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**Support for the Development and
Uptake of CDM projects in the
Industrial sector:
Pilot Project in Co-operation with
the Austrian Industry
US/GLO/04/096**

**UNIDO Project No.: US/RER/02/164
UNIDO Contract No.: 2005/38
Amendment No.: 1**

Mission Report on South Africa

06.11.2006

Project Manager

Mag. Manfred Stockmayer

Client

**THE UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION**

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1 Objective

At the project review meeting in Vienna (November 7-8, 2006) participants from the countries, Vietnam, South Africa and Mexico, recommended, that the planned country missions should be expanded to representatives from government, Austrian JI/CDM programme, Austrian trade representatives, financing institutions, and technology providers. This would give Austria the opportunity to present an unique package of know-how and experience in setting up CDM-projects.

The participation of representatives from Austrian business and industry as well as leading technology providers is seen as a foundation for building innovative public-private partnerships, which is ultimately an objective of the project. Further this country mission is assisting in business-to-business processes of partnership building and stimulating the dialogue between Austrian and host country facilities.

The aim of KWI in the country mission to South Africa was to:

- Support the development of the agenda for the workshop;
- Present the project activities covered by KWI under the main UNIDO contract;
- Facilitate discussions between Austrian participants of the mission and national stakeholders (project developers, government officials and experts);
- Act as a liaison between UNIDO and Austrian business and industry representatives participating in the mission;

2 Country mission to South Africa

2.1 Participants

From the Austrian side the following representatives took part in the country mission to Mexico:

Austria	
Thomas Hoffmann	Polytechnik Luft- und Feuerungstechnik GmbH
Peter Kögler	Austrian JI/CDM Programme, Kommunalkredit Public Consulting GmbH
Paul de Mattos	GE Jenbacher
Michael Plechaty	VA TECH Finance
Martin Schröder	TÜV Süd Industrieservice GmbH
Manfred Stockmayer	KWI Management Consultants GmbH Camco International AG
UNIDO	
Marina Ploutakhina	UNIDO

Table 1: List of Austrian participants

From South Africa, the following persons participated in the meetings:

UNIDO	
Lorence Ansermet	UNIDO/South Africa Office
Stefano Bologna	Head of Regional UNIDO Office SA

Stefan Raubenheimer	Consultant
South African Authorities and Institutions	
Aloisia Woergetter	Minister-Counsellor
Leluma Matooane	DME
Marba Visagie	DTI
Ndivhuho Raphulu	National Cleaner Production Centre
Rachel Mosupye	Tokiso
Riana Scholtz	Lilanda
Stefan Pistauer	The Austrian Trade Commissioner
Sylvester Mokoena	Assistant Director, Cleaner Production Unit, Dpt of Environmental Affairs and Tourism
Tanya Venter	Tokiso
Tebatso Matlala	Deputy Director, Cleaner Production Unit, Dpt of Environmental Affairs and Tourism
Wiseman Khumalo	Lilanda
South African Enterprises	
Andre du Preez	Pioneer Fishing
Asanda Makanda	MaNoa Holding - DSM
Bongani Mudau	Maano Chemicals
Bushi	Themvu projects
Christian Louw/Dr Adrie van Niekerk	Nova Institute
Desmond Padiachey	Siyanda Biodiesel
Edward Volek	Holcim
Elizabeth Mathew	IST
Esme Bluff	Manoa Holding - DSM
Grant Little	Sappi Ltd
Herman J. van der Walt	Group Air and Climate Change Advisor, SASOL
Cornelius Van Den Berg	SGS South Africa
Johan Vermeulen	Industrial & Environmental Manager, SGS South Africa
Johan Myburgh	Sappi Ltd
Kim Fraser	SASOL
Leon Grobbelaar	Managing Director, Enviro-Fill
Mandla Msimang	Lilanda
Marco Lotz	Project Engineer, Promethium
Niccita Glass	CAMCO
Pancho Ndebele	SAB
Peter Oldacre	CAMCO
Robbie Louw	Director, Promethium
Rudi Kriese	OMNIA
Rui Fragoça	GEDA
Sebacha Moletsane	Tsebo Consulting
Shaazia Bhallal	Climatology Research Group, Wits
Sipho Dube	Marketing Director, Enviro-Fill
Sipho Makhasana	Marketing Manager, Enviro-Fill
Stan Pillay	Anglo Coal

