n 10) 12-13.

<sup>187</sup>Department of Minerals and Energy *White Paper on Renewable Energy* (n 95) 26.

the CDM. In this regard it is essential that South Africa takes advantage of the ‘window of opportunity’ that is open to access international funding in the form of the CDM. This also has the potential to promote the ‘penetration of renewable energy into South Africa’s energy mix’,<sup>188</sup> which is consistent with South Africa’s goal of increasing the contribution of renewable energy to 10 000GWh of final energy consumption by 2013.<sup>189</sup> This would also contribute to increasing South Africa’s efforts to address climate change. Furthermore, by promoting inter alia education and awareness on climate change and its effects South Africa would be complying with its obligations under the Convention.

While the Convention identifies socio-economic development and the eradication of poverty as the most important priorities for developing countries, this is perfectly consistent with South Africa’s international obligation to take steps to mitigate climate change. To this end the CDM project activities developed by government in conjunction with project developers should, in addition to reducing greenhouse gas emissions, be aimed at increasing employment opportunities and social upliftment in general in order to contribute to socio-economic development. This will ensure that South Africa complies with its obligations under the Convention. In the end, ‘further intensive capacity building (is required to) ... unlock the extensive potential for CDM development in South Africa’.<sup>190</sup>

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<sup>188</sup>Department of Minerals and Energy *White Paper on Renewable Energy* (n 95) 11.

<sup>189</sup>*Id* 25.

<sup>190</sup>UNIDO *Clean development mechanism (CDM) investor guide: South Africa* (n 11) iv.