Q: **What is the Climate Smart Cape Town Campaign?**

A: The Climate Smart Cape Town campaign aims to take advantage of the hosting of the Climate Change COP 17 in Durban in November/December 2011 to profile and market Cape Town as a leading city in addressing the challenges posed by climate change and to promote climate change literacy and awareness among Cape Town residents.

The Climate Smart Cape Town Campaign has been developed to align and guide climate change related communications to achieve four objectives:

1. Build the profile of Cape Town as a leading city in addressing cimate change;
2. Enhance Cape Town decision makers' and residents' understanding of climate change issues, including the importance of the United Nations Framework Convention on Climate Change meeting (COP 17) in Durban in November/December 2011, and to obtain their support for and participation in managing these to create a more resilient Cape Town;
3. Support and enhance local, sub-national, national and continental energy and climate change initiatives;
4. Facilitate the involvement of numerous stakeholders in the COP17 Conference.

Q: What is COP17? And why is it so important?

A: The Conference of the Parties (COP) is an annual conference hosted by the United Nations Framework Convention on Climate Change (UNFCCC). The 17th conference will be held in Durban from 28th November to 9 December 2011. There are 192 countries that are currently signed up, including all of the major economies and greenhouse gas emitters. A primary focus of the conference will be to secure a global climate agreement because the Kyoto Protocol's commitment period will end in 2012.

Other key questions that will need to be answered are:

- How will we put into action what was agreed at the previous conference in Cancun (COP16)?
- How will climate change adaptation and mitigation be financed?

COP17 will be an important climate change conference as it is the last chance to agree on a replacement for the Kyoto Protocol, the only international, legally binding commitment for countries to cut greenhouse gas emissions. If a replacement is not agreed upon, it is likely that countries' emissions will continue to rise unabated, unless national commitments are enforced. This will have potentially devastating effects as runaway climate change ensues.

For more information visit the following websites:

- UNFCCC: http://unfccc.int/2860.php
- COP17-CMP7 official website: http://www.cop17durban.com/Pages/default.aspx

Q: Who is behind the Climate Smart Cape Town Campaign?

A: The Climate Smart Cape Town Campaign is driven by the Cape Town Climate Change Coalition (CTCCC