Stan Jewaskiewitz	Envitech Solutions
Tolmay Hopkins	Jones & Wagener

Table 2: List of South African participants

2.2 Time schedule and agenda

For the meetings held in Johannesburg, there was the following agenda (see Table 3):

Monday, October 30, 2006

Venue: Johannesburg Country Club

Time	Programme Item	
10:00 – 10:30	Introductions	Stefan Raubenheimer – SSN
	Welcome address	Dr. Stefan Pistauer – Austrian Trade Commissioner
	Project Background, Questions & Answers	Marina Ploutakhina - UNIDO
10:30 – 10:40	Overview on CDM Activities	Leluma Matooane – DNA
10:40 – 11:00	Environmental Technologies in Austria	Manfred Stockmayer – KWI
11:00 – 11:20	Austrian JI/CDM Programme presentation	Peter Kögler – Kommunalkredit Public Consulting GmbH
11:20 – 11:40	GE Jenbacher (efficient engines) presentation	Paul de Mattos – GE Energy
11:40 – 12:00	Polytechnik Luft (biomass) presentation	Thomas Hoffmann – Polytechnik Luft
12:00 – 12:20	VA Tech Finance presentation	Michael Plechaty – VA TECH Finance
12:20 – 12:40	TÜV Süd / Industrial Services presentation	Martin Schröder – TÜV Süd
12:40 – 13:40	Lunch Break	
13:40 – 14:00	DOEs in South Africa	SGS South Africa
14:00 – 14:40	Camco Carbon Asset Development partnership offering	Peter Oldacre – CAMCO

14:40 – 15:00	CDM Project	Grant Little – Sappi
15:00 – 15:30	Tea Break	
15:30 – 15:50	CDM Project	Andre du Preez – Pioneer Fishing
15:50 – 16:30	Questions & Answers	Stefan Raubenheimer – SSN

Tuesday, October 31, 2006

Venue: Johannesburg Country Club

Time	Programme Item	
10:00 – 10:45	Facilitated planning of informal sessions	Stefan Raubenheimer – SSN
10:45 – 13:00	Bilateral meetings	Participants
13:00 – 14:00	Lunch Break	
14:00 – 15:00	Bilateral meetings	Participants
15:00 – 15:30	Tea Break	
15:30 – 16:30	Report Back	Stefan Raubenheimer – SSN

