

Climate Change Mitigation in South Africa Development Organization Activities and Clean Technology Fund

Introduction

In this report we map programs run by bilateral and multilateral development organizations in South Africa related to climate change mitigation excluding recently approved Clean Technology Fund (CTF) programs. The report is the result of several stakeholder meetings held during November 2010, including a multi-donor meeting convened on November 15, 2010 in Pretoria, to which all organizations known to be actively implementing or considering climate change related activities were invited. Additionally, organizations unable to attend were invited to provide updates on their current activities via email. The report is partly based on the International Donor Agencies section of the September 2009 report published by the World Bank titled “Climate Change: Who’s Doing What In South Africa?”¹, which also covers the activities of the Government of South Africa (GoSA) and Non-Governmental Organizations (NGOs). Blue text in Annex A indicates that the activities described are outlined in the World Bank report but no response or update was received from the relevant organization in time for this report’s circulation. A full list of participants in this process, and those interested in participating in this informal group going forward, is included in Annex B, while Annex C shows a summary table of climate change programs active and under discussion in South Africa.

Context

South Africa is the largest contributor to greenhouse gas (GHG) emissions in Africa and the 11th largest emitter globally. The country’s emissions per capita are about 10 tons of CO₂/person/year, the eighth highest in the world. The energy sector is the single largest source of CO₂ emissions, accounting for more than 70 percent of the total. This is mainly because of South Africa’s heavy reliance on coal to meet its primary energy needs (75% of total energy consumption and 93% of power generation was from coal in 2004) but also because decades of inexpensively priced power has created an economy that does not use electricity as efficiently as it could.

The private sector is generally well developed in South Africa but its participation in the energy sector, and in particular in power generation, has been limited by the dominance of the state-owned utility, Eskom, and by a number of other financial, institutional, and technical barriers. As part of the government’s efforts to address climate change, the National Energy Regulator of South Africa (NERSA) recently approved the Renewable Energy-Feed-in Tariff (REFIT) regime, in which a single buyer is required to purchase capped capacity amounts of renewable energy at set prices from independent power producers (IPPs). While this is a positive first step, REFIT is expected to be a limited program in its first phase. More recently, NERSA announced end-user tariff increases over the next three years which will start to close the gap between the cost of renewable energy and end-user tariffs. Meanwhile the energy supply/demand balance continues to deteriorate in the country and a Power Conservation Program is expected to be initiated which will constrain electrical consumption by large industrials in the near-term.

South African power costs have been historically low, with inexpensive and subsidized domestic fossil energy resources allowing large industrial and public sector customers to pay prices as low as R0.18/kwh (\$0.024). However, energy efficiency project economics are now improving

¹ http://durbanportal.net/ClimateChange/Reports/SA_Climate_Change_Mapping_Report_Final.pdf

rapidly due to the recent and planned increases in power tariffs. Several important and substantial energy efficiency markets are economical and commercially viable to develop now, with simple payback periods on energy efficiency investments of between 3 to 5 years such that projects can be self-financing from energy cost savings or energy sales revenue. Funding requirements for commercially viable energy efficiency investments over the next 3-4 years have been estimated at well over \$100 million. However financial institutions entering this market face a number of barriers, such as capacity-building and awareness-raising costs as well as institutional inertia.

Summary Findings of Existing RE/EE Programs in South Africa

Table 1 below provides a summary of the total size of climate change mitigation programs currently being implemented by development organizations in South Africa excluding CTF (numbers are approximate). It does not include GoSA activities specifically, however many of the donor organizations work through public sector institutions such as the Development Bank of South Africa (DBSA) to achieve their program objectives. Programs are divided according to whether they are ultimately targeting their investment or advisory support to public or private sector beneficiaries, and whether they focus on Renewable Energy (RE) generation or Energy Efficiency (EE) activities.

Table 1: Total size of active² climate change mitigation programs (\$m)

Type	Private		Private Total	Public		Public Total	Grand Total
	Advisory	Investment		Advisory	Investment		
EE	---	160.6	160.6	23.4	213.3	236.7	397.3
RE	20.2	47.4	67.6	120.9	313.9	434.8	502.4
Grand Total	20.2	208.0	228.2	144.3	527.2	671.5	899.7

It is worth noting the relative small size of private sector focused programs, particularly those focused on RE generation and in technical assistance more generally. This can probably be attributed to the expected lack of long-term sustainability of scalable RE generation projects until the REFIT regime kicks in.

Most of the private sector donor investments shown here (primarily by the German and French bilateral development agencies) have been made on a concessional basis through public sector institutions, since late 2009. However, there is little or no concessional lending currently available directly from international development organizations to private companies for RE or EE projects, with the exception of a regional FMO fund for which South African projects are eligible. Existing private sector investment programs in climate change mitigation can be broadly categorized as:

- (a) Concessional lending to South African government institutions, such as DBSA, for local on-lending to private companies or municipalities for energy efficiency projects. Whilst the effectiveness of this approach cannot be assessed at this early stage,

² Although the exact status of these projects is not crystal clear, we understand these projects are committed or disbursed. However there may be projects included here that are in late stage negotiations.

