COP17/CMP7

DURBAN 2011

GREENING LEGACY

environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Climate Action Now!
Save the future

MESSAGE FROM THE MINISTER

One of the most important aspects of responsible environmental management is **enabling future generations to enjoy good health, without the many risks presented by pollution, contamination of land and depleted resources.** Current and future generations have as much of a right to the Earth's natural resources and beauty as we do today, and we are responsible for safeguarding it. The initiatives outlined in this guide, and the ethos behind them, are designed to fulfil that responsibility.

There is much to celebrate as different communities, industrialists and scientists, as well as you and I, come up with new and imaginative ways of keeping our Earth functional and beautiful. Someone wise once observed: **"Our planet doesn't need healing. We do."** So, more than anything else, this guide directs us towards a way of thinking and behaving that restores our natural balance with Earth and the vegetation, creatures and elements with which we share it. **We need to regain our respect for, and communion with, the world we inhabit, for it is the only one we have and we have been entrusted with its care.**

The work reflected in these guidelines offers much hope for the future. We have it within our power to keep our planet, ourselves and future generations alive and well.

E Molewa

EDNA **MOLEWA**
MINISTER OF WATER & ENVIRONMENTAL AFFAIRS

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OVERVIEW
EVENT GREENING

The purpose of this document is to provide an overview of the methodology, aims and objectives involved in ensuring the hosting of the 17th session of the Conference of Parties (COP) of the United Nations Framework Convention on Climate Change (UNFCCC) and the seventh Meeting of the Parties (CMP) to the Kyoto Protocol (UNFCCC COP17/CMP7, further shortened as COP17) is done in a sustainable manner. The event is being hosted in Durban, South Africa from November 28 to December 9, 2011

The final report which issues from COP17/CMP7 will follow the guidelines provided by the Global Reporting Initiative (GRI) and the global standard for sustainability reporting (www.globalreporting.org). It aspires to follow internationally recognised standards for governance, transparency and reporting and to stimulate discussion around advancing sustainable meeting and event organisation strategies. The carbon calculations relating to the event will be compliant with the Greenhouse Gas (GHG) Protocol.

Ethos

Vision: The vision is to host a low carbon event with a positive long-term impact.

Values: The values of the COP17/CMP7 Greening Programme, as derived from the National Greening Programme, are sustainability, collaboration, participation and communication. These underpin the 10 core values in the areas of human rights, labour standards, the environment and anti-corruption, as outlined in the UN Global Compact.

Purpose: The purpose of the COP17/CMP7 Greening Programme is to ensure that the relevant environmental and climate-friendly considerations are integrated into the organisation and implementation of the event to the greatest possible extent.

Boundary: Reporting boundaries are drawn on issues and activities over which the Department of Environmental Affairs (DEA) has direct decision-making authority. The final report will highlight the performance areas on specific issues that can be measured and controlled by the DEA in close co-operation with Durban's eThekwini Municipality and South Africa's provincial authorities.

Commitment: According to the Host Country Agreement, the following has been stipulated:

1. In providing the conference space, premises, equipment, utilities and services, the government shall endeavour to ensure that climate neutrality is achieved locally for the duration of the conference. To this end, the government shall:
   - estimate greenhouse gas emissions associated with hosting the conference consistent with accepted international standards;
   - reduce or avoid greenhouse gas emissions associated with hosting the conference to the extent possible to ensure a low carbon event through the implementation of various greening initiatives;
   - request the secretariat to provide assistance in estimating greenhouse gas emissions and to suggest ways and means by which the government can reduce and/or offset greenhouse gas emissions associated with hosting the conference.
2. In order to assist in hosting a climate neutral or low carbon conference as required by the above paragraph, the government may encourage participants to contribute, to the extent possible, to the goal of climate neutrality of the conference by offsetting emissions related to their travelling and participation and may provide a mechanism that participants may wish to utilise for this purpose.

Event greening: The term "greening" is used synonymously with sustainability, which refers to the reconciliation of three pillars, namely environmental, social and economic demands. This view is presented in the illustration alongside, using three concentric circles. The outer layer represents ecosystem services, which embody environmental factors and the sustainable use of ecosystem goods and services. The next layer incorporates socio-political systems and at the centre of the system lies the economy. These layers rest on a governance platform, which supports the system through good corporate and co-operative governance.

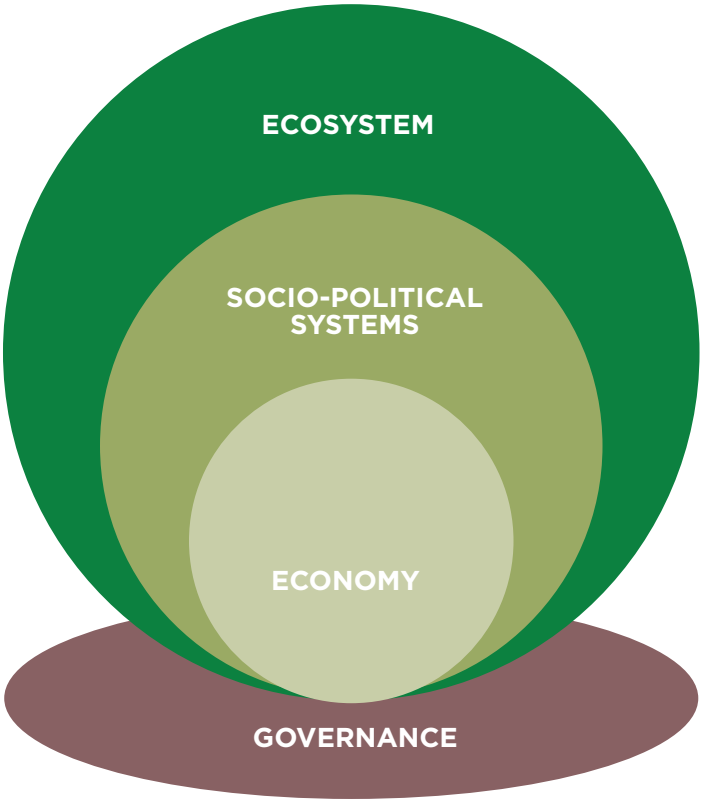
Greening requires the incorporation and application of environmental principles and best practice into planning and practice. It means taking into consideration the

environmental impacts of decisions taken and investments made, and ensuring that the negative environmental impacts of these decisions are minimised. In so doing, natural resources are conserved; they are also used more efficiently and less pollution is produced. Furthermore, it seeks to ensure that the impacts of greening are beneficial from both a social and economic point of view through community involvement and local economic development.

Event greening is a key element of the implementation of COP17/CMP7, with the vision of hosting a carbon neutral event. The first objective is to reduce the negative impact and to measure the overall footprint of the event, followed by offsetting carbon emissions that could not be avoided.

Aim and objectives: The aim is to host COP17/CMP7 as a low carbon event based on the following objectives:

- **To reduce the greenhouse gas (GHG) emissions** where possible through the event greening initiatives. This means measuring these GHG emissions, including international delegate travel, and mitigating them through local projects;
- **To actively reduce the amount of waste generated** before and during the event. Waste separation will be provided at source to raise awareness;
- **To ensure that water is consumed in a responsible manner.** Participants, venues and subcontractors have been encouraged to implement water conservation principles;
- **To encourage energy efficiency through energy-saving technologies,** management systems and responsible behaviour. The use of renewable energy sources, as well as the use of natural light and ventilation, has been encouraged;
- **To encourage the use of public transport,** the efficient management of other transport and the avoidance of non-essential flights in order to reduce air pollution. Consideration has been given to the impact of the transportation of the thousands of delegates on the environment and local communities – effects like congestion, disruption, emissions and pollution;
- **To maximise sustainable tourism offerings** through encouraging venues and accommodation establishments to comply with or exceed minimum environmental and tourism standards;
- **To ensure that the procurement of goods and services is done in a sustainable manner,** including the use of local products that have a minimal negative effect on the environment. Also, to encourage a greater awareness around social responsibility work;
- **To promote local economic development and social cohesion** within the host region. A triple bottom-line approach has been implemented through demonstrating fair and responsible spend of government money, as well as using the investment into COP17/CMP7 wisely for long-term benefit to the region;
- **To encourage local environmental protection** and enhancement of biodiversity and ecological systems;
- **To ensure that the greening of the event is well communicated** and marketed to appropriate target groups. This is done with a view to encouraging behaviour change among exhibitors, visitors and contractors, as well as raising the profile of the event;
- **To monitor and evaluate the greening initiatives** so that lessons learnt can be captured and improvements made. An open and transparent reporting mechanism has thus been made available;
- **To ensure that a lasting legacy** is left behind that has a positive impact on the local people and environment, which can be sustained in a practical way.



SA Sustainable Development Definition: A systems approach to sustainability where the economic system, socio-political system and ecosystem are seen as embedded within each other, and then integrated through the governance system that holds all the other systems together within a legitimate regulatory framework. Sustainability implies the continuous and mutually compatible integration of these systems over time; sustainable development means making sure that these systems remain mutually compatible as the key development challenges are met through specific actions and interventions to eradicate poverty and severe inequalities.