Table 3: Agenda of the UNIDO-Austria mission, October 30 - 31, 2006

2.3 Short overview on presentations

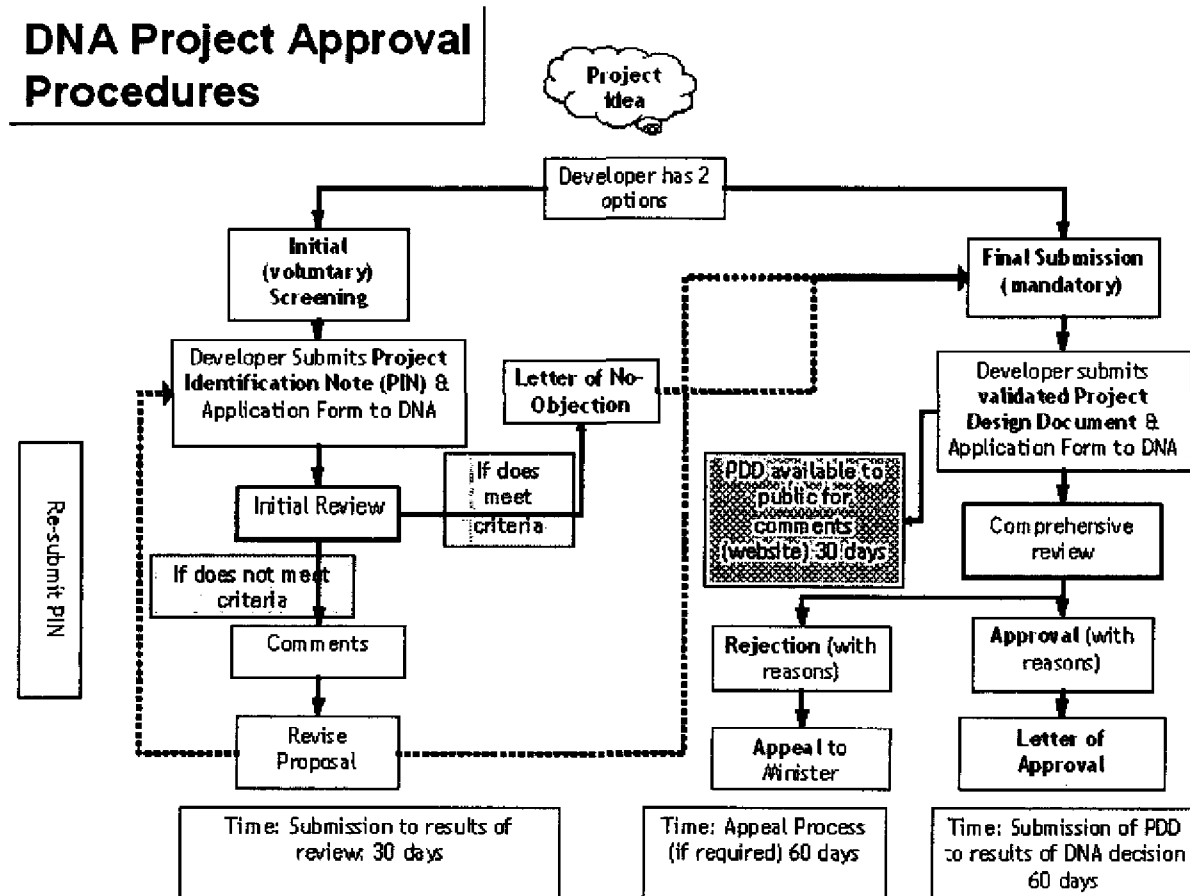
This chapter gives an overview on the presentations held by the participants during the country mission. The complete presentations are annexed to this report.

Leluma Matoane, Designated National Authority (DNA), Department of Minerals and Energy (DME)

South Africa has ratified the Kyoto Protocol in 2002. The Department of Environmental Affairs & Tourism (DEAT) has been assigned as the UNFCCC focal point. In December 2004, the Designated National Authority (DNA) has been established within the Department of Minerals and Energy (DME).

The task of the DNA is to evaluate projects and to issue Letters of Approval in accordance with the Marrakech Accords. Moreover the DNA has the function to promote and facilitate CDM projects in South Africa, to secure an adequate share of CDM investment in South Africa and to ensure that the mechanism complies with national interests.

The following graph shows the approval procedure for CDM projects in South Africa.



Graph 1: Approval procedure for CDM projects in South Africa

The DNA sees specifically potential for CDM projects in the following sectors:

- Energy supply and demand – Energy efficiency (EE), renewable electricity & energy, cogeneration, cleaner coal for generation; fuel switch from coal to gas
- Waste sector – CH4 flaring; composting; renewable energy
- Mining – CH4 reduction from coal mines; EE
- Agriculture – afforestation & reforestation; fire controls; improved management of woodlands; biofuels
- Transport and automotive sectors – Improved public transport, urban planning & traffic management; vehicle fuel switch; vehicle efficiency, road to rail transport
- Manufacturing – industrial EE; structural changes to less energy & emissions-intensive; boiler conversion to gas
- Residential, public & commercial buildings – fuel switch, solar heating, energy management, EE building design (thermal-efficiency), EE appliances

Up to now, 37 projects have been presented to the DNA. Out of these, PDDs have been presented for 14 projects and PINs for 23 projects. Currently, there are 4 projects from South Africa registered at UNFCCC:

- Kuyasa Low-Cost Housing Energy Efficient Project (Cape Town) – July 2005; Gold Standard Award; annual emission reduction 6,500 t of CO₂
- Lawley Fuel Switch Project (Lenasia) – March 2006; annual emission reduction 19,000 t of CO₂
- PetroSA Biogas to Energy Project – September 2006; annual emission reduction 29,000 t of CO₂
- Rosslyn Fuel Switch Project (Pretoria North) – September 2006; annual emission reduction 107,000 t of CO₂