- credit lines to these institutions are still largely undisbursed and the local institutional capacity to deliver is not yet determined;
- (b) Concessional lending directly to private banks for local lending to private companies. These programs have faced implementation challenges in reaching agreement on pricing, reporting requirements and eligibility criteria with end clients and there are indications that eligibility criteria may result in a narrow target market which could impact deployment of donor funds. There is also a question of whether concessionality levels in these programs are too great to encourage long-term self-sustainability of the energy efficiency finance market once donor funds are no longer available;
- (c) A private equity fund investment targeting commercially viable projects.

Advisory programs focused on the private sector have been more sporadic in nature, lacking a full programmatic and coordinated approach, and mostly not underpinned by investment programs until recently (which arguably has hampered their impact in the past). However, GTZ's broad range of active and in-development programs is worthy of special note and could be very effective if coupled with appropriate access to finance.

Table 2 provides numbers for future programs currently in discussion, wherever those numbers were known.

Table 2: Total sizes of climate change mitigation programs under discussion³ (\$m)

Type	Private		Private Total	Public		Public Total	Grand Total
	Advisory	Investment		Advisory	Investment		
EE	Unknown	66.9	66.9	Unknown			66.9
RE RE / EE	Unknown	400.0	400.0	Unknown	133.9	133.9	133.9
Grand Total		466.9	466.9		133.9	133.9	600.8

It is worth noting that most of the private sector investment under discussion can be attributed to EIB, which does not provide concessional financing. Instead, EIB will fill a financing gap by providing funds only to projects that are already commercially viable – i.e. mostly the limited number of renewable energy generation projects benefiting from REFIT or lending to banks that already have EE products to support the natural growth of their existing EE portfolios. The remaining private sector investment funds are being discussed on concessional terms for the Industrial Development Corporation of South Africa (IDC) for on-lending to private companies for energy efficiency projects, similar to the concessional approach described in (a) under existing programs.

A fuller breakdown of these figures can be perused in Annex C. Please note that only donor organizations with a programmatic approach and able to disclose sufficient detail about their activities were included in these tables. A more comprehensive but qualitative description of all activities ongoing and in discussion is provided in Annex A.

³ By “under discussion” we mean projects planned or pledged.

Impact and Potential Gaps

Generally, there is little or no data on the results of existing climate change mitigation programs – advisory or investment – on the South African market; however the absence of large-scale renewable energy and energy efficiency projects implemented so far points to a limited impact. There are a number of potential explanations for this limited impact, including:

- a) RE projects are not commercially viable without some form of subsidy or regulatory intervention. Energy price hikes and the REFIT program are very recent reforms undertaken by GoSA to deal with this issue, but the results will not be felt until the new policies are fully implemented. Additionally, the reforms are limited, for example a limited number of RE projects will be accepted into the REFIT regime, which will not come into force until late 2011 in any case;
- b) South Africa has a well developed financial market, however only commercial financing has been available for EE projects until late 2009. Commercial financing does not address the risk perception, capacity and knowledge barriers identified in the private sector CTF proposal. At the same time, until the recently announced energy price increases, a large proportion of EE projects were not commercially viable due to long payback periods and high opportunity costs. Although project economics have now improved, commercial financial institutions are still hesitating to commit to new product lines with unknown/high perceived risk. New concessional finance programs initiated by donor organizations since 2009 are targeting this market barrier and trying to provide incentives for commercial banks to enter the EE lending market;
- c) There has been very little advisory work focused directly on private sector companies, which also require significant capacity-building to participate effectively in these new markets. Additionally, though some advisory programs started as early as 2006, they have mostly lacked a programmatic approach, and in the absence of concessional finance and appropriate regulatory frameworks, their impact has been limited.

Appropriately structured concessional finance and advisory programs can potentially bridge the gaps where government policy cannot be fully effective in the development of RE and EE markets. Specifically, they can help the private sector build the necessary capacity and risk tolerance to participate in such projects on a commercial basis going forward. The concessional finance programs established since late 2009 appear to recognize this need; however there is still a relative dearth of concessional finance and technical assistance available directly to the private sector for EE and RE generation projects. Additionally, the potential impact of the current concessional finance programs available is uncertain because:

- a) They are largely funneled through government institutions that may lack the appropriate capacity to implement;
- b) They have eligibility criteria which focus their impact on a limited segment of the market, potentially hampering their ability to gain traction and to catalyze market growth.

CTF Role

In light of these findings, we believe the proposed CTF Private Sector Program can complement existing donor organization activities by focusing on providing concessional finance and technical assistance directly to South Africa's industrial, energy and financial sectors.