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Key focus areas

To enable effective implementation of the aim and objectives, the following key focus areas have been identified:

- Accommodation and responsible tourism;
- Communications and marketing;
- Exhibitions, specifically the Climate Change Response (CCR) Expo;
- Events such as the Provincial Climate Change Summits and COP17/CMP7 awareness-raising initiatives;
- Meeting venues, specifically the Durban ICC/Albert Luthuli Precinct;
- Safety and security;
- Transportation, including local, regional and international travel; and
- General event management (food and beverage, on-site offices, audiovisual and production).

Greening practices

It has been strongly recommended that the following greening practices be implemented:

- Energy efficiency;
- Waste minimisation and management;
- Water conservation and demand management;
- Sustainable procurement;
- Sustainable tourism;
- Protecting and enhancing biodiversity; and
- Sustainable transportation.

Greening methodology

The methodology being implemented is based on a plan-do-check-act approach with three phases of event management:

Planning phase: The first phase required planning and organisation of the event to define its policy and commitment to sustainable development. It also required the identification of key stakeholders, sustainability issues and setting of key performance indicators for improved event sustainability.

Implementation phase: Phase 2 required defining responsibilities and ensuring that staff were sufficiently trained and competent, as well as provision of sufficient resources to implement and operate the event management system. It also required careful supply chain management.

Check and review phase: The final phase requires monitoring, measuring and evaluating the event in relation to the management system and the objectives set, and taking action to continually improve event performance.

Carbon footprint assessment

Measuring the carbon footprint is an international, rapidly evolving discipline, and for events such as COP17/CMP7, there are no detailed standards or accepted methods for defining scope, calculating, making assumptions and presenting results. Consequently, the compilation of a carbon footprint can have many quantitative results and the differences between the results can vary significantly, depending on the choice of scope, method and assumptions. The COP17/CMP7 carbon footprint is therefore not necessarily directly comparable with other carbon footprint statements and must be read in conjunction with the COP17/CMP7 footprint approach and methodology. The conference organisers aim to contribute to the development of good practice for the management and estimation of an event-based carbon footprint.

Aims and objectives

In hosting COP17/CMP7 as a low carbon event, objectives need to be measurable to determine the impact. The three main objectives are:

- To provide the basis for visualisation and communication of individual GHG emissions in the planning and implementation of COP17/CMP7 and associated events.
- To provide the basis for initiatives to make the conference carbon-neutral.
- To prepare comparable calculations of GHG emissions at future COP meetings.

The measurement may also provide further insight into the impact of activities and decisions; assist to prioritise mitigation actions and measure progress; and help to set the standards and benchmarks for other similar events.

Footprint methodology

1: The COP17/CMP7 carbon footprint calculation uses a control-based approach. This means that the scope primarily includes activities whose GHG emissions can be controlled to a certain degree by the COP17/CMP7 organisers or participants. To enable the effective management of the local and national carbon footprint, three separate, yet linked carbon footprint studies are being undertaken.

The COP17/CMP7 Carbon Footprint includes the Durban and the National Carbon Footprint Studies and is being managed by the Department of Environmental Affairs (DEA) through the Greening Workstream PMU.

2: The Durban Carbon Footprint Study for COP17/CMP7 is being done by eThekwini Municipality, which has appointed ARUP Consulting to measure the local footprint. This will feed into the overall carbon footprint.

3: The National Carbon Footprint Study for COP17/CMP7, including international flights, is being conducted by the DEA, which appointed *icologie* in partnership with Carbon Calculated.

Process

The process for determining the carbon footprint builds on an eight-step model, described below:

Step 1: Definition of scope and identification of preliminary data:

The scope is defined on the basis of existing and emerging guidelines and standards (GHG Protocol, ISO 14064 and BS 8901), using a control-based approach as described above. The preliminary data are mainly retrieved from normative databases, assumptions and adjusted results from measurement of similar events.

Step 2: First estimate of GHG emissions and preliminary conclusions:

The first estimate gives an overview of the most significant sources of GHG emissions. With this knowledge, the subsequent calculations can focus on refining those areas that have the most significant impact on the total carbon footprint, while areas with insignificant contributions need less attention.

Step 3: Identification of data requirements:

With focus on the most significant sources of GHG emissions, the requirements for data are determined. How and when the data can be retrieved is also outlined during this step.

Step 4: Pre-conference data collection:

Reasonable accessible actual data are collected as defined in step 3. Some data, however, may only be available after the conference and in these cases, preliminary data and estimates are used.

Step 5: Second estimate of GHG emissions:

Data for the three areas in the scope and the different sub-areas within each area are consolidated in the pre-conference estimate. The results and conclusions are used for communication and awareness-building during the conference.

Step 6: Post-conference data collection:

After the conference, the remaining data – such as actual energy consumption at the conference centre, number of participants and their behaviour – are collected.

Step 7: Final calculation of GHG emissions:

The final data and the result are reviewed and the differences to the pre-conference estimate are analysed.

Step 8: Disclosure report:

The report describes the methodology, results and guidance for carbon footprint measurements at COP17/CMP7.

Carbon reduction projects

To enable the reduction of GHG emissions that could not be avoided, a range of projects is being implemented at a local and national level. Funding for these projects is from various sources and details of them will be made available in the carbon footprint report. The link between these projects and the offset of GHG emissions for COP17/CMP7 is, however, managed by the DEA and forms an integral part of the event greening strategy. It is essential that the principles and practices of the carbon offset projects be clearly outlined to ensure the integrity of the individual projects and the overall process.

Projects

A variety of projects has been identified by the DEA, KZN Province and eThekwini Municipality to reduce the (net) negative impact of COP17/CMP7. A few are named below:

- Voluntary Community Ecosystems-Based Adaptation (CEBA) programme for delegates (eThekwini Municipality & Wildlands Conservation Trust).
- Durban's Responsible Accommodation Campaign (eThekwini Municipality).
- Durban Waste Management (eThekwini Municipality).
- Durban Public Transport (eThekwini Municipality).
- Non-motorised Transport (GEF, UNIDO and KFW).
- Solar Water Heaters in Community Clinics in KZN (GEF and UNIDO).
- Community Forest Carbon Sinks (eThekwini Municipality).
- Renewable Energy Usage (eThekwini Municipality).

Communication

It is important to communicate the greening initiatives and how delegates can get involved. Several communication tools and projects are being undertaken, including the following:

- Green Passport for COP17/CMP7;
- Green Volunteers for COP17/CMP7;
- Greening Guidelines for COP17/CMP7 Workstreams;
- Ecological Footprinting by eThekwini Municipality;
- Durban Green Event Guidelines by eThekwini Municipality; and
- Cleantech Competition.

ESTIMATING OUR CARBON FOOTPRINT

As the host country to COP17/CMP7, South Africa has undertaken to host a low-carbon event. An important aspect of this approach is the calculation of our carbon footprint in order to determine the overall impact of the event and work towards an e cient and focused carbon reduction and o set programme

First pass estimate scope

The "first pass estimate" is based on a series of assumptions, including the number of people expected to attend the event and the consumption of carbon-emitting resources such as electricity and transportation associated with hosting the conference. These calculations will then be used to guide and prioritise interventions aimed at reducing the carbon footprint. This estimate is verified once the event has taken place, using the actual data that will be collected during the conference, and presented in a COP17/CMP7 *Carbon Footprint Disclosure Report*.

The National Department of Environmental Affairs (DEA) and eThekwini Municipality, with the support of the UNFCCC Secretariat, engaged in joint efforts to determine the overall footprint for the event. While eThekwini Municipality focused on the local footprint, the department looked at the national footprint.

The COP17/CMP7 Carbon Footprint First Pass Estimate comprises three different components:

- The actual event, including build-up and breakdown relating to various activities, hosted in Durban from 28 November to 9 December 2011.
- Key events hosted to raise awareness within South Africa, such as the Climate Change Response Summits and the Climate Train.
- Accredited delegates' travel to Durban, including international travel, which produces the majority of carbon emissions.

A separate component addresses the official South African delegates' footprint, which will enable the delegation to lead by example and offset their own emissions, where possible.

COP15 comparison

It is interesting to compare this first pass estimate with that of COP15 in Copenhagen, where the total emissions were estimated at 72 374tCO_2e (92% of which were due to international transport impacts), with a total of 33 536 delegates.

It is anticipated that although there will be a lower attendance at COP17/CMP7, more participants will have to take long-haul flights to attend the event, which will have a significant impact on the overall carbon footprint.

Calculation

The first pass estimate has revealed that approximately 76 919tCO_2e will be emitted. This figure accounts for an estimated 25 000 official delegates (high-end maximum) attending from both international and local destinations. The calculation has been based on the Greenhouse Gas Protocol's emission accounting methodology and the latest carbon dioxide conversion factors have been deployed. This first pass estimate has adopted assumptions relating to the number of delegates, their anticipated departure locations, mode of transport and accommodation and the length of their stay, as well as the nature and size of various events leading up to COP17/CMP7.