Manfred Stockmayer, KWI Management Consultants GmbH

KWI was presenting an overview on the Austrian Environmental Technology Market. Over the last years, the number of companies active in the environmental technology market has been ever increasing, with now more than 330 companies active. The sectors covered include:

- Cogeneration (CHP)
- Industrial energy efficiency improvement
- Fuel switch (high to low carbon)
- Fuel switch (to renewables)
- Landfill gas
- Waste management (incl MBT)
- Renewable Energy:
 - Hydro power plants
 - Wind power plants
 - Solar power plants
 - Biogas plants
 - Biomass plants

Consultation with Austrian stakeholders has shown that there is only limited experience with CDM. Only a few companies supplying technologies have active experience with JI and CDM. The majority of experience is located within consulting companies.

Peter Kögler, Kommunalkredit Public Consulting GmbH

Kommunalkredit Public Consulting GmbH is managing the Austrian JI/CDM Programme. This programme has been set up in order to support the achievement of the Kyoto target in Austria. With a total funding of € 288 million, 7 million tons of CO₂ emission reductions per year will be purchased in the period 2008 to 2012. Up to now, 26 Emission Reduction Purchase Agreements (ERPAs) have been signed, the total project pipeline includes more than 100 projects. There are the following priority categories:

- Combined heat and power installations
- Fuel switch to renewables or less carbon intensive fuels
- Renewable energy production plants
- Energy efficiency projects
- Avoidance or energy recovery of landfill gases
- Waste management measures

After handing in a PIN or PDD and an initial offer, the project is evaluated by Kommunalkredit. After successful negotiations, an Emission Reduction Purchase Agreement is signed.

Paul de Mattos, GE Jenbacher

GE Jenbacher is a worldwide active producer of gas motors. GE Jenbacher has its headquarters in Jenbach, Tyrol. After being taken over by the GE Group, GE Jenbacher is integrated in the world wide activities of the group. The capacity of the equipment ranges from 300 kW to 3 MW. The machines can use different sources of gas, including natural gas, biogas, landfill gas, sewage gas, flare gas, coke oven gas and coal bed and coal mine methane. High efficiencies (39% electric, 43% thermic) secure the optimal use of the gas and support the reduction of greenhouse gases.

Thomas Hoffmann, Polytechnik Luft- und Feuerungstechnik GmbH

Polytechnik is a supplier of biomass fired boilers with a capacity between 100 kw and 20 MW. Combustion types include hydraulic grate furnaces, underfeed grate furnaces and underfeed stokers. Several kinds of fuels can be used in these boilers, including saw dust, wood chips, bark, sunflower husk, rice husk, etc. The technology provided can be used for cogeneration (heat and electricity), district heating, heating individual buildings as well as providing heat for industrial processes. Polytechnik provides turn key installations, including fuel discharge, fuel feeding system, furnace, boiler, flue gas dedusting unit, electro installations and buildings for boiler house and fuel storage.

Michael Plechaty, VA TECH Finance GmbH

VA TECH Finance GmbH has been founded in 1995 and has been the Financial Center of Competence within the VA TECH Group. Since 2006, the company provides independent financial services to VA TECH Hydro, VA TECH WABAG and third parties. VA TECH Finance is arranging export credits from various sources, secures development credits, concessional and commercial loans and works on non-recourse and structured trade finance.

VA TECH Finance focused in their presentation on the successful implementation of the Tsankov Kamak project in Bulgaria. This 80 MW hydro power plant with total investment costs of € 200 million was qualified as a JI project and the emission reductions were sold to the Austrian JI/CDM Programme. Basis for this work was a memorandum of understanding between Austria and Bulgaria, which was signed in September 2002. After the Baseline Study has been prepared by Austrian consultants, the Emission Reduction Purchase Agreement was signed with the Government of Austria, which served as a collateral for the financial transaction.