Specifically, the RE generation component will provide much needed concessional financing to projects not able to obtain the proposed feed-in tariffs, or those that face early entrant costs higher than can reasonably be recovered under the feed-in tariff regime. It will also provide such finance to South Africa's first co-generation projects, which are not covered by the feed-in tariff regime and are considered borderline attractive on commercial terms. By engaging with project developers now, CTF will help to fast track project implementation and broaden the impact of the government's initiatives. The EE component, on the other hand, will combine technical advice with a concessional finance package to commercial banks and leasing companies not currently working with other donor organizations. Its objective will be to stimulate energy efficiency investments by coupling capacity building advisory work with minimum-concessional finance and support on reporting requirements.

The CTF proposal for a Solar Water Heating component is currently still under discussion. It is our understanding that DBSA has been given a mandate by the Department of Energy to coordinate and lead a national strategy for deployment of solar water heaters. We are therefore collaborating with DBSA on this strategy before considering a re-submission of the proposal.

Annex A: Mapping Of Development Organization Activity

This section describes the various activities being conducted by bilateral and multilateral development organizations in South Africa. This should be considered a living document and updated as frequently as the dynamic environment requires.

Bilateral Organizations

Germany: Total German financial commitment to climate change activities in South Africa is in the order of EUR 50-60m per year, mostly in soft loans implemented by German organizations Kreditanstalt für Wiederaufbau (KfW), Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), Deutscher Entwicklungsdienst (DED) and Internationale Weiterbildung und Entwicklung (Inwent). These agencies deal mostly at a government institution level, and their main partners in South Africa are the National Treasury, the Department of Energy (DoE), the Department of Environmental Affairs (DEA) and the Department of Science and Technology (DST). A collaboration agreement was discussed with the GoSA in 2010, with four focal areas: renewable energy, energy efficiency, mitigation/adaptation and green jobs. It is still to be agreed in its final version.

KfW's active programs include:

1. EUR 25m program with the Eastern Cape Province to install solar home systems with batteries in rural off grid areas.
2. EUR 50m loan and technical assistance package for a program seeking to roll out Solar Water Heaters (SWH) in partnership with the DBSA. However, DBSA is currently seeking citywide SWH programs suitable for this credit line, after the City of Johannesburg put their SWH roll-out program on hold.
3. EUR 5m in grants to municipalities for non-motorized transport projects.

In addition, KfW is in discussion to develop the following programs:

1. EUR 48m loan and EUR 2m technical assistance package for the Industrial Development Corporation of South Africa (IDC) to be used for energy efficiency projects;
2. EUR 100m loan to South Africa's electricity public utility (Eskom) for a loan for Concentrated Solar Power (CSP) projects.

GTZ is active in all of the cooperation areas mentioned above and has a budget of EUR 14.5m from the Federal Ministry for Economic Cooperation and Development (BMZ) over 3 years as well as approx. EUR 2m per year from the Ministry for the Environment (BMU).

GTZ's active programs include:

1. Technical assistance to the Department of Energy and Eskom in grid and system integration of renewable energy.
2. Support to the establishment of the South African Wind Energy Centre, a national research, demonstration and training centre for wind energy.
3. Energy Auditor Training Project in cooperation with the Department of Environmental Affairs, Indalo Yetho, DoE and the National Energy Efficiency Agency (NEEA)
4. Cooperation program with DEA, supporting the Department in the drafting and implementation of the national climate policy as well as the hosting of the 17th Conference of the Parties in 2011 in South Africa. A new component on Monitoring, Reporting and Verification systems is planned, as well as a project on halogen free cooling systems in the transport sector.

GTZ's programs currently in development include:

1. Support to a centre for solar energy (in particular CSP) under a technology cooperation framework.
2. A project to assist the Department of Energy and the Public-Private Partnerships Unit within National Treasury with the establishment and operation of an Independent Power Provider Unit (focusing on Renewable Energy Feed-In Tariff – REFIT - implementation, technical capacity in wind, solar and biomass).
3. A project to support renewable energy at the municipal level (focusing on learning networks, strategy development and implementation).
4. A comprehensive program to support DoE in the implementation of their energy efficiency policy (incl. solar water heaters). Components of this program will include capacity building at NEEA, establishment of an Energy Auditor Program, Energy Service Company market development and support to the implementation of the Solar Water Heater Initiative.
5. A feasibility study for a component called “Skills Development for Green Jobs”.

The German Chamber of Commerce and Industry is also active in South Africa and has hosted several workshops to inform German and South African companies on the growth opportunities of PV and solar thermal heating in South Africa; the Chamber has also established an affiliated non-profit entity, the Southern African Biofuels Association, and has conducted training workshops in SWH installation.

