

Climate finance architecture in South Africa

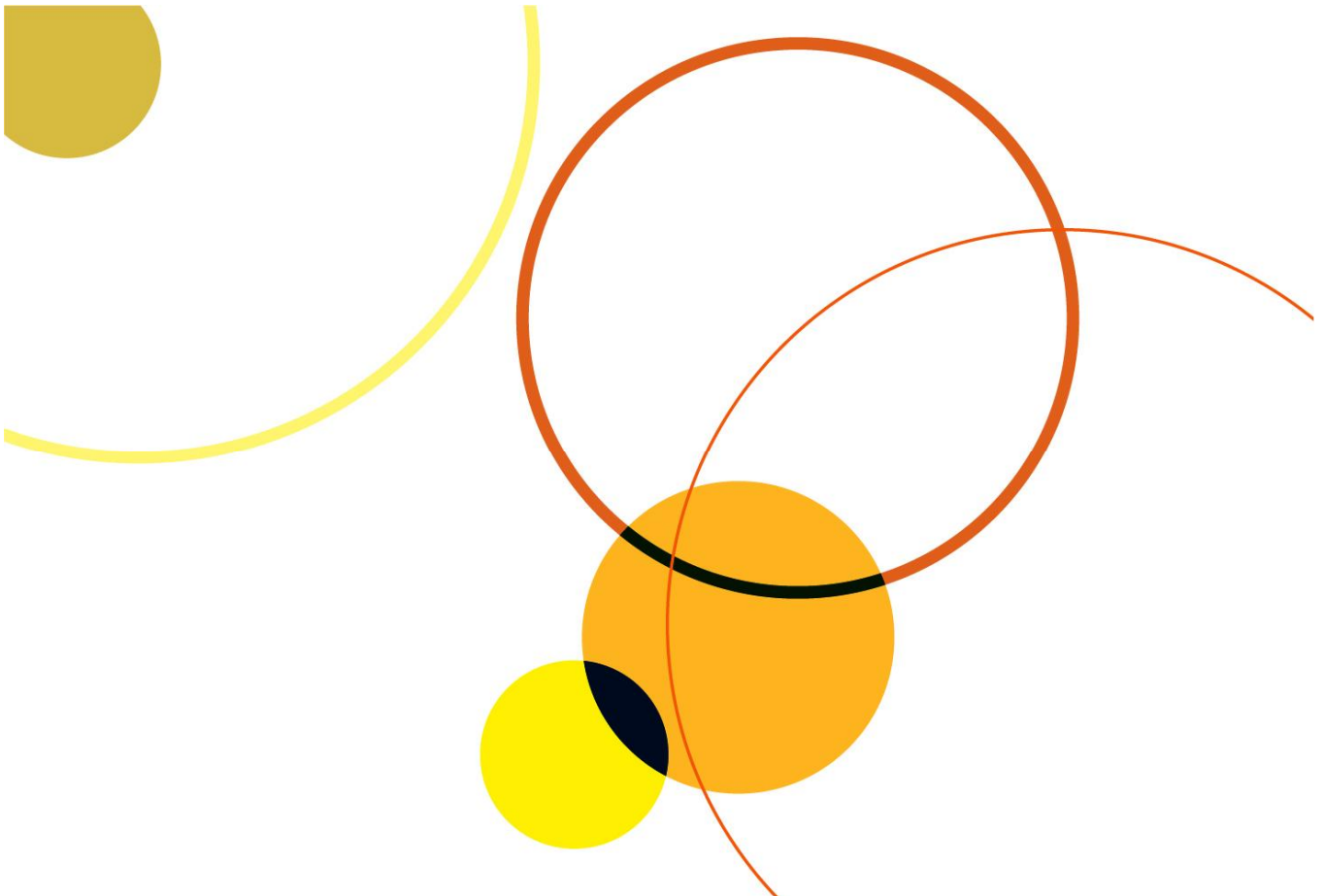
Paper prepared for DFID India

March 2012

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¹ Consortium comprises Harewelle International Limited, NR International, Practical Action Consulting, Cranfield University and AEA Energy and Environment



1 South Africa

South African climate finance is focussed in particular on reducing the country's current reliance on coal: the World Coal Association estimates that South Africa relies on coal for 93 per cent of its electricity production making it more heavily dependent than any other country in the world². At the same time, at the end of 2009 there were still 12.5 million people (25% of the population) without electricity. A large number of initiatives are focussed on addressing these twin challenges through increasing renewables deployment and improving energy efficiency. Some successes have already been recorded: in the Ernst and Young Renewables Attractiveness Index³, South Africa has risen from 27th in November 2010 to 16th in February 2012. This is the largest increase of any country in the top 30 countries in 2010.