Martin Schröder, TÜV SÜD

TÜV Süd presented the experience of a Designated Operational Entity (DOE) with validation and verification. The key findings can be found in the following table:

Experience	Potential solutions
General	
<ul style="list-style-type: none"> • project size is too small, resulting in too small amounts of CERs • no approved methodology available → time and work load for new meth. submission not considered (at least 9 months delay) • project developer has the idea and the local access but insufficient capacities (economic, technical and/or methodological skills) • Misunderstandings on baseline and additionality concept 	<ul style="list-style-type: none"> • define minimum size of project (e.g. 15.000 CERs/year) • early pre-check to assure that the project qualifies for CDM → avoidance of unnecessary development costs • capacity building for project developers, combined with • support by experienced consultants
Development of PDD	
<ul style="list-style-type: none"> • PDD is not focussed on specific project conditions (copy - paste phenomena). • unclear priorities, it is not focussed on the most important issues first 	<ul style="list-style-type: none"> • again, mix capacity building of project team with external input (experienced consultants). • stick to guidelines - be short, be specific. • compare documentation on other projects
Validation	
<ul style="list-style-type: none"> • too ambitious timetable → imperfect PDDs submitted, resulting in delayed or cost intensive validation process. • Result: large number of draft-PDD versions (though only one PDD revision part of reg. validation contract) • Time req. more than expected (3-9 months, although in best case only 8 weeks) 	<ul style="list-style-type: none"> • Extended information and transparency on the process provided by DOEs • Acceptance of only one PDD revision. • Further information can be obtained in the Validation and Verification Manual (VVM).
Project description	
<ul style="list-style-type: none"> • Description of the current production system / status quo is incomplete. • The description of the project activities (equipment and procedures) to be applied in the project is often not detailed enough. • The management structure of the project and the corresponding responsibilities are often not clearly described or missing. • Risk management is considered insufficiently 	<ul style="list-style-type: none"> • Focus resources / time
Baseline and additionality	
<ul style="list-style-type: none"> • A consistent storyline which is applicable to the baseline scenario as well as to the additionality discussion should exist. • The baseline should follow the methodology literally - in a complete manner. 	<ul style="list-style-type: none"> • Stick tightly to framework documents (methodology, additionality tool) – complete these according to project setting.

<ul style="list-style-type: none"> The additionality discussion should focus on corresponding requirements – for example in use of the add-tool. Reasoning and background data for all assumptions made should be given 	
Local stakeholder process	
<ul style="list-style-type: none"> The project should be presented not only to local authorities but the actual local stakeholders (neighbours). Appropriate media should be used. Stakeholder process should take place from early planning on 	<ul style="list-style-type: none"> Consider stakeholder participation as a key to success, throughout entire project planning
Global stakeholder process	
<ul style="list-style-type: none"> Stakeholders and Parties contribute rarely to the global stakeholder process. Only accredited observer organisations / environmental NGOs make use of commenting opportunity. Most comments given are negative. The number of comments for JI projects is lower than for CDM projects. TÜV SÜD welcomes all comments and takes them in its conclusion into account 	<ul style="list-style-type: none"> Lobby for constructive contributions
Letter of Approval	
<ul style="list-style-type: none"> DNA in the host country not installed, or feels that it does not have the necessary competence to issue a LoA. no English version of the LoA available different approach in major host countries 	<ul style="list-style-type: none"> political lobbying limited influence of DOEs deliverance of an almost positive validation report exclusively to DNA early contact advisable for project developers

Table 4: Experience with validation and verification

Peter Oldacre, Camco International Ltd.

Camco International Ltd. is a world-wide active developer of carbon assets. Camco works with clients in order to assist them in qualifying their projects as JI and CDM projects and in marketing of the emission reductions. Since April 2006, Camco is listed on the London Stock Exchange. Camco operates as a partner to the project and shares the risks and rewards of carbon asset development. Currently, Camco is focusing on China and Russia as main markets. Camco has an office in Johannesburg.

Andre du Preez, Pioneer Fishing

Pioneer Fishing, a producer of canned fish, is planning to implement two small-scale projects leading to emission reductions. The first project aims at modifying the process of providing steam by installing a waste heat evaporator. This project will lead to an emission reduction of 5,000 tons per year. In the second project, biodiesel will be produced from fish oil. Emission reductions will be around 1,000 tons per year.