France: The Agence Francaise de Developpement (AFD)'s intervention in the climate change space in South Africa is mostly in the form of soft and commercial loans of minimum EUR 10m with tenor between 10 and 20 years. AFD has invested EUR 1.5bn in South Africa since 2005, and provided grants of EUR 13m in that time for project studies and capacity building. AFD supports South Africa's Energy Strategy with EUR 326m in loans and EUR 2m in grants, deployed in the following active programs:

1. Sere Wind Farm Project, through a EUR 100m loan to Eskom.
2. Concessional loans of EUR 120m total (EUR 40m each) to Absa, Nedbank and IDC to be deployed on energy efficiency projects of maximum ZAR 10m in size. A tight definition of energy efficiency is applied in assessing project eligibility. Concessional terms are negotiated on the basis of the average cost of capital faced by the bank and on what the bank believes are the necessary offer rates to entice clients; negotiations also try to balance how much concessionality is passed on to the bank's clients versus how much is used for the bank's own capacity building. Agreeing reporting requirements with clients is challenging. AFD also provides technical assistance to build the bank's capacity to market and sell energy efficiency loans.
3. Support for municipalities, such as eThekweni on its Sustainable Energy Plan. AFD is providing a ZAR 1bn soft loan and ZAR 5m grants to support energy efficiency in public buildings, development of small hydro plants and SWH deployment, though the structure for the latter is unclear. They are also supporting a landfill gas project and offer short term missions to strengthen the municipality's energy office.
4. Technical assistance for DBSA on climate change research and operational processes; supporting the Central Energy Fund (CEF) in conducting feasibility studies for new energy projects; supported (and sit on the board of directors) of the South African Carbon Capture and Storage (CCS) Center.

AFD is also considering involvement in the Eskom solar program.

Switzerland: The Swiss Agency for Development and Cooperation (SDC) concentrates on one climate change related issue in South Africa: energy efficiency in the housing sector. SDC's Energy Efficient Building Program has three dimensions: policy, capacity building, and implementation activities. The agency focuses on energy efficiency in cities, recognizing the existing difficulties of implementing energy efficiency initiatives at local levels. SDC plans on providing support, to medium-sized cities that have very little in the way of climate-related planning. The program budget totals CHF 16m over four years.

SDC supports:

1. Capacity building for monitoring of energy efficiency in the building and residential sector—all of which were identified as pressing needs by the agency.
2. The clay brick sector, where SDC facilitates the introduction of new and vastly more efficient kiln technology. The agency plans to finance several large pilot projects demonstrating energy efficiency in house construction.
3. Research in construction materials and methods contributing to energy efficiency, more energy efficient technologies, and development of implementation models.
4. Capacity building in the construction sector by training in energy efficient production, construction, and life cycle designs.

Finland: Finland is now shifting its development cooperation - like many other donors, away from country-level programs and toward regional programs. The main climate related regional programs are in the fields of renewable energy and meteorology. Finland together with Austria launched the regional Energy and Environment Partnership Program in early 2010. This EUR 9.5m Program provides part financing to selected projects in the field of renewable energy and energy efficiency, open to applicants in South Africa and other Southern Africa countries. The program is open to proposals from all sectors, but its primary target is the private sector, intending to "fill in the gap between good ideas and bankable projects or businesses" by financing feasibility studies or financing pilot and demonstration projects in renewable energy and energy efficiency of all kinds. The program's Regional Office is hosted by DBSA.

Netherlands: the Royal Netherlands Embassy (RNE) financed the feasibility study for the Bethlehem Hydro project and the set-up of a website intended to facilitate carbon trade in the region ("*Carbon Finance Africa*"). Currently, the RNE is:

1. Funding a research partnership on high-carbon sequestering Spekboom plants with Wageningen University that is ultimately expected to result in a Spekboom-planting effort in the Bavianskloof region;
2. helping to develop sustainable biomass supply chains for biogas projects from residue waste;
3. Helping to promote certified sustainable energy from oilseed crops by developing a certification system addressing indirect impacts of biofuel from various crops.

FMO, the Dutch Development Bank, and the Dutch government, recently initiated the Access to Energy Fund (AEF), a vehicle to fund private sector projects that create sustainable access to energy services. By providing financing for projects involved in the generation, transmission or distribution of energy, the Fund hopes to ultimately connect 2.1 million people in developing countries by 2015. Project diversity can fall under a wide range of possibilities from new initiatives to established facilities requiring rehabilitation; from renewable energy to traditional sources; through direct project investments or even by catalyzing a broader project group through targeted energy investment funds. The AEF can provide equity financing up to an

amount that is the lesser of EUR 10 million or 75% of a total transaction amount. Subordinated debt/senior loans can be made in the amounts of the lesser of EUR 20 million or 75% of total transaction. The fund can offer longer grace periods and longer tenors often necessary to get such projects off Energy for growth the ground. The AEF can also play a role in the development of new projects by providing grants, normally linked to a debt or equity financing from the Fund in the overall project. Furthermore, the AEF can facilitate financing in USD, EUR or local currencies. The total fund currently (2007) consists of EUR 70 million. The AEF's preference is for distribution projects. Each AEF financing strives to contribute to at least 50,000 people obtaining sustainable access to energy. FMO is targeting at least 75% of the total AEF capital for Sub-Saharan Africa and/or Least Developed Countries and a maximum of 25% in other emerging markets. A maximum of 40% of AEF's capital can be invested in one single country at a time and a maximum of 40% can be invested in one single client.