The calculation of the footprint can be compared with the layers of an onion, where the core events involve more detailed data-capturing, while those on the periphery are tracked and calculated, but not always measured to the same extent, due to practical considerations. The focus is to offset the core element and although the rest of the "onion" is also measured, it will not all be offset.

Other national government events

In the lead-up to COP17/CMP7, there have been a variety of events arranged by national government, such as the nine provincial Climate Change Response Summits to raise awareness and get input from different stakeholders. An awareness-raising Climate Train is travelling the length and breadth of South Africa and will arrive in Durban during the event to deliver climate change messages from different role-players across the country. In addition, other official events have taken place and these have been included through the provision of a 20% contingency. It is anticipated that the summits, train and other associated events will create about 423tCO_2e, which needs to be included in the overall event footprint.

International travel

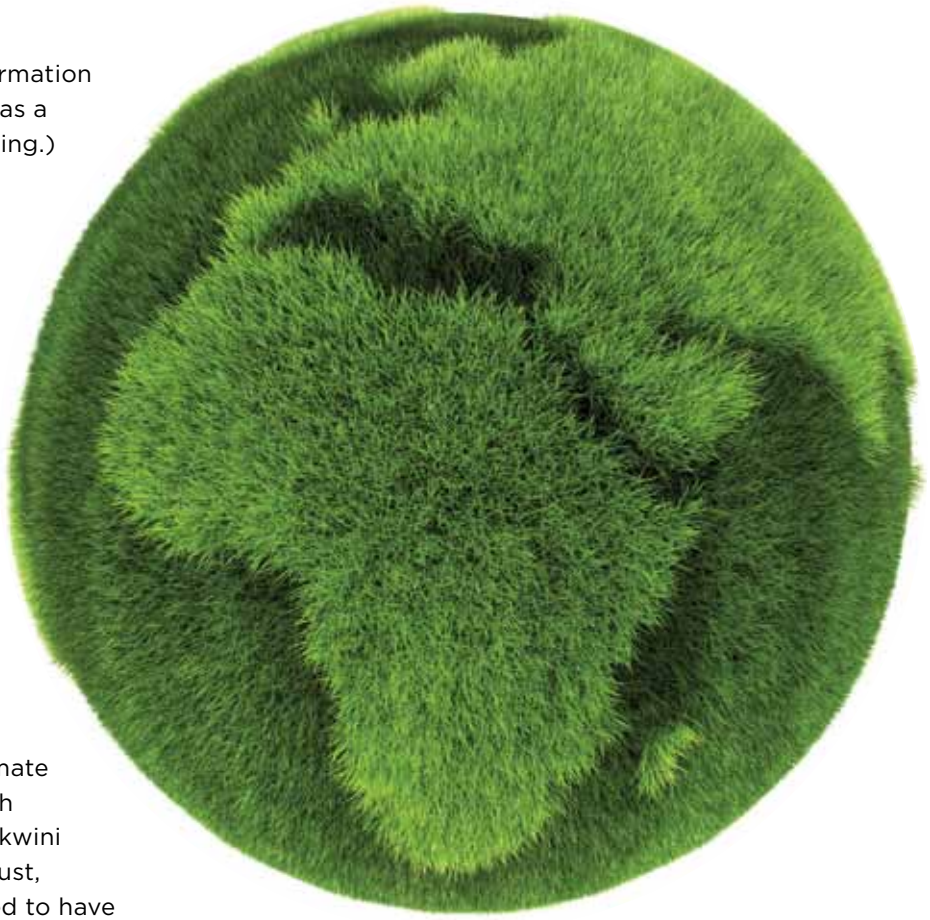
International flights will have the largest impact on the overall carbon footprint. The UNFCCC Secretariat will calculate the travel emissions using data from its registration database and the International Civil Aviation Organisation carbon calculator, as approved by the UN. Based on initial assumptions of 25 000 official delegates, the carbon emissions are estimated at 61 505,19tCO_2e.

South African delegation

Based on current figures and assumptions about transport and length of stay, it is anticipated that the South African delegation – which is comprised of approximately 550 representatives – will create about

218,82tCO_2e of carbon emissions. (This information is extracted from the overall footprint data as a separate calculation, to avoid double-counting.)

This delegation will offset their footprint through the Durban CEBA initiative *(see page 17)*.



Voluntary offset

The official voluntary carbon offset mechanism which has been established by the eThekwini Municipality is aimed at carbon sequestration through natural habitat restoration in the uMbilo River Catchment. This voluntary offset mechanism, known as the Durban Community Ecosystem-Based Adaptation Initiative (Durban CEBA), has adopted a holistic approach to offsetting by addressing poverty alleviation and the capacity of both communities and the environment to adapt to the impacts of climate change. The first phase of the project, which is a partnership initiative between the eThekwini Municipality, the Wildlands Conservation Trust, business and local communities, is estimated to have the capacity to sequester some 16 000tCO_2e over a 20-year period. For further information on this initiative, visit: www.durbanceba.org.

Summary of first pass estimate for COP17/CMP7, Durban 2011

Component	Activity	Carbon (t CO_2e)
COP17/CMP7 in Durban	Accommodation, venues, transport and other logistical arrangements for 25 000 delegates	**15 000**
Provincial summits and Climate Train	Travel to summits, electricity, accommodation and information packs for 3 351 delegates, plus contingency for other related events	**423**
Accredited delegates' travel	Travel to Durban, including flights and land-based transport for 25 000 delegates	**61 505**
TOTAL ESTIMATED CARBON FOOTPRINT (tCO_2e)		**76 928**

CEBA INITIATIVE

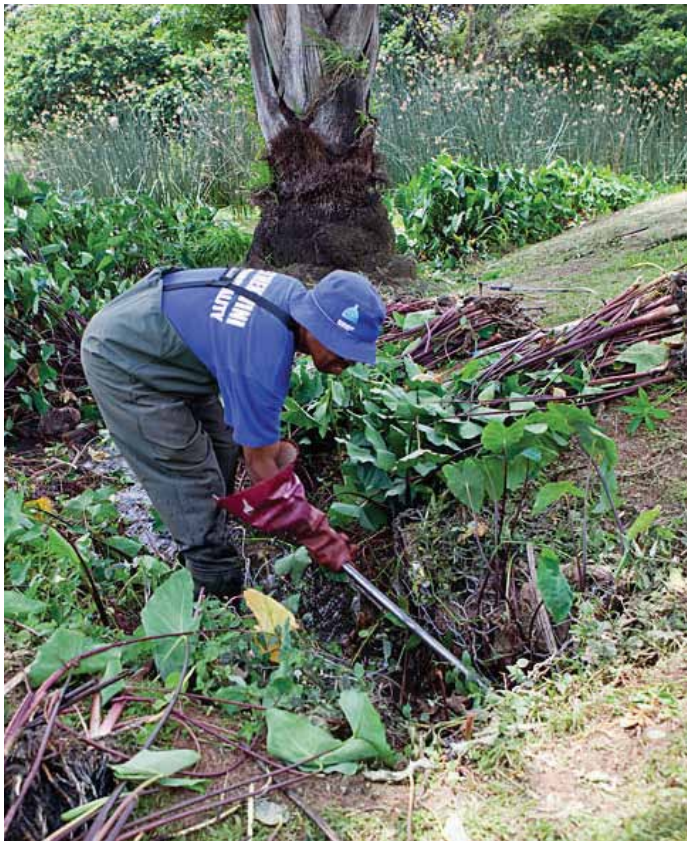
As part of its preparations for COP17/CMP7, Durban will be responsible for implementing a number of initiatives as part of the COP17/CMP7 conference's Greening Programme. One of these will be the calculation of the local carbon footprint of the event and the development of a strategy to minimise and then offset this footprint

The Durban CEBA Initiative

Meaning "Community Ecosystem-Based Adaptation", the CEBA initiative which the eThekwini Municipality has adopted involves the development of its own climate offset project. It focuses on the link between communities and the ecosystems that underwrite their welfare and livelihood.

The initiative involves restoring the natural ecosystems of impoverished and vulnerable communities and creating cleaner, greener neighbourhoods that are less dependent on costly utilities and services. This way, these communities participate in the development of a beneficial green economy in Durban.

Through this important work, ecosystem services are enhanced, resulting in increased adaptive capacity to climate change, as well as mitigation of carbon emissions through natural sequestration processes.



What does CEBA involve?

Important elements of the CEBA model are:

- **The UPLIFTMENT of local communities** through the establishment of "green jobs" for the poor and unemployed.
- **The RESTORATION of the ecosystems** that underwrite the welfare of these communities and which reduce our collective vulnerability to climate change.
- **The establishment of delivery PARTNERSHIPS**. In the implementation of the Durban CEBA Initiative, the eThekwini Municipality is partnering with a local NGO, Wildlands Conservation Trust (WCT), other spheres of government, business and local communities. An MOU has been signed with WCT, committing them to delivery in specific areas of project implementation.