3 Conclusions and next steps

- **In general**

The UNIDO-Austrian delegation got a very warm and friendly welcome from the South African counterparts and stakeholders. The meetings have been perfectly organised by the UNIDO office in Johannesburg and the local subcontractors (South-South-North and Tokiso). The large number of participants showed the strong and increasing interest in CDM in South Africa. The participants of the Austrian delegation would like to express their thanks to the UNIDO office in South Africa for their efforts in organising the mission.

- **Conclusions**

The following main conclusions can be drawn from the presentations and discussions:

- There is a very positive development regarding the South African approval process for CDM projects. The DNA is well established and has received a good number of CDM projects. 4 projects have already been approved and registered with the CDM Executive Board. This shows that there is a well-structured process in getting the necessary approvals. The time required for approvals (30 working days for Letter of Endorsement and 45 working days for Letter of Approval) is very short and shows a strong commitment of the South African government in the CDM.
- About a year ago, when the UNIDO project was started and had its first meeting in Vienna, the interest in CDM in South Africa was mainly coming from large (predominantly international) companies, such as Sappi, Eskom or Holcim. During the last year, this has changed. There is a very strong interest coming from project developers and investors, who see CDM as a major opportunity to receive additional financial resources for the implementation of their projects.
- Due to the large number of companies in the industrial and mining sector, there is a very large potential for energy efficiency and methane reduction projects. Companies in this sector are starting to realise their potential to create additional income through the CDM.
- Electricity prices are currently very low in South Africa due to the fact that most of the electricity is coming from hydro power and coal fired power plants. Due to that fact, there is currently only a very limited opportunity for projects generating electricity (e.g. through cogeneration or renewables). This will change in the future, as consumption is increasing and new power capacity has to be provided to cover the demand.

- **Training in South Africa**

The training will start with a general overview on the Kyoto framework, Kyoto Mechanisms, institutions involved and the CDM project cycle. Emphasis will be laid on working with concrete project examples in the focus sectors (mainly in the industrial sector) in order to increase the ability of the participants to structure projects, prepare PINs, apply approved methodologies and write PDDs. Another focus will be to train the participants on the marketing of emission reductions. This will include an overview on the various purchasing options, price structures and developments and the link of CDM with the EU Emissions Trading Scheme.

Additionally, one day of training will be held by a validator. The objective of this day is to give participants an understanding on the validation and verification process and to work on the main areas, where

validators see the need to improve the quality of the project preparation process and the documents provided for validation.

Two days of training will be dedicated to give the participants the understanding on the COMFAR model of UNIDO. After a general introduction to the COMFAR model, special focus will be laid on combining the basic COMFAR model with the newly developed part of the model, which is including CO₂ emissions into the model.

The training is tentatively scheduled for February/March 2007 and will comprise a week of training in total (2 days with ESD/KWI about CDM in general, 2 days with COMFA on general topics and 1 day with COMFAR on CDM). Participants could come from industry and government institutions, also other national experts and stakeholders are welcome.

Follow up activities

Preparation of training and training material for CDM Training for Industrial Project Developers (training tentatively schedule for February/March 2007);

Annex

Presentations:

- Stefan Pistauer, Austrian Trade Commissioner: Clean Development Mechanism
- Leluma Matookane, DNA: South Africa's Designated National Authority for Clean Development Mechanism
- Manfred Stockmayer, KWI: The Austrian Environmental Technology Market
- Manfred Stockmayer, KWI: Key Aspects of the EU Emissions Trading Scheme (EU ETS)
- Peter Kögler, Kommunalkredit Public Consulting GmbH: The Austrian JI/CDM Programme
- Paul de Mattos, GE Jenbacher: Company Overview
- Thomas Hoffmann, Polytechnik Luft- und Feuerungstechnik GmbH: Company presentation
- Michael Plechaty, VA TECH Finance GmbH: Financing Projects under the Kyoto Protocol
- Martin Schröder, TÜV Süd: Experiences of TÜV Süd in CDM validation and verification
- Cornelius Van Den Berg, SGS: The role of the Designated Operational Entities (DOEs) in the CDM process
- Peter Oldacre, Camco International: Our partnership offering
- Grant Little, Sappi: Sappi Tugela Fuel Switch Project
- Andre du Preez, Pioneer Fishing: Oranjevis Project