United Kingdom: In 2007, climate change became more of a strategic priority for the Foreign Ministry, leading to nine "Low Carbon High Growth" projects totaling just over R27 million, more than half of which goes to recipients other than the national government. Various Low Carbon High Growth projects promote "climate leadership" within the private sector, South African cities, regional governments, Parliament, and the National Energy Regulator (NERSA) or help build capacity within DoE to make use of the Clean Development Mechanism (CDM). For instance, the British High Commission is working on establishing a National City Energy and Climate Protection Agency as a resource and network for cities to exchange experiences and support one another in their mitigation endeavors. The Department for International Development (DFID) is involved in an industrial energy efficiency project (see *UNIDO* below).

Denmark: The Danish International Development Agency's (DANIDA) has provided significant support to the national government with respect to renewable energy development, particularly wind. DANIDA:

1. co-financed the Darling Wind Farm;
2. Is working with the Department of Trade and Industry (DTI) on developing an industrial strategy for the wind sector in South Africa.
3. Is co-financing the wind resource atlas with United National Development Program (UNDP).
4. Is supporting DoE in building a national business case for all renewable energy sources, delineating how renewable energy projects could be financed in the country with the end goal of receiving more financing from National Treasury in the next years.
5. Provides capacity building for the Designated National Authority (DNA) for the CDM.
6. Is working closely with the Department of Housing to "green" low-cost housing (for instance by fitting houses with solar water heaters).
7. Funds skills development for solar water heating, promoting Basa Njengo Magogo methodology and producing a national report of small-scale emissions sources from low-income communities.
8. Provides financing to large municipalities, especially under its *Urban Environmental Management Program*, which allocated R15 million each to the cities of Cape Town, eThekweni, Ekurhuleni, and Johannesburg to implement projects for greenhouse gas mitigation.

DANIDA's portfolio of programs in South Africa will likely be substantially downscaled in the next decade, and there will be a shift towards regional programs with a greater focus on regional cooperation, especially with research institutions and the private sector. As part of its shift towards regional, partnership-facilitating support, DANIDA is preparing a R100 million renewable energy program to promote renewable energy technologies in southern Africa.

Norway: The Embassy of Norway has three ongoing bilateral programs in their final stages (ending in 2010) with links to climate change, and which focus on cooperation with key departments: DEA, DST, and DoE. The cooperation with DoE included capacity building and project support to CEF for renewable energies (wind, small hydro, and biofuels), and supporting NEEA's solar powered traffic lights initiatives. The Norwegian government, along with the UK, has also pledged financial and technical support to the South African Centre for CCS for the next five years, which is the first of South Africa's National Energy Research Institute's (SANERI) research centers.

Sweden: The Swedish International Development Agency (SIDA) has been developing a new, more holistic country strategy for South Africa (and Botswana and Namibia). Though its specificities are unknown at the time of writing, environment and climate change are likely to be one of its thematic areas—a new area of involvement for SIDA in South Africa.

Australia: In a joint letter of intent, signed in February 2010, Australia and South Africa have agreed to identify, develop and implement a further program of joint activities that will focus on:

- economic instruments to address climate change;
- climate change impacts and adaptation in the agriculture sector;
- climate change and biodiversity; and
- greenhouse gas emissions reporting and monitoring at national and entity levels;
- exchanging experiences and lessons learned on climate change policies and measures - with a particular focus on clean coal technologies and regulatory and institutional frameworks.

Japan: Potential support from the Japan International Cooperation Agency (JICA) is in identification stages; however, the agency confirmed in 2009 that it is planning a climate change related project.

Multilateral Organizations

The **World Bank (IBRD)** is working on the development of renewable energy by financing the following projects:

1. USD 160m has been allocated to Eskom for the Sere Wind and Uppington Solar projects, in addition to USD 350m in concessional loans from CTF administered by IBRD in collaboration with the African Development Bank (AfDB). Board approval for this investment is expected in Jan-Feb 2011.
2. USD 20m in loans to Eskom to help them develop and implement a Demand Side Management (DSM) program.
3. Technical assistance to the Public Private Partnerships (PPP) unit of the National Treasury, specifically on the regulatory frameworks necessary to encourage and enable IPPs.
4. Technical assistance in the form of capacity building is also provided to DEA and NERSA.
5. USD 17m program (the REMT Project) providing grants to companies seeking to develop renewable energy projects – to help developers get projects to a bankable stage. The program also offers performance-based grants to SWH manufacturers and installers on the basis of the technical quality and energy efficiency performance of their

products. It is co-funded by the Global Environment Facility (GEF), DBSA and the private sector, and managed in partnership with DBSA.