1.1 Overall framework

1.1.1 Long Term Mitigation Scenarios – 2008:

In 2006 the South African cabinet tasked the Ministry of the Environment and Tourism with examining the country's mitigation potential. The results of this project were two main mitigation scenarios, from which the cabinet could draw up long-term climate policy: a 'Growth without constraints' scenario, in which South Africa takes no mitigation action before 2050; and a 'Required by science' scenario, in which South Africa undertakes full-scale mitigation. In between these two scenarios, a number of intermediate options were identified to move away from the business as usual path and onto the 'required by science' scenario. The report was officially published in 2008, and has influenced the design of South Africa's comprehensive Climate Change Response Policy (Department of Environmental Affairs and Tourism, 2007).

1.1.2 National Climate Change Response White Paper

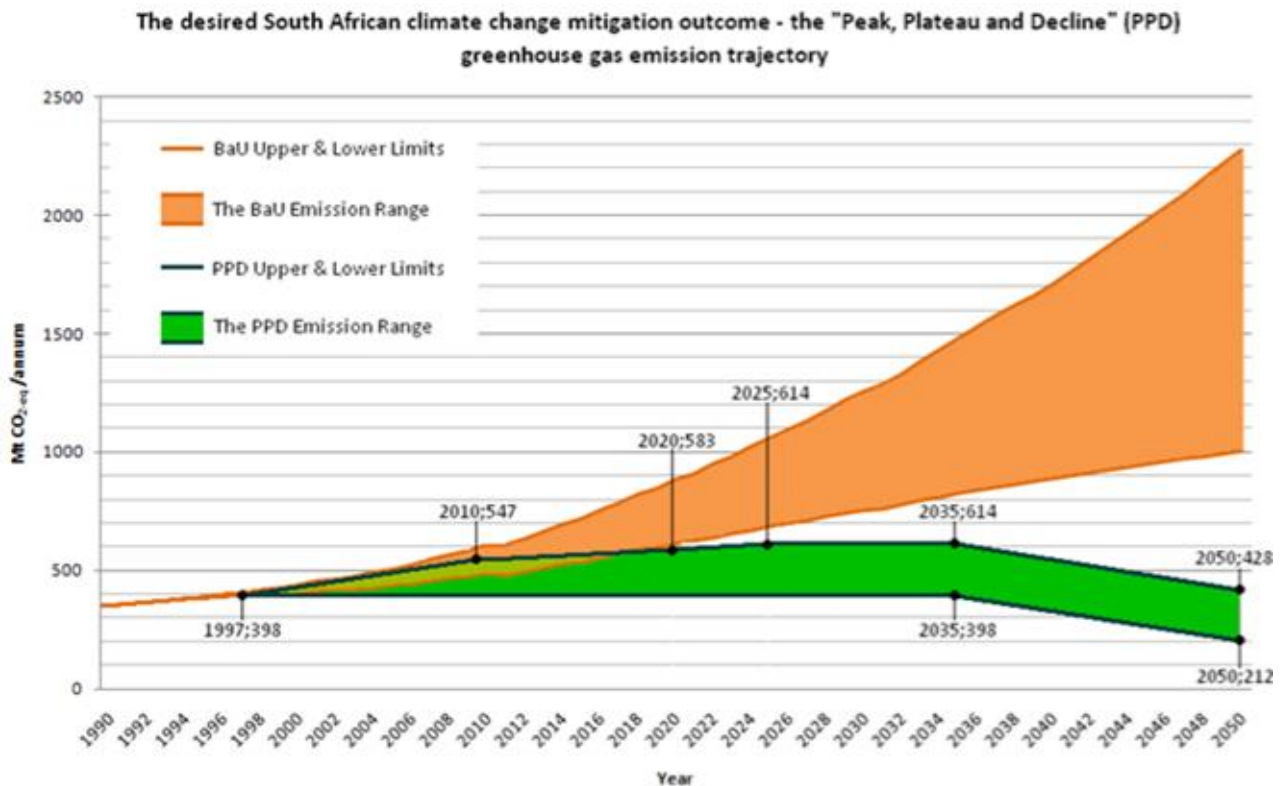
In October 2011 the government of South Africa released its National Climate Change Response White paper. This document sets out South Africa's general mitigation and adaptation strategy, as well as a number of near-term flag ship programmes, job creation actions, measures for mainstreaming climate resilient development, and monitoring and evaluation structures (Government of the Republic of South Africa, 2011). The white paper sets an initial greenhouse gas emissions trajectory range, which is described as 'peak, plateau and decline': emissions are to peak between 2020 and 2025 (below 614 Mt CO₂e in 2025), then plateau at or below that peak for 10 years, before declining from 2036 onwards towards a range of 428 to 212 Mt CO₂e by 2050. This compares to current (2010) emissions of approximately 530 Mt CO₂e, and a baseline projection of approximately 1600 Mt CO₂e for 2050 (Marquard, Trollip, & Winkler, 2011).