Where is CEBA being implemented?

As a catalyst project, a natural habitat restoration project has been initiated in Paradise Valley in the uMbilo catchment area, west of Durban. This will be launched at a high-level event during COP17/CMP7. Work will include the removal of alien plants, planting of indigenous trees, and restoration of the associated riverine, wetland and grassland systems. The idea is to gradually expand the number of projects and communities involved in the initiative.

Durban CEBA: Official Voluntary Offset Mechanism for COP17/CMP7

The Durban CEBA Initiative has been acknowledged by the Department of Environmental Affairs as the official voluntary offset mechanism for COP17/CMP7. Delegates, corporates and other interested groups will be able to purchase CEBA credits via a website (www.durbanceba.org) that is being set up for this purpose. The management of these funds will be done by WCT, as per the MOA, and will be directed initially into the ecosystem restoration project at Paradise Valley, but later into other parts of the uMbilo catchment area. The allocation of funds will be agreed to by the project partners.

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CLIMATE CHANGE AWARENESS

"We owe it to the people of South Africa to partner with them to minimise the e ects of climate change on their lives – to help them reclaim their futures, indeed, all our futures. I am inviting you to partner with us in this campaign, and in our stated determination to act against climate change and reclaim our futures." – Edna Molewa, Minister for Water and Environmental A airs, Briefing to the National Business Initiative

The Climate Change Awareness Campaign forms a key aspect of the Department of Water and Environmental Affairs' communications strategy for promoting the recently published National Climate Change Response White Paper.

The White Paper provides the substantive policy directions that need to be communicated through the campaign. Section 10.5.4 of the White Paper commits South Africa to:

"Design, develop and roll out a climate change awareness campaign that makes all South Africans more aware of the challenge of climate change and the need for appropriate responses and choices at individual and community level."

While COP17/CMP7 presents a unique opportunity for launching the Climate Change Awareness Campaign, the DEA's vision is for a long-term campaign that is linked to the COP17/CMP7 Legacy Programme and the implementation of the National Climate Change Response.

South Africa has billed COP17/CMP7 as being "The People's COP". It is expected that South Africa will provide more opportunities for constructive social engagement and mobilisation of civil society than was the case in Cancun or Copenhagen.

Indeed, social mobilisation and stakeholder engagement are central to the department's conceptualisation of its Climate Change Awareness Campaign. The department wants messaging about climate change to reach all South Africans, and for opportunities to engage with the issue to be afforded to all. Stakeholder engagement will therefore be critical to the success of the campaign and civil society, labour and business must be active participants in the campaign.

Objectives

The objectives of the campaign are to build awareness of the causes and effects of climate change and to mobilise South African businesses, households and stakeholders to take action to build "climate resilience". This term encompasses actions that mitigate climate change and that respond to the effects of climate change, in particular those actions that achieve both.

The campaign aims to mobilise social capital by uniting government, business, labour and civil society to achieve these objectives.

Content and phases

The DEA's fundamental requirement for the Climate Change Awareness Campaign is that it speaks to all South Africans. This represents a profound challenge, as social inequality interacts directly with the appropriateness of different messaging. Climate change impacts are felt disproportionately by the poor, who contribute relatively little to the causes, while behaviour change by the wealthy has a significant role to play in the mitigation of climate change. This implies that the campaign must include some differentiation of content according to target audience, and that this needs to be considered in relation to the use of particular media channels.

The department sees the campaign as consisting of three interlocking phases – the launch, mobilisation and climate action.

- **Campaign launch:** The primary objectives for this phase of the campaign are to build stakeholder ownership and establish a common brand identity at launch, through the use of multimedia channels, outdoor advertising, public art and sponsorships.
- **Mobilisation:** The objectives for this phase are to build and deepen awareness of climate change. The structured involvement of stakeholders – including organised business and labour, sponsors, NGOs and other civil society organisations – is critical to

ensuring deep penetration of the campaign into South African society. Stakeholders need to ensure the campaign's messages are carried to schools, government departments and workplaces. Examples of how this strategy could be rolled out include creating climate change-orientated lesson plans and competitions for schools, water, energy conservation and recycling programmes for residents, as well as advocacy projects linked to urban and sustainable agriculture initiatives for communities.

- **Climate action:** Having built awareness of climate issues and threats, it is important to convert this into concrete action to mitigate greenhouse gas emissions and to prepare communities for the inevitable changes resulting from a changing climate. The slogan of the campaign is "Climate Action Now", so it is imperative that this phrase is given real meaning by directing people towards concrete initiatives in which they can participate. Business commitment to lowering carbon emissions and improving sustainability will be an important part of this process.

The DEA has hosted stakeholder forums to co-ordinate initiatives from civil society at COP17/CMP7 and will also be engaging with various corporate and other potential sponsors to support the campaign. A roadmap for the sponsorship programme will be developed that will include determining the level of financial commitment needed and any prerequisite licensing arrangements, which will influence the ultimate scope and extent of the campaign.

Climate change is not going to be resolved in the near future. The DEA envisages the Climate Change Awareness Campaign as a long-term initiative, linked to the implementation of the National Climate Change Response and COP17/CMP7 Legacy projects and programmes.

FLAGSHIP PROJECTS OVERVIEW

In hosting COP17/CMP7, South Africa has an invaluable opportunity to showcase environmental sustainability projects that ensure the country is well on its way to a low-carbon future. The following 10 projects have been selected out of the numerous exciting initiatives that are being implemented and supported by national government around the country

Solar Water Heater Mass Roll-out

A skills development programme will assist with the mass roll-out of solar water heaters (SWH) with a focus on research, awareness, training and marketing. Low-income households and rural communities will receive low-pressure SWHs, as well as energy-efficient lights.

Comprehensive Community Solar Energy Project, Northern Cape

The Solar Energy Park will be situated in Upington, a thriving town on the banks of the Orange River and on the fringe of the Kalahari Desert. The project will supply electricity generated from photovoltaic cells to the local community. Solar-powered street lights will also be installed as part of this project.

Ceres Wind Farm

Eskom is funding the development of a wind farm in the town of Ceres as part of its expansion project. It will have a capacity of 100MW.

Municipal Energy Efficiency and Demand Side Management Programme

The project replaces inefficient lighting in buildings, as well as traffic and street lights, with energy-efficient technologies. In addition, low-pressure SWH systems are installed in low-income households.

Large-scale Photovoltaic

A total of 38 solar photovoltaic tracker systems have been erected just north of eThekwini and will be feeding into the Eskom grid. The anticipated output is about 500kW, based on a daily output of eight hours of sun per day.

Joule

The Joule is an electric hybrid vehicle which has been developed in South Africa and is on display at the CCR Expo. The first cars are already on the road and production is underway.

Innovation Centre

The National Climate Innovation Centre is being developed in Gauteng to provide innovation, science and techonology support around climate change issues.

Mzansi Green

The Eduroute House (Mzansi Green) has been built to showcase sustainable housing options.

Low-carbon, Low-cost Housing

With such a big need for affordable and sustainable housing in South Africa, a large focus is being placed on the provision of energy-efficient modular housing. Low-carbon, low-cost housing options are promoted and implemented through this project.

Food and Energy Centre of Excellence

The centre is promoting the implementation of household fruit trees for low-cost housing. It is also producing gourmet and medicinal mushrooms and introducing bamboo as a long-term commercial crop.

SOLAR PHOTOVOLTAIC

As host city to the COP17/CMP7 conference, Durban, in turn, is hosting about 190 world nations taking part in the negotiations and approximately 40 000 delegates. A historical and significant moment for South Africa's climate resilience journey, it dovetails with the country's National Climate Change Response Policy White Paper in trying to mitigate against the damaging e ects of climate change. COP17/CMP7 also presents a valuable opportunity to design and implement innovative legacy projects that harness the momentum of the conference and also speak to South Africa's national response strategy

The country's associated Integrated Resource Plan, which was recently adopted, has also provided a clear indication of national government's commitment to promote renewable energy sources. It is complemented by the Renewable Energy Independent Power Producer Procurement Programme (REIPPP) to stimulate the renewable energy market in South Africa.

Durban's eThekwini Municipality has strategically begun positioning itself for renewable energy production in South Africa and is developing large-scale, renewable energy generation opportunities within the region. The Department of Environmental Affairs has been a key partner in developing these COP17/CMP7 legacy projects.

In line with the emissions reduction benchmark presented in its climate policy, South Africa has committed to a range of national flagship programmes. Among these is the development and acceleration of low-carbon renewable energy generation and supply technologies that would contribute to an emerging green economy sector in South Africa and ultimately lead to thousands of new jobs.

One such programme is around the buying of "green electricity". **The eThekwini Municipality is developing a 1MW photovoltaic installation that is easily connected to the city's electricity distribution supply grid.** The first-phase 500KW Solar PV array is already operational and will augment power supply to the ICC, where COP17/CMP7 is being hosted, to reduce the carbon footprint of the event.