International Finance Corporation's (IFC) first climate change related investment in South Africa consisted of an equity position in a clean technology private equity fund – the Evolution One Fund. Since then, IFC has collaborated with AfDB on the CTF Country Investment Plan for South Africa, and subsequently two programs were approved by the CTF Trust Fund Committee in October 2010, totally USD 100m for investment and advisory projects. The first will be dedicated to provide financing and advisory services to renewable energy project developers; the second will provide financing and advisory services to financial intermediaries to help them establish energy efficiency loan or leasing products. With guidance from GoSA and in consultation with stakeholders, IFC and AfDB are working on a further proposal for a USD 50m program of investment and advisory projects specifically targeted at the SWH market.

AfDB has two investment windows: Sovereign Guaranteed Operations (public sector projects funded through governments on concessionary terms) and Non Sovereign Guaranteed Operations (private sector projects financed on commercial terms). The AfDB's allocation to South Africa under the public sector window is focused on infrastructure projects (80%) mostly in energy and transport, with the former as a priority. As such, AfDB provides financing for Eskom and is co-managing the USD 350 million CTF resources mentioned above alongside IBRD.

Under the private sector window, the Bank's role is to improve the enabling environment for the private sector and to create catalytic and demonstration effects by assisting entrepreneurs with specific transactions in infrastructure, industries and services along with financial intermediation. Most of the AfDB's support to South Africa is for infrastructure either by directly funding State Owned Enterprises or through Sub-regional Development Financial Institutions such as DBSA and IDC or the major commercial banks for on-lending to Small and Medium Enterprises (SMEs) in Southern Africa. Additionally, AfDB is co-managing the USD 150 million allocated to private sector projects under the CTF Country Investment Plan for South Africa, alongside IFC. AfDB also invests in infrastructure-centric funds such as the Evolution One Fund and the African Infrastructure Investment Fund 2 that are actively developing renewable energy assets in Southern Africa. From an institutional perspective, AfDB recently merged a number of functions into a new department to bring together and provide a greater impetus to climate change and energy initiatives.

The European Investment Bank (EIB) only lends in South Africa with its own resources. Its budget allocation for 2007-2013 was EUR 900m in the country, and almost 80% of which has already been committed, with the rest expected to be committed next year. EIB finances primarily infrastructure projects directly or through intermediaries. Beneficiaries include municipalities, Eskom, DBSA, IDC, and commercial banks, amongst others. EIB financing is mostly in the form of senior loans with long tenors and commercial terms, however its rates are competitive due to its AAA rating and the large amounts of funding raised in the international markets.

More recently, EIB has started managing a global facility of EUR 3bn for energy efficiency and sustainable energy on behalf of the European Union (EU). The facility targets investment grade countries, and an approximate allocation of 10% is expected for South Africa. Although EIB will have fairly flexible definitions of eligible projects for this envelope, in principle, investments must be made in investment grade companies or entities (however, EIB does have a small facility in structured finance for non-rated entities).

So far, EIB has made a EUR 40m loan to Rand Merchant Bank to finance energy efficiency projects in eThekweni. They also discussed SWH with eThekweni, but found the same challenges as other financiers regarding regulatory and structural uncertainty. EIB targets loan sizes of EUR 40-50m minimum. EIB is exploring the provision of technical assistance to the Government in renewable energy and energy efficiency, given their extensive experience financing such big projects in Europe.

EIB has a second renewable energy project in its portfolio: a EUR 40m loan for the construction of thin-film PV modules to be built in Paarl in the Western Cape.

The Delegation of the European Union has an agreement with GoSA to engage in an energy dialogue focused on CCS, nuclear power and energy efficiency – most progress to date has been on the first. The EU issued a call to tender to fund capacity building projects in the field of CCS, under which South Africa will receive a grant of over EUR 400,000. In relation to energy efficiency, within the framework of the EU Energy Initiative Partnership Dialogue Facility, GoSA expressed its interest in obtaining technical assistance for developing an energy efficiency regulatory framework. The Delegation currently awaits specific details of this request.

United Nations Environment Program (UNEP) launched its Clean Tech Readiness Program in South Africa in 2010. Ongoing UNEP climate change mitigation efforts include:

- The African Carbon Asset Development (ACAD) Facility, launched in 2009. Standard Bank is the key local implementation partner. ACAD focuses on building the capacity of the African financial sector to identify and appraise CDM opportunities. Financial sector training and developer one-on-one project clinics are integral components of the program. Two of the projects in the first phase are in South Africa: a cogeneration project and a clay-brick energy efficiency plan of action.
- UNEP's Seed Capital Assistance Facility (SCAF) is a jointly-managed facility with the African and Asian Development Banks. In South Africa, SCAF has invested in the Evolution One private equity fund.
- UNEP works in partnership with the Universities of Cape Town and Stellenbosch to enhance information for Renewable Energy Technology (RET) deployment in South Africa. The project goal is to support policy planning by providing high quality information on available solar and wind energy resources. The project will produce two outputs: a stock-taking of information needs regarding solar and wind energy resource potentials, and a range of evaluations of the effectiveness of alternative policy instruments for key solar and wind technologies.
- The 2nd African Carbon Bankers Forum, supported by UNEP, was held in Johannesburg in November 2010. This included training for local banks and local entrepreneurs in sub-Saharan Africa.