² <http://www.worldcoal.org/resources/coal-statistics/>

³ http://www.ey.com/GL/en/Industries/Oil--Gas/Oil_Gas_Renewable_Energy_Attractiveness-Indices



Figure 1. The emissions path envisaged in the National Climate Change Response White Paper is significantly below business as usual



Source: Department of Environmental Affairs, <http://www.climateaction.org.za/images/default-album/graph.jpg>

The following policies are mentioned as near-term priority flagship programmes:

- The Renewable Energy Flagship Programme; this includes actions to deliver 10,000GWh of renewable capacity by 2013 (Government of the Republic of South Africa, 2012), and to reach the longer term renewables targets set out in the Integrated Resource Plan for Electricity 2010-2030 (see below) (Department of Energy, 2011), using programmes such as SARi and the Renewable Energy IPP Procurement Programme.
- The Carbon Capture and Sequestration Flagship Programme; this includes the development of a CCS demonstration plant.
- The Energy Efficiency and Energy Demand Management Flagship Programme; this programme is in the development stage: ‘a structured programme will be established with appropriate initiatives, incentives, and regulation’ (Government of the Republic of South Africa, 2011).

Further flagship programmes mentioned in the white paper are the Climate Change Response Public Works Flagship Programme; the Water Conservation and Demand Management Flagship Programme; the Transport

Flagship Programme; the Waste Management Flagship Programme; and the Adaptation Research Flagship Programme.

1.1.3 Integrated Resource Plan for Electricity 2010-2030

In 2010, the Department of Energy released the Integrated Resource Plan (IRP), a document outlining the delivery of new power generation capacity between 2010 and 2030. The document is expected to be revised in 2012, and is generally described as a ‘living document that is expected to be continuously revised and updated’ (Department of Energy, 2011). It envisages the delivery of 17.8GW of new renewables capacity by 2030, as well as 9.6GW of nuclear, 2.6GW of hydro imports, and 12.6GW of fossil fuel (coal and gas) capacity. This constitutes approximately 43 per cent of all newly built capacity between 2010 and 2030 (total planned new built 41.4GW according to Revised Balanced Scenario), or approximately 41 per cent of all existing capacity (total existing capacity 43.9GW) (Department of Energy, 2011).

1.1.4 Financing Climate Change report

As part of the National Climate Change Response, the government of South Africa commissioned a synthesis report on the financing of South Africa’s National Climate Change Response Strategy. The key conclusion from this report is that South Africa urgently needs to create a national climate fund:

‘Mechanisms have emerged in response to environmental investment needs in developed and developing countries such as Brazil (Amazon Fund) and Bangladesh (Multi-donor Climate Resilience Fund). Although South Africa has several strong development institutions, there appears to be a need for [...] establishing a platform to attract climate finance in future’ (DBSA, 2011).

The report also finds that: ‘There is a critical need for South Africa to create an enabling climate investment environment to immediately commence the transition towards climate resilience and a greener economy’ (DBSA, 2011). To this end, ‘Government will establish an interim climate finance coordination mechanism to secure the necessary resources for mitigation and adaptation priority programmes’ (Government of the Republic of South Africa, 2011).

1.1.5 Adaptation policy

The National Climate Change Response White Paper contains an entire section dedicated to adaptation. The key provisions include a ‘risk-based process to identify and prioritise short- and medium-term adaptation interventions to be addressed in sector plans’ (Government of the Republic of South Africa, 2011), as well as reviews of adaptation strategies every five years. The identification and prioritisation of short- and medium-term adaptation actions is to be completed within two years after the publication of the White Paper. Sectors that are identified for short-term adaptation action include water, agriculture and forestry, health, biodiversity and human settlements.