It serves as a high-visibility flagship project, demonstrating the country's intents and capabilities around world-class renewable energy projects and potential investment opportunities. **In displaying highly efficient modern solar technology, the project will also demonstrate how the regulatory processes around renewable energy projects in South Africa can be fast-tracked.**

The Solar PV array, when complete, will be one of the largest in the country, ensuring that the eThekwini Municipality contributes strategically to the country's renewable energy targets set by the Department of Energy.

COP17/CMP7 delegates will be offered guided tours to the CCR Expo, where Soitech SA, the company behind the project, will have a prototype solar tracker on display, feeding into the Durban grid. Guided tours will also be provided daily to the plant which is situated about 25km north of the city. A full demo of the plant, including live web feeds and video-streaming, will also be available at the Soitech stand. Information on the construction of the plant, energy output and carbon offset of the COP17/CMP7, replete with digital displays and satellite tracking from the site, will also be available at the stand.

Soitech SA is a leading global solar company which has also put its support behind the COP17/CMP7 opening ceremony/inauguration event to be presided over by His Excellency, the President of South Africa, Mr Jacob Zuma.

In a related project, a demo solar tracker has been installed at the SA Expo Centre which will be used to charge electric vehicles.

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

CLEANTECH COMPETITION

New business ventures within the green economy are enjoying high growth rates around the world and the same is true of South Africa. An innovative competition funded by the Global Environment Facility through the United Nations Industrial Development Organisation (UNIDO) has unearthed some exciting eco business ideas

Contestants from around South Africa were invited to enter the SA Cleantech Competition with their unique solutions to some of the most critical environmental and economic issues of our day.

The objective was for entries to lead to job creation, the delivery of improved products, and the introduction of new services, thus contributing to initiatives that stimulate the economic growth of our country.

Concepts for green buildings, renewable energy and energy efficiency were some of the categories in which hopeful entrants submitted their ideas.

The competition was a component of the Department of Environmental Affairs' "Greening of COP17/CMP7" project and was administered by the National Cleaner Production Centre (NCPC) at the Council for Scientific and Industrial Research. South Africa, in order to organise a successful competition, is benefiting from the experience of experts from California, USA, working for an organisation of the largest clean technology competitions in the world.

Entrepreneurs and SMEs were permitted to enter their business ideas either as a "breakthrough green innovation", or as an "innovative adaptation of an existing green idea". A panel of experts has selected five finalists in each category and the category winners will be announced at a gala awards ceremony on 8 December, during the COP17/CMP7 conference.

Finalists will receive a start-up package, top-level international and national mentorship and be matched with potential investors.

The competition will become a COP17/CMP7 legacy project, as it will be an annual showcase, led by the Department of Trade and Industry through the NCPC.

RETROFITTING ICC

The ICC has a strong environmental vision and policy, and has recently obtained its ISO14001 certification. It will add this to its existing ISO9001, ISO22000 and OHSAS18001 certifications

World-class high-tech green building

The building is of a world-class, high-tech design, incorporating green elements such as large glass facades for natural lighting, energy-efficient light fittings and air-conditioning systems, as well as indigenous landscaping, which results in limited need for irrigation. The ICC's water use profile is thus low for a building of its size and it is currently rolling out upgrades to its ablutions, which include sensor taps for hand washing.

Building on-site food production

The ICC grows its own culinary herbs for use in its kitchen, which serves the majority of catering needs at the ICC. This initiative will be expanded in the near future to include a wider variety of herbs, as well as vegetables.

Dedicated to waste reduction and recycling

The convention centre focuses on minimising waste at source. Key interventions include reducing the supply of bottled water for events and functions, favouring instead tap water-filled jugs and water dispensers. This is made possible by the excellent quality of Durban's tap water, which is completely safe to drink. The ICC also has a stringent waste separation policy which aims to recycle the maximum possible volume of waste. During the first half of 2011, more than 50% of the waste generated at the ICC and DEC was recycled.

Leading in energy efficiency

The ICC and DEC buildings have recently undergone an energy efficiency retrofit, which includes the latest in lighting technology. This retrofit is anticipated to reduce the energy requirements of the complex by approximately 7% of the current total demand.

Through a recent partnership project between the eThekwini Municipality, Philips Lighting Southern Africa and Eskom, 155 street lights in the ICC precinct have also been retrofitted with energy-efficient iridium LED street lights.

GOOD GREENING

Responsible greening begins with sound principles in place. Accordingly, COP17/CMP7 has implemented strategies which not only keep the event green, but are sustainable in the long term

The National Department of Environmental Affairs is organising a spectacular expo as part of COP17/CMP7 to bring to life a tangible way in which South Africa and other countries should be responding to climate change adaptation and mitigation. Apart from the riveting array of exhibitions and side events, the way in which the Climate Change Response (CCR) Expo has been organised showcases a variety of sustainable options to consider in an event of this nature. COP17/CMP7 aims to be a low-carbon event based on sound event greening principles and some of the highlights are outlined below.

Greening guidelines and Responsible Exhibitor Charter

Event greening principles were included in the planning and preparation of the event right from the start. These influenced the design of the expo, the procurement of goods and services, resource management and measures for leaving a positive legacy. A Responsible Exhibitor Charter was compiled which exhibitors had to sign together with their formal contract. This commitment ensures that the expo not only showcases greening, but is implemented in a responsible manner with a focus on long-term sustainability.

Exhibitors were also requested to provide motivation around their products or services to ensure that they comply with the strict criteria for showcasing local eco solutions and initiatives. South Africa's top 10 flagship projects will be on show in the CCR Expo, while the mini beehive will be on display in the outside space (with the full-scale beehive at the Botanical Gardens).

Green design

Right from the outset, the organising team aimed to incorporate thermal design and innovative features to reduce energy consumption through using natural light and ventilation. A canopy will be made from wild banana leaves and alien vegetation to provide shade across a large section of the expo, where delegates can relax. After the event, the gumpoles will be used to create structural supports in dune rehabilitation projects along the east coast, while the leaves will be composted.

Eco procurement

A large focus was on the procurement of Environmentally friendly goods and services, as well as supplying environmentally friendly products to exhibitors, such as bamboo pull-up banners and chloride-free removable vinyl. The networking marquees will be soundproofed with an exciting new, environmentally friendly board which was sourced for the event, while the cleaning company has committed to using only environmentally rated cleaning products. Furthermore, in line with the greening principle of sourcing everything locally, the organisers are using as many local suppliers as possible. Throughout the process, environmental specifications were included in the terms of reference to ensure that the highest-quality products and services are provided.

Green exhibitions

Standard exhibition stands are not very energy-efficient. However, the organisers have afforded all exhibitors the option of having a "green stand package". This includes LED lighting, reusable fabric branding and biodegradable carpeting. All other elements of the shell scheme – the aluminium frames, boards and furnishings – are reusable products supplied locally.

Waste management

Specific attention was given to the issue of reducing waste management generated at the event. Where possible, disposable items have been substituted by reusable ones. For this reason, bottled water has been banned from COP17/CMP7 and replaced with water coolers.

Recycling of consumer waste is encouraged through the implementation of a twin-bin system throughout the expo. On-site waste management staff will sort recyclables into different waste streams (paper, plastic, aluminium tin cans and cardboard) for removal. A demonstration recycling area has been set up where visitors can see how this is done.

Additional bins for biodegradable waste will be made available in the food areas and later used for compost. The organic waste will go to an onsite worm farm and used for composting. The kitchens will also receive additional composting bins for their biodegradable waste behind the scenes.

Waste reuse is being promoted by diverting unneeded branded substrates after the expo to Woza Moya, a project at Hillcrest Aids Centre Trust, where they are creatively recrafted into various products by people affected or infected with HIV/Aids. This project not only provides training in crafting, but also results in job creation, as the products can then be sold to generate an income.

Food vendors are working with the FoodBank, the local food redistribution organisation, to ensure that uneaten food can be redistributed to those in need.

Energy efficiency

Ensuring an environmentally friendly supply of power to the venue has been challenging, with the focus on energy efficiency as an integral part of the planning and implementation. The wild banana leaf canopy should reduce the need for air-conditioning, while energy-efficient lighting is provided, where practical. All back-up generators will run on biodiesel (B50) sourced from used cooking oil. Live monitoring will also be provided on-site and used to calculate the footprint of the event. A demonstration PV tracker will be placed at the transport hub and will also provide energy to the expo for general consumption.

Water management

Visitors to COP17/CMP7 will be encouraged to drink Durban's Blue Drop certified potable water, as there will be no bottled water sold at the CCR Expo. There will be water coolers throughout the venue, with cool, clean drinking water filled from the taps. Plastic cups

will be provided at the coolers and recycled through the on-site waste management system. However, participants are encouraged to use water bottles instead of disposable cups. Water conservation messages focus on the importance of water, water scarcity and the fact that eThekwini's water is safe to drink.

Rainwater harvesting is being promoted through the installation of 10 rainwater tanks and guttering to redirect water to these tanks. This will be used to water the CCR Expo plant landscape.