UNEP is planning to support development of a CSP plant in South Africa, following a request from Eskom for assistance with the resource potential information required for the planned 100 MW installation. UNEP's immediate priority in South Africa is now a planned National Solar Water Heater Demonstration Program. The program will include developing a financial mechanism to ensure the sustainable, independent operation of the SWH market in the long term. DoE has requested support from UNEP, with particular focus on a clear exit strategy for the Government.

The **Renewable Energy and Energy Efficiency Partnership (REEEP)** is an NGO whose mission is to catalyze the development of renewable energy and energy efficiency markets in developing countries. Through funding from several European governments, it has financed several small-scale projects in South Africa, focusing especially on SWH with ongoing advisory projects totaling around \$750,000 in partnership with investors and municipalities.

The **Global Environment Facility (GEF)** finances several projects in South Africa amounting to a total of approximately USD 60 million. The majority of these projects are renewable energy focused. In addition to these, GEF started financing a project entitled “*Market Transformation through Energy Efficiency Standards & Labeling of Appliances in South Africa*,” which is implemented by the **United Nations Development Program (UNDP)**, as are several of GEF’s other programs in the country. This project will work with DoE to weaken the barriers that constrain the spread of energy efficient domestic appliances, notably by focusing on standards and labeling. DoE would use GEF funds to further consumer awareness and for informational campaigns, as well as to target retailers, support manufacturers, and build institutional capacity to formulate standards and labeling policies.

The **United Nations Industrial Development Organization (UNIDO)** is involved in two mitigation projects in South Africa. In its largest project, UNIDO is implementing an Industrial Energy Efficiency Improvement project financed by GoSA, the Swiss State Secretariat for Economic Affairs (SECO) and DFID. The project is housed within the National Cleaner Production Centre (originally established with the help of UNIDO) so as to strengthen its capacity to provide energy efficiency services to industry. UNIDO will build the capacity to develop and implement national energy management standards in South Africa in line with the international ISO 50001 standard. Assessors, auditors, consultants, as well as energy managers at the plant level will be trained to implement a system optimization approach and energy management standards. The project works closely with DoE and the National Treasury to support the development and adaptation of a conducive energy policy including supportive regulations and financial schemes.

UNIDO is also implementing a project in eThekweni Municipality, which, based on a partnership between the municipality, the Durban Investment Promotion Agency, and the city’s industrial sector, implements climate change mitigation actions. The project has begun by focusing on assisting three pilot sectors (including the automotive sector) with a toolkit, training, and expertise to ultimately sign a sector-specific agreement with the main stakeholders. If successful, the project would then be rolled out to other sectors.

The **United Nations Institute for Training and Research (UNITAR)** has funded activities that lead to institutional and capacity building at the Climate Systems Analysis Group (CSAG) and the Energy Research Centre (ERC) of the University of Cape Town, South Africa and the eThekweni Municipality since 2006. “[Capacity Development for Adaptation to Climate Change & GHG Mitigation in Non-Annex I Countries](#),” (C3D+) seeks to enhance the training capacity of southern regional centers of excellence to address key problems arising from the interaction of climate change and sustainable development. Six regional centers of excellence form a network that pools their specific technical expertise in the areas of climate change mitigation, adaptation, vulnerability assessment and sustainable development. The activities UNITAR was able to implement in South Africa were made possible through the grant contributions from the European Commission, the Swiss Federal Office of the Environment (FOEN), ETC Netherlands, the UK Department for Environment Food and Rural Affairs (DEFRA) and the International Development and Research Centre (IDRC Canada).

Annex B: Discussion Participants

Organization	Contact name	E-mail
AFD	Damien Navizet Stephane Tromilin	Navizetd@afd.fr tromilins@afd.fr
AfDB	Hussein Yusuf Iman Babu Ram	h.iman@afdb.org b.ram@afdb.org
British High Commission	John L Smith	John.l.smith@fco.gov.uk
DANIDA	Carsten Laugensen	carsla@um.dk
DEG	Michael Fischer	Michael@deginvest.co.za
Dutch Ministry of Foreign Affairs	Jan Cloin	Jan.cloin@minbuza.nl
EIB	Alfredo Abad	abad@eib.org
EU Delegation	Natalija Dolya	Natalija.dolya@ec.europa.eu
Finnish Ministry of Foreign Affairs	Katriina Koivisto	Katriina.koivisto@formin.fi
FMO	Diana Wesselius	Diana.wesselius@fmo.nl
GTZ	Daniel Werner	Daniel.werner@gtz.de
IBRD	Andrey Gurevich	agurevich@worldbank.org
IBRD/GEF	Karan Capoor	kcapoor@worldbank.org
IFC	Christelle Beyers Tom Butler Rob Heffernan	cbeyers@ifc.org tbutler@ifc.org rheffernan@ifc.org
JICA	Iwao Sakurai	sakurai.iwao@jica.go.jp
KfW	Harald Gerding Georg Gruener	Harald.gerding@kfw.de Georg.gruener@kfw.de
Norwegian Ministry of Foreign Affairs	Tim Lund	Tim.lund@mfa.no
SDC	Beat Hagmann	Beat.hagmann@sdc.net
SIDA	Mariann Milligan	Mariann.milligan@foreign.ministry.se
UNEP	Dean Cooper	Dean.cooper@unep.org
UNIDO	Stefano Bologna	s.bologna@unido.org
UNITAR	Sharon Oseku	Sharon.oseku@unitar.org