However, besides the establishment of a sub-committee of the Intergovernmental Committee on Climate Change that is dedicated to adaptation, actual adaptation actions are thin on the ground. This may change as the identification and prioritisation of adaptation actions proceeds, and as individual sector strategies are published.



1.1.6 The role of provincial and local governments

In accordance with the Integrated Rural Development Programme and the Municipalities Act 32 (2000), local governments are mandated to develop Integrated Development Plans (IDPs). These IDPs are required to align with provincial and national development planning requirements. The provincial governments of Limpopo and Western Cape have used this to develop region-specific climate change adaptation and mitigation strategies (Madzwamuse, 2010).

However, while structures for inter-governmental cooperation exist, ‘these structures could be more effective’ (Madzwamuse, 2010). One example of this is the Committee for Environmental Coordination, intended to coordinate local, provincial and national environmental planning. ‘The CEC [...] is now totally defunct and no longer meets’ (Madzwamuse, 2010). Furthermore, local government frequently does not have the financial or human resources to support or encourage adaptation at the local level: ‘personnel, capital and running costs present real challenges for adaptive capacity at local and municipal level’ (Mukheibir & Sparks, 2006).

1.2 Arrangements using public resources

1.2.1 Eskom Renewable Energy Support Programme

This one-off programme, supported by a USD 350 million loan from the Clean Technology Fund, comprises two flagship renewable power plants: a 100 MW wind farm (Sere Wind Farm Project) and a 100 MW concentrated solar power (Upington CSP Project) (Clean Technology Fund Trust Fund Committee, 2010).

1.2.2 SARI

The South African Renewables Initiative (SARI) is a cross-departmental project led by the Department of Trade and Industry and the Department of Energy. Its key aim is to design and establish the financial arrangements needed to deliver the renewable energy deployment envisaged by the Integrated Resource Plan 2010 (SARI, 2011). It aims to do so while minimising the incremental cost burden to South Africa, i.e. the additional cost of sourcing electricity from renewables rather than from (cheaper) domestic coal.

It consists of both a domestic and an international element. The international partnership aims to raise finance from international donors. So far the governments of Denmark, Germany, Norway, Switzerland, and the UK, as well as the European Investment Bank, have expressed interest in supporting the SARI international partnership (SARI, 2011). The domestic element consists of coordination between the involved departments, and efforts to streamline the overall policy process.

SARI’s governance arrangements have not yet been finalised. Interim governance is provided by a Project Steering Committee. The committee is co-chaired by the Department of Trade and Industry and the Department of Energy. Further committee members are the Departments of Higher Education and Training, Science and Technology, Public Enterprise, Environmental Affairs, Economic Development, the National Treasury, and the Presidency. Operational management of SARI is located in the Department of Trade and Industry (SARI, 2011).



The Treasury's Renewable Energy IPP Fund, described below, may or may not become integrated into SARi: the National Treasury's 'renewables fund may provide one central facet of the overall SARi platform. The full functional design that will integrate the various aspects of SARi will be completed in early 2012' (SARi, 2011). In sum, it is not quite clear yet whether SARi will itself be a fund, whether it will be an umbrella that includes the Treasury's Renewable Energy IPP Fund, or whether it will include a fund other than the Treasury's (which, in turn, would stay outside SARi).

1.2.3 Renewable Energy IPP Fund

The South African National Treasury has proposed a concept for a Renewable Energy IPP Fund to support the Development of the Renewable Energy IPP Programme. This fund is currently at proposal stage, and will initially be aimed at the small projects (<5MW) tranche of the Renewable Energy IPP Procurement Programme (discussed below). Support is anticipated to consist mainly of concessional loans, and expectations are for the fund to be capitalised from international donor funds. The Development Bank of South Africa is envisaged to be the implementing agency in charge of disbursing funds (Public Finance Division, 2012).

1.3 Arrangements aimed at encouraging private sector investment

1.3.1 Policies to support large-scale grid connected renewable – REFIT and the Renewable Energy IPP Procurement Programme

Under a 2009 regulation made as part of the 2006 Electricity Regulation Act the Ministry of Energy was tasked with developing mechanisms for the promotion of renewable energy. One of the three mechanisms identified in the regulation was a feed in tariff, denoted 'REFIT' (renewable energy feed in tariff) (Department of Energy, 2009). However, the Ministry of Energy, ultimately decided to procure the first round of renewable energy projects using a competitive tender process. Whether or not REFIT or a similar policy will be used for future rounds of procurement remains unclear (van Dyke & Pollastrini, 2011).