Sanitation

Alternative sanitation solutions were explored. However, due to the number of people expected at the event over such a short time, the best option was to reduce the amount of chemicals associated with portable toilets. The eThekwini Municipality has installed container toilets that will connect to an existing sewerage line. It has also procured mobile toilets which do not use formaldehyde. Some of these mobile toilets will also feature waterless urinals.

Transport

The expo is situated right next to the transport hub to ensure efficiency and accessibility. No private vehicle parking is provided in order to encourage the use of public transport or the park-and-ride system. Information will also be provided about the availability of bicycles to rent and the establishment of cycling routes to encourage visitors to use non-motorised transport.

Protecting and enhancing biodiversity

All plants used at the expo have been sourced locally and after the event, with the assistance of the eThekwini Municipality's Parks Department, they will be donated to disadvantaged schools.

KZN biomes will be on display (wetland, woodland, grassland, forest, dune and river), while indigenous tree and river names were used for identification of venues at the expo (Water Berry, Willow, Forest Olive Tree, Fever Tree, White Stinkwood, Forest Mahogany and Quinine Tree).

Communication and education

Throughout the process, the suppliers and sub-contractors have been informed about the importance of event greening and what they can do to contribute. Presentations were given at the various stakeholder sessions and included in the exhibition manual to empower exhibitors to make greener decisions as they plan for, and then actually manage, their exhibition spaces. An educational session was also held on-site with the different suppliers working at the venue to ensure that they are familiar with the recycling system, the reason for banning bottled water and the ultimate importance of their actions in relation to resource management.

A stand has been compiled to showcase how event greening principles were included in the expo, with a map of where different initiatives can be seen. The stand will also provide information about the CEBA initiative and encourage visitors to offset their environmental footprint. University students (from the tourism and environmental departments) have been recruited to work at the CCR Expo. This is great experience and exposure for them, and they will be able to assist the visitors at the event.

School tours to the recycling centre have been organised through Earth Organisation, which will educate children about recycling. The CCR Expo is also funding disadvantaged schools to take these tours.

Measuring and evaluation

While the aim was to reduce the impact of the expo's carbon footprint, wherever possible, the overall eco footprint of the event is also being measured to make recommendations for future events. Live energy monitoring is being undertaken, while the generation of waste and recyclables, as well as water consumption, will be measured daily. These will all be included in the final COP17/CMP7 Sustainability Report.

The Green Stand Awards will give recognition to organisations which took environmental principles into consideration in the design, structure and

communication of their stands in five categories. An awards evening is being planned to hand out certificates and pay tribute to these exhibitors for their responsible (and often imaginative) greening measures and the example they have set to others.

Legacy

The legacy of the expo is demonstrated in various initiatives which reflect local economic development and social cohesion. As an example, unemployed women from local communities will undertake the cleaning of the expo premises and structures. They have received training to enable them to earn money and acquire work experience during COP17/CMP7.

A variety of items which have been procured for the expo will be redistributed to public institutions after the event to ensure that they are used effectively, rather than disposed of. These items include wheelie bins, branded recycling bins, carpeting, plants and the worm farm. The food garden which will be on display at the expo will be donated to a local orphanage, which will receive ongoing support from the service provider to ensure that the garden remains healthy and productive.

Please help us make this a success!

PLANTING A MILLION TREES

A collaborative project between the KwaZulu-Natal Provincial Government and the Wildlands Conservation Trust, the KZN Integrated Greening Programme has the ambitious goal of creating a network of "carbon farmers"

With more than 115 000 trees planted this year under the auspices of the project, the Greening Programme is already showing heartening results.

The aim is to develop a comprehensive community greening programme which ultimately hopes to see several areas of the province being reforested.

It's supporting a wide range of developments, including the creation of "treepreneurs" growing indigenous, edible plants, "wastepreneurs" collecting recyclable waste, "greenpreneurs" trading in bicycles, water tanks and solar devices and conservation projects linked to reforestation and eco-tourism.

The idea is for treepreneurs to propagate high numbers of indigenous fruit and other trees and then barter these with greenpreneurs for food, clothes, building materials and educational support.

The trees will eventually be cared for by local communities, working as "green teams".

Wastepreneurs will also barter their recyclable waste for livelihood support. Wildlands will be selling this waste and reinvesting the resulting income into the programme.

Treepreneurs and wastepreneurs who show enterprising qualities will be encouraged to become entrepreneurs in this bartering process and will be encouraged to grow and trade food for other necessary items.

The reforestation project is inspiring in its simplicity.

A network of carbon farmers will be facilitated, with each farmer securing 1ha of land. He or she will then be given 1 500 indigenous trees, 500 fruit trees and agricultural support.

In five years' time, it's estimated that these farmers will start seeing a sustainable return in the form of tCO_2e credits and within seven years, they'll start seeing a financial return on their orchards.

Wildlands and the provincial government are hoping to set the tone for other public-private partnerships that fast-track rural development through eco-tourism and the sustainable use and management of rural communities' heritage assets.

So far this year, the Greening Programme has employed 8 400 community facilitators and 25 200 greenpreneurs. About 116 400 trees have been planted, 232 800 propagated, 23 800ha secured for carbon farmers and 397 130kg of recyclable waste collected.

ACCESS TO SUSTAINABLE ENERGY

Worldwide, 1,4 billion people are still living without access to electricity, while over 3 billion people still use firewood and coal for cooking and heating, an activity that causes pollution and is estimated to kill two million people annually. The UN is therefore leading a global initiative called "Sustainable Energy for All" to tackle this problem

UN Secretary-General, Ban Ki-Moon, has called on governments, the private sector and local communities to focus on the development of energy sources as part of their poverty alleviation projects.

The initiative seeks to achieve three objectives by 2030:

- **ensuring universal access to modern energy initiatives;**
- **doubling the rate of improvement of energy efficiency;**
- **doubling the share of renewable energy in the global energy mix.**

The UN Country Team, in partnership with the South African government, is developing a programme of support to assist local communities in meeting these objectives. The programme brings together UN agencies like UNIDO, UNDP and UN Women, as well as the World Bank, the private sector and bilateral donors.

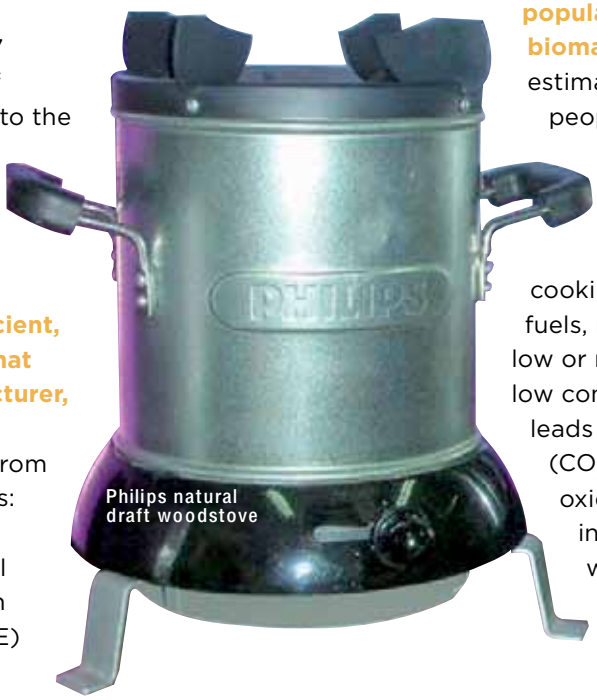
A side event of the COP17/CMP7 conference will showcase some of these initiatives during a site visit to the iLembe Community District in KwaZulu-Natal *(see the yellow box on the right-hand page)*.

The South African programme includes providing low-income households with efficient, low-pollution stoves, a product that international electronics manufacturer, Philips, has fine-tuned.

Two woodstoves have resulted from several years of research in its labs: a natural draft woodstove and a fan-assisted version. The Industrial Development Corporation (IDC) in SA and African Clean Energy (ACE) are currently investigating the potential to manufacture and distribute these stoves in southern Africa.

The feasibility project included the completion of an exciting pilot study to test the suitability and market acceptance of the fan-assisted woodstove in an informal settlement in Port Elizabeth.

The Gqebera Township is situated in the southern part of Port Elizabeth and the selected study area is comprised of about 1 000 informal dwellings in the south-western part of the informal settlement. This area was selected because the households are not supplied with municipal electricity and therefore use wood fires and paraffin chiefly for heating and cooking. In addition, plentiful wood fuel sources are readily available in the surrounding areas.



Philips natural draft woodstove

According to the World Health Organisation (WHO), **more than half of the world's population uses solid fuels from biomass and coal.** It has been estimated that more than 2,4 billion people, generally among the world's poorest, rely directly upon wood, crop residues, dung and other biomass fuels for their heating and cooking needs. But these traditional fuels, normally available locally at low or no cost, are characterised by low combustion efficiency which leads to emission of carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O), which all result in an increase of greenhouse gases when the rate of consumption of biomass is higher than its replacement. Also, the use of traditional fuels is associated

with elevated indoor emissions of suspended particles such as PM10 and PM2,5, pollution that increases the risk of acute respiratory infections (ARI) and other diseases such as cancer and tuberculosis. These infections are among the four major causes of diseases and deaths in the developing world.