Annex C: Summary Table of Climate Change Mitigation Programs in South Africa

Organization	Objective	RE / EE	Investment or Advisory	Public or private sector	Target Recipient	Implementing Partner	Size (\$m)	Status	
KfW	Offgrid solar systems	RE	Advisory	Public	Rural households	Eastern Cape province	33.5	Active	
KfW	Solar Water Heaters	EE	Investment	Public	Urban households	DBSA	66.9	Active	
KfW	Non-motorized transport	EE	Advisory	Public	Municipalities	Municipalities	6.7	Active	
KfW	Energy efficiency finance	EE	Investment	Private	Private sector	IDC	66.9	In discussion	
KfW	Concentrated solar power	RE	Investment	Public	Eskom	Department of Energy	133.9	In discussion	
GTZ	RE grid integration	RE	Advisory	Public	Eskom	Department of Energy	27.4	Active	
GTZ	Wind Energy Centre	RE	Advisory	Public	Department of Energy	Department of Energy		Active	
GTZ	Solar Energy Centre	RE	Advisory	Public	Department of Energy	Department of Energy		In discussion	
GTZ	REFIT implementation	RE	Advisory	Public	National Treasury	Department of Energy		In discussion	
GTZ	RE at municipal level	RE	Advisory	Public	Municipalities	Municipalities		In discussion	
GTZ	Energy Auditor Training	EE	Advisory	Public	NEEA	Department of Energy		Active	
GTZ	EE policy implementation	EE	Advisory	Public	Department of Energy	Department of Energy		In discussion	
GTZ	Climate policy support	RE / EE	Advisory	Public	DEA	DEA		Active	
AFD	Sere Wind Farm	RE	Investment	Public	Eskom	Eskom		133.9	Active
AFD	Eskom solar program	RE	Investment	Public	Eskom	Eskom			In discussion

Organization	Objective	RE / EE	Investment or Advisory	Public or private sector	Target Recipient	Implementing Partner	Size (\$m)	Status
AFD	EE finance	EE	Investment	Private	Private sector	Absa, Nedbank, IDC	160.6	Active
AFD	Buildings EE, hydro, SWH	EE	Investment	Public	Municipalities	Municipalities	146.4	Active
AFD	RE feasibility studies	RE	Advisory	Public	Central Energy Fund	Central Energy Fund		Active
AFD	Climate change research	RE / EE	Advisory	Public	DBSA	DBSA		Active
SDC	Buildings EE	EE	Advisory	Public	Urban households	Municipalities	16.7	Active
SDC	EE kilns	EE	Advisory	Private	Clay brick sector	Clay brick sector		Active
Finland *	RE feasibility studies	RE	Advisory	Private	Private sector	DBSA	3.2	Active
FMO *	Access to Energy Fund	RE	Investment	Private	Private sector		23.4	Active
DANIDA	Wind capacity building	RE	Advisory	Public	DTI	UNDP		Active
DANIDA	Green low cost housing	EE	Advisory	Public	Department of Housing	Department of Housing		Active
DANIDA	Urban Env Mgmt Prog	EE	Advisory	Public	Municipalities	Municipalities		Active
IBRD	Sere and Uppington	RE	Investment	Public	Eskom	Eskom	160.0	Active
IBRD	Demand Side Mgmt	RE	Investment	Public	Eskom	Eskom	20.0	Active
IBRD	IPP regulation	RE	Advisory	Public	National Treasury	NERSA		Active
IBRD	RE feasibility studies	RE	Advisory	Private	Private sector	DBSA	17.0	Active

* indicates a regional program under which South African projects are eligible. For these it was assumed 25% of the available program funds would be used in South Africa.

Organization	Objective	RE / EE	Investment or Advisory	Public or private sector	Target Recipient	Implementing Partner	Size (\$m)	Status
IFC	Evolution One	RE	Investment	Private	Private sector	Evolution	20.0	Active
EIB	RE / EE financing	RE / EE	Investment	Private	Eskom, private sector	DBSA, IDC, banks	400.0	In discussion
UNEP	CDM support	RE	Advisory	Private	Private sector	Standard Bank		Active
UNEP	Evolution One	RE	Investment	Private	Private sector	Evolution	4.0	Active
GEF	RE financing	RE	Advisory	Public	Public sector	Public sector	60.0	Active
UNIDO	EE in industry	EE	Advisory	Private	Private sector	Department of Energy		Active
UNITAR	Technical research	RE / EE	Advisory	Public	Universities	Municipalities		Active