The IPP Procurement Programme is intended to secure the construction of 3725 MW of renewable energy generation capacity. No date is given by when this capacity is to be delivered, but the final bidding round is set to close in August 2013. The first round of bids was due for submission on the 4th of November 2011, the second round on the 5th of March 2012. Preferred bidders from the first round have been announced in December, for a total capacity of 1416 MW, or 39 per cent of the total procurement programme (Department of Energy, 2012a). The programme covers seven different types of technology, each allocated a fixed capacity.⁴ Bidders compete on both price (tariff to be received by the project developer) and socio-economic development objectives, with price accounting for 70 per cent and socio-economic development objectives for 30 per cent of the bid assessment (Maimane, 2011).

⁴ Onshore wind, 1850MW; Solar PV, 1450MW; Concentrated Solar Power, 200MW; Small hydro, 75MW; Landfill gas, 25MW; Biomass, 12.5MW; Biogas, 12.5MW. In addition, 100MW of capacity is reserved for small projects of less than 5MW capacity. <http://www.ipp-renewables.co.za/index.php/about>



These policies are part of the Renewable Energy Flagship Programme mentioned in the National Climate Change Response White Paper.

1.3.2 Eskom Programmes for Energy Efficiency Standard Offer Programme for larger-scale commercial, agricultural and industrial energy efficiency

This consists of three separate programmes:

- The Standard Offer Programme for larger-scale commercial, agricultural and industrial energy efficiency;
- The Standard Product Programme for small-scale industrial, commercial and agricultural energy efficiency; and
- The Residential Mass Roll Out Programme for domestic energy efficiency

The Standard Offer programme is a performance based (per-kWh-saved) incentive for energy efficiency investments by commercial, agricultural and industrial energy customers. The total programme budget is ZAR 5.445 billion (USD 0.75 billion, INR 35.6 billion⁵) up until 2013, with approvals currently limited to ZAR 250 million (USD 35 million, INR 1630 million) per technology class.⁶ In addition each technology must deliver savings at an aggregate cost lower than ZAR 5.25 million (USD 0.7 million, INR 34 million) per MW. Any project using approved technology to save between 50kW and 5MW is eligible. The incentive is pegged at ZAR 0.42 (USD 0.06; INR 2.75) per kWh saved, and runs for three years. Savings have to be verified by an authorised independent measurement and verification organisation (Eskom, 2012a). The programme is administered and funded by the South African state-owned electric utility, Eskom.

The Standard Product (SP) programme provides specific rebates for eligible energy efficiency investments in industry, commerce and agriculture. The programme targets savings of between 1 and 100 kW, with energy savings of at least 2 MWh per annum. Customers wishing to participate in the SP must have fully paid up bills (Eskom, 2012b).

Under the Residential Mass Roll-out Programme, Eskom will pay for contractors to install certain energy efficiency technologies in customers' households, free of charge at the point of installation (Eskom, 2011a). Technologies likely to be covered by this programme include the replacement of incandescent lighting with CFL (compact fluorescent lamps) or LED lights; geyser (domestic water boiler) blanket and hot water pipe insulation; water-saving shower heads; and geyser controllers (Eskom, 2011b).

In addition, the Department of Energy stated in 2009 that over a period of five years, one million solar water heaters will be installed in households and commercial buildings (Department of Energy, 2012b). The programme is implemented by Eskom, which is providing rebates to households who install approved solar

⁵ This, and all currency conversions in this report, based on average 2011 market exchange rates.

⁶ Current technology classes include energy efficient lighting systems; building management systems; hot water systems; process optimisation; and industrial and commercial solar water systems. Industrial and commercial solar water systems are subject to a more lenient aggregate benchmark of ZAR 8.736 million per MW of saving delivered.



water heaters (Eskom, 2012c). Up until September 2011, 156,000 claims had been received and 122,000 solar water heaters had been installed (Eskom, 2012d)

1.3.3 Carbon Tax by 2013

South Africa is planning to introduce a carbon tax in 2013/14. The 2012 budget proposes a rate of ZAR 120 (USD 17, INR 785) per tonne of CO₂ equivalent, to increase by 10 per cent every year until 2019/20 (South African Revenue Service, 2012). Firms will initially only be taxed on 40 per cent of their total emissions. Companies in trade exposed sectors, as well as firms in sectors with high process emissions, can deduct another 10 percentage points each⁷. Agriculture, forestry and waste are entirely exempt until 2020. Companies can reduce their liability by another 10 percentage points by purchasing carbon offsets, but total tax liability must be at least 15 per cent of total emissions (except in the fully exempt sectors mentioned above), so that companies in trade exposed process emission intense sectors can only reduce their liability by 5 percentage points (South African Revenue Service, 2012).