As is the case in Gqebera Township, paraffin is also a widely used fuel source in developing countries. It's a choice not only motivated by the affordability and accessibility of paraffin, but also by the low cost of paraffin appliances. Unfortunate side-effects of the popularity of paraffin and related appliances include poisoning, respiratory illnesses as a result of indoor air pollution, burns, fires and once again, increased levels of greenhouse gases and global warming. The WHO estimates that between 300 000 and 500 000 sub-Saharan African child deaths per year could be a direct result of burning biomass indoors.

About 90 stoves were distributed to an equal number of Gqebera households during the pilot study, which yielded very promising results.

Firstly, as a result of the stove being smokeless, indoor pollution was negligible.

Secondly, its ability to burn wood efficiently and cleanly saved the considerable energy used in making charcoal, with a corresponding reduction in CO_2 emissions.

The secret to the efficiency of the stove is a long-life, brushless fan that forces a controllable flow of air through the stove from below. To start the oven, the cook lights the fuel (typically wood, although the stove works with any biomass source) and then switches on the fan, which runs on a rechargeable battery. The fan improves the fuel-to-air ratio, helping the stove reach cooking temperature in as little as one-fifth of the time taken by a traditional, three-stone fire. Once lit, the flow of air ensures a higher burning temperature.

Philips research also carefully chose the materials used to build the stove for low thermal mass and high heat insulation.

A field trial in India in late 2005 showed that, when used properly, **the woodstove typically reduces fuel consumption to one-third of that used by traditional, three-stone fires. This alone contributes to a better use of the available resources, and could slow deforestation.**

But perhaps more significant is the advantage to the people using the stove. Apart from faster and more convenient cooking, the greater energy efficiency means the stove needs less fuel. This saves the cost or the time taken to gather fuel. It also burns the fuel completely and inside a portable container, which saves the time and effort of cleaning up afterwards.

The stove was exceedingly well received by the Gqebera community with cost savings ranging from R100-R300 per month because of reduced paraffin purchases. **The stove was also easily used as a superior space heater by placing a piece of corrugated iron on top of it. What's more, it was safer to use due to its stable design.**

The 12-hour battery charging time, however, proved challenging in an area where electricity connectivity was either non-existent or illegal. Households reported that they charged the stoves either at corner shops or neighbours' houses.

SIDE EVENT

Delegates interested to see how this project is being rolled out will have the benefit of a COP17/CMP7 side event on 8 December 2011 to Groutville village, in the iLembe District Municipality, a region endowed with a wealth of historical and cultural significance. It was the headquarters of Zulu King Shaka KaSenzangakhona, and home to the first African Nobel Prize laureate, Chief Albert Luthuli.

The event is intended to bring together representatives of the government of South Africa, including President Zuma, UN Secretary-General Ban Ki-Moon and other high-level representatives of foreign governments and multilateral organisations.

Guests will witness how access to affordable energy has transformed the lives of community members who have benefited from electrical solar panels, the efficient Philips low-pollution cooking stoves, solar water heaters and a low-power consuming lighting system. As part of the event, some of this equipment will be installed and demonstrated to the invited guests.

The South African government hopes to use the event to encourage effective advocacy around a sustainable energy programme that can be expanded nationally.

The event will also be used to initiate dialogue with the SADC community to formulate policies and action plans for energy efficiency, based on the UN Secretary-General's initiative on the 2012 International Year for Sustainable Energy for All to be presented at Rio+20.

RETROFITTING HOUSEHOLDS
CATO MANOR

As the world's attention turns to South Africa for the duration of COP17/CMP7, the country's e orts to address climate change will be under the spotlight. A retrofit programme in Cato Manor, Durban, is an impressive example of these e orts

Building on the groundbreaking Kuyasa low-cost housing project in Khayelitsha, Cape Town, the retrofit programme in a Cato Manor cul-de-sac is being implemented by the Green Building Council of South Africa (GBCSA).

The Kuyasa project, underwritten chiefly by the Department of Water and Environmental Affairs, was South Africa's first internationally registered Clean Development Mechanism Project under the Kyoto Protocol and was the first Gold Standard Project registered in the world. The development earned carbon offset credits through the installation of insulated ceilings, solar water heaters and energy-efficient LED lighting in more than 2 300 low-cost homes. The carbon income has been earmarked for the maintenance and sustainable future expansion of the installations.

The GBCSA is now leading the "green retrofit" of 30 Cato Manor homes, providing the area with the same socio-economic, health and environmental benefits that Khayelitsha residents have experienced.

The 30 houses will be fitted with rainwater harvesting systems for better water security and food gardening, LED lighting, solar water heaters, insulated ceilings and a heat insulation cooker. Indigenous shade and fruit trees will also be planted around the homes, and LED street

lighting installed around them.

This innovative project is being funded primarily by the British High Commission in South Africa. It is endorsed by the Department of Water and Environmental Affairs and is being carried out in collaboration with the eThekwini Municipality.

Other project sponsors include Ascas, the Botanical Society, Cosmo-Dec, Eskom, IsoBoard and Natural Balance (Wonderbags).

Project implementers are Carbon Programmes, with the same team who conducted the Kuyasa retrofit, and Durban-based Khanyisa Projects. The site was chosen because of a 2009 collaboration between South African and Dutch architects who built a rehearsal space for musicians, made entirely of recycled material from the area.

Says Brian Wilkinson, CEO of the GBCSA: "Worldwide, one in every three tons of carbon is from buildings. By improving the energy efficiency of low-income homes, one reduces energy costs, as well as the health burden and safety risks for residents. One also reduces

environmental damage – most notably by reducing the greenhouse gas emissions associated with South Africa's predominantly coal-generated electricity."

People living in low-income housing spend a disproportionate amount of their income on energy and suffer a disproportionate health burden. Illnesses include major respiratory diseases which result from extreme temperatures and the local pollution (and high levels of condensation, in certain areas) from the burning of fossil fuels such as paraffin for heat and cooking.

Energy efficiency and introducing more renewable sources of energy is a current priority for South Africa, as it faces a medium-term national power supply shortage and steeply rising electricity tariffs. Significant job creation potential is another very important reason to pursue energy efficiency measures.

An exciting aspect of the Cato Manor project is the Wonderbag™ heat insulation cooker, a product of local social enterprise, Natural Balance. Used an average of three times a week, a Wonderbag™ can save 0,5 tons of carbon per house per year.

The Cato Manor retrofit is being registered as a Voluntary Emission Reduction (VER) project on the voluntary carbon market, through an independently audited registry called Credible Carbon. It is a very small-scale project, so the sale of credits will generate a small level of carbon revenue, but it has important symbolic value.

The Kuyasa project has had additional, impressive benefits that will also hopefully be features of the Cato Manor initiative. These include improved thermal performance in the home (a 5% temperature increase in winter and a 5% decrease in summer) and a saving of up to 40% on electricity bills, while 76% of households have reported a decrease in the frequency of respiratory illnesses.

The area of skills training is another potential boon resulting from such retrofit projects. The Kuyasa project resulted in accredited construction-related technical training in plumbing, electrical wiring and carpentry for 60 local residents, as well as other training in computers, administration, storekeeping and catering for a further 257 residents. This proved that it is possible to train relatively unskilled people from local communities to produce quality workmanship in a short period.

Some of these workers have since formed a company, Kuyasa Energy Services, which provides an ongoing project maintenance service for Kuyasa residents and also takes on further energy efficiency project work for other clients.

The Kuyasa project is validated to reduce carbon emissions by over 6 500tCO_2 per annum.

SIDE EVENT

A guided tour of the Cato Manor retrofit programme will be held for COP17/CMP7 delegates on 5 December. Buses will be leaving the transport hub near the International Convention Centre in Durban at 17:30.

For further information, contact the GBCSA on +2721 659 5943.

If you are able to donate funds to the rollout of the project, or if you would like to purchase carbon from this kind of community initiative, please contact Sarah Rushmere on +27 82 771 5137 or email sarah.rushmere@gbcsa.org.za.

BEEHIVE INSTALLATION

COP17/CMP7, our "African COP", is a once-in-a-lifetime opportunity for communicating concepts for mitigation and adaptation to climate change, based on the fundamental role of healthy ecosystems in providing resilience

A large living art installation in the shape of a traditional Zulu beehive hut is being used to inspire delegates and public visitors to the Expo for Climate Change Response at COP17/CMP7 (CCR Expo). This structure symbolises the links between natural systems, cultural values and human aspirations to development and achievement.

It is hoped that the beehive generates wideranging publicity around the need for mitigation against climate change, using the productivity of ecosystems.