⁷ So that companies in a sector which is both trade exposed and has high process emissions (e.g. cement, steel or aluminium) will only be taxed on 20 per cent of its actual emissions. Companies in trade exposed sectors where no high process emissions exist (e.g. oil refining or sugar) will be taxed on 30 per cent of actual emissions.



1.4 Overview of South Africa's domestic climate finance arrangements

Table 1. Arrangements for public funding for low carbon investment in South Africa

Instrument	Sources of funding	Institutional structure/governance	Implementation agencies	Financial instruments	Resource allocation (sector as well as adaptation/ mitigation split)
Eskom Renewable Energy Support Programme	— International public funds, i.e. the Clean Technology Fund	<ul style="list-style-type: none"> — Single project with no additional/new institutional governance — Loans disbursed by the World Bank (International Bank for Reconstruction and Development) and the African Development Bank 	— Eskom	— Concessional loan	— This project funds two power plants: a 100MW wind farm, and a 100MW CSP plant
SARi International Partnership	— International donor funds	<ul style="list-style-type: none"> — Yet to be fully determined — Interim governance arrangements consist of a steering committee co-chaired by the Department of Trade and Industry and the Department of Energy — Operation management currently lies with the Department for Trade and Industry 	— Yet to be determined	<ul style="list-style-type: none"> — Yet to be determined, — concessional loans have been proposed 	<ul style="list-style-type: none"> — Focus on mitigation through reduced emissions from the power sector — Aims to deliver 18 GW of renewable electricity generation capacity by 2030
Renewable Energy IPP Fund	— International donor funds	<ul style="list-style-type: none"> — Yet to be fully determined as Fund is still at conceptual planning stage — Proposal issued by Treasury 	— Yet to be determined	— Yet to be determined	<ul style="list-style-type: none"> — Support aimed at independent power producers (IPP) bidding for government tenders, i.e. focus on mitigation — Initial focus on small IPP procurement tranche (projects < 5MW)

Note: This overview does not necessarily give an exhaustive account of all relevant instruments

Source: Vivid Economics



Table 2. Arrangements for private funding for low carbon investment in South Africa

Instrument	Policy description	Forms of capital	Which parts of the private sector are involved?
Renewable Energy IPP Procurement Programme	<ul style="list-style-type: none"> — Procurement of renewable electricity generation capacity by means of technology-specific open and competitive tenders — Aims to deliver 3725 MW of capacity — Appears to have replaced feed-in tariff programme at present 	<ul style="list-style-type: none"> — Private investment capital 	<ul style="list-style-type: none"> — Independent power producers (IPPs)
ESKOM energy efficiency programmes Standard Offer Programme	<p>Standard offer programme</p> <ul style="list-style-type: none"> — Performance based energy efficiency incentive for commercial, agricultural and industrial customers — A per-kWh of energy saved incentive is paid for 3 years on verified energy savings made with certain eligible technologies <p>Standard product programme</p> <ul style="list-style-type: none"> — Rebates for small-scale investments in energy efficiency (1-100 kW, with at least 2 MWh of electricity saved p.a.) <p>Residential mass roll-out programmes</p> <ul style="list-style-type: none"> — A number of specific household energy efficiency technologies are made available to households free at the point of installation — Installation contractors bear the initial cost and are reimbursed by Eskom 	<ul style="list-style-type: none"> — Private investment capital 	<ul style="list-style-type: none"> — Commercial, agricultural, and industrial energy customers
Carbon Tax	<ul style="list-style-type: none"> — South Africa is planning to introduce a carbon tax in 2013/14 — This may spur investment in low carbon technology throughout the economy — Initial tax of ZAR120/tCO₂e (~USD16) proposed, to increase by 10 per cent per annum until 2019/20 — Initially firms will only incur a tax liability on 15 to 40 per cent of their emissions, depending on which sector they are in 	<ul style="list-style-type: none"> — Private capital 	<ul style="list-style-type: none"> — All sectors except for agriculture, forestry and waste

Note This overview does not necessarily give an exhaustive account of all relevant instruments

Source: Vivid Economics



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Contact us:

306 Macmillan House T: +44 (0)844 8000 254
Paddington Station E: enquiries@vivideconomics.com
London W2 1FT

Company Profile

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