The display also resonates with South Africa's growing practice of using ecosystem approaches to environmental management and climate proofing. These include the reforestation of riparian areas to stabilise rivers under high flow conditions; the removal of alien vegetation to improve the quality and quantity of water to serve human needs; the conservation of grasslands to protect their functional role as carbon sinks; and the restoration of mangroves to protect terrestrial edges against marine erosion.

The di erent components of the installation represent the balanced and integrated approach that we will need to overcome the challenges which lie ahead of us. While engineering solutions will undoubtedly play a large part in climate-proofing the human habitat during the 21st century, the economy, elegance and resilience of nature will have to provide the underlying ecological infrastructure for sustainable solutions.

The Zulu beehive hut is the core design element of the installation. **Chosen for its cultural relevance to KwaZulu-Natal, its elegant shape and the building materials – produced by natural ecosystems – are symbols of human settlement, shelter and security.** The design resonates with other nature-linked cultures across the globe in presenting the iconic shape of classic beekeeping, itself a symbol of the interconnectedness between plants, insects and people in stable, productive landscapes.

The large, outdoor beehive hut, 10m in diameter and 5m high, is made of stylised "living walls". These are structures whose surfaces comprise growing plant foliage and flowers, while the containers housing the living roots are concealed in the body of the wall.

The beehive hut represents important functioning ecosystems. It features grassy textures which represent the all-important grasslands biome of South Africa. The associated wetlands of South Africa are represented by a water feature inside the structure, which provides a soothing element of movement and sound. Artifacts derived from natural resources that reflect traditional Zulu culture are subtly woven into the design.

A walkway enables visitors to penetrate the heart of the beehive, immersing themselves in the nature-dominated environment of the interior. The walkway is made of steel grille with a hexagonal honeycomb structure, a feature that connects the elegant design of living nature with human ingenuity and technical know-how.

When you walk into the beehive, you feel a sense of calm. The gentle sounds of running water, focused by a small waterfall and augmented by birdcalls, will provide a peaceful refuge to COP17/CMP7 delegates and exhibition visitors.

NON-MOTORISED TRANSPORT

To promote the use of low carbon transport during COP17/CMP7, a project to supply 600 bicycles for the use of delegates and non-delegates has been implemented

Prior to the initiation of South Africa's preparations for COP17/CMP7, the **eThekwini Municipality had begun designing a wide-ranging, non-motorised transport strategy which included plans around a broad network of cycling paths in the city centre and adjoining areas.** The municipality used the opportunity of COP17/CMP7 to fast-track the implementation of one of these routes, stretching from the Botanical Gardens, past the ICC, to North Beach. (The full five-cycling path plan is shown in the diagram on the right.)

The project is a collaboration between the eThekwini Municipality, KfW, the Global Environment Facility, the United National Industrial Development Organisation (UNIDO) and the Department of Transport.

The initiative includes a sophisticated bicycle management system to facilitate the hiring and maintenance of the bicycles, complete with the physical infrastructure to rack the equipment.

Of the 600 bicycles that will be used during COP17/CMP7, 300 of them are "Qhubeka" bicycles, used in a broader programme to promote cycling throughout South Africa *(see next page)*. At the end of COP17/CMP7, these bicycles will be returned to the Department of Transport and distributed to schools.

The remaining 300 bikes have been funded by the Global Environment Facility, through a project implemented by UNIDO. These bikes are "city bikes" that have been designed with city cycling systems in mind.

Once COP17/CMP7 is complete, **the eThekwini Municipality will extend the bicycle hire period into January to ensure that tourists also benefit from the project during Durban's peak holiday season.** It is envisioned that the initiative will then be slowly extended, establishing a permanent bicycle hire system, initially in a closed bicycle hire system for municipal staff only.

In addition to this closed hire system, the eThekwini Municipality will begin working with existing commercial bicycle hire companies to connect different hire systems so that clients can hire a bicycle at one site and return it to another.

SHOVA KALULA BICYCLE PROJECT

Shova Kalula, a Zulu phrase that is loosely translated as "Pedal Easy", is a simple, but e ective bicycle project currently being rolled out by the South African government, chiefly for the benefit of students forced to walk more than 6km every day to school

It began as a pilot project in KwaZulu-Natal in 2001, but proved so effective in **providing a low-cost mobility solution for both children and adults in rural and urban areas that the National Department of Transport took a decision to roll the project out countrywide.**

It started nearly 11 years ago with second-hand bicycles that were donated from Europe. Small businesses were set up where these bicycles were fixed and either donated to communities or sold at subsidised prices.

After a thorough evaluation of the project, the department decided to distribute new bicycles only, as spares for some of the second-hand bicycles were unobtainable. The project was then realigned to involve the Department of Education, the nine provinces and municipalities.

The Minister of Transport and members of the Executive Committees responsible for transport agreed that **the project should be rolled out nationally as one of the interventions for the provision of a low-cost means of mobility for people, especially those in rural, remote and poorly resourced areas.**

Studies conducted by the Human Sciences Research Council and the Department of Education indicate that poor access to education inhibits children's ability to get basic education and results in a high rate of learner dropout. There is also increased absenteeism from schools and poor pass rates as a result of fatigue among those learners who walk long distances to school.

The findings of the National Household Travel Survey of the Department of Transport (2003) indicated serious challenges regarding the plight of rural scholars. According to the findings, there are about 13 million

learners in the country. **Approximately 10 million of these learners rely on walking as the only mode of gaining access to education.**

Furthermore, about 3 million learners walk more than 6km to get to schools. The majority of them are in rural and farm schools. They walk due to the fact that there are often no adequate transport services available and – where these are available – the families are too poor to afford to use them.

It is against this background that the department seeks to target and assist these learners in order to improve their mobility and access to education through the Shova Kalula Bicycle Project.

The National Department of Transport, provincial departments responsible for transport, Department of Education, municipalities and non-governmental organisations involved in cycling are poverty alleviation partners in the project.

Schools that will benefit from the initiative are identified by the provincial Departments of Transport in consultation with both the Department of Education and the municipalities concerned.

These schools then use the following criteria to determine which learners should qualify as beneficiaries. Learners should:

- Come from low-income families.
- Have no access to public transport.
- Be unable to afford the costs of public transport.
- Walk more than 3km as a single trip to school.
- Be between Grades 3 and 12.
- Be able to understand basic road safety education.
- Have the capability to ride a bicycle.
- Learners who walk more than 6km to school are prioritised.

Safety and security issues are an essential pre-condition in promoting cycling and non-motorised transport. In this regard, the department, provinces, municipalities, the South African National Roads Agency Limited and provincial roads agencies are working together as a collective in constructing dedicated bicycle pathways, implementing safety programmes and education parallel to the roll-out of bicycles. Partnerships with private sector and civil society are continuously being developed to promote cycling and to create a cycling culture across all sections of the citizens.

More than 75 000 bicycles have already been distributed under the banner of the Shova Kalula Bicycle Project.

Since 2007, when a team consisting of the national and provincial Departments of Transport, bicycle NGOs, bicycle experts and the bicycle industry agreed on specifications for a robust, rural bicycle, more than 40 000 learners have had access to the distinctive yellow Shova Kalula bicycles.

After COP17/CMP7, the Shova Kalula team will distribute the bicycles that are being used by the delegates to learners in all nine provinces of South Africa.

COASTAL **CLEAN-UP**

The International Coastal Clean-Up was started by one woman walking along a beach in Texas, who was appalled at the amount of litter she saw. Today, the programme stretches across 127 countries, incorporating more than 700 000 volunteers

That enterprising American woman all those years ago managed to organise 2 800 Texans in two hours who collected 124 tons of litter.

It was an amazing achievement and one that KwaZulu-Natal's (KZN) wildlife conservation organisation, Ezemvelo KZN Wildlife, is trying hard to emulate.

The organisation joined the International Coastal Clean-Up in 1996 with a pilot project involving 460 people who removed nine tons of litter from 33km of beach, and five divers who collected 7kg of litter from the coastal reefs.

This year, 550km of beach was covered by 7 604 volunteers, who collectively picked up 35 tons of litter. The aim was to try to cover as much of the province's 620km-long coastline as possible, so Ezemvelo KZN Wildlife should be proud of their efforts.

They managed to cover the large area by mobilising staff and honorary officers who, in turn, set up networks of hard-working volunteers in the different provincial districts.

Volunteers included schools, individual citizens, religious groups and businesses. Efforts were backed up efficiently by the Ocean Conservancy in the USA.

Sasol, the Plastics Federation of SA and ABI also partnered with Ezemvelo KZN Wildlife on the project.

On average, volunteers managed to collect 4kg each of litter with some of the more unusual items collected including a toilet cistern, toaster, handcuffs and a headless chicken! About 70% of the litter collected comprised plastic items.

The tonnage compares favourably with the past three years; in 2008, 2009 and 2010, nine, 56 and 54 tons of litter respectively were collected.

The data around the amount and types of litter is forwarded to the USA on an annual basis and forms part of a global database, used as an educational tool for heightening awareness around the need to reduce pollution globally.

Currently, the database represents over 100 million pieces of data collected from 100 countries over a 25-year period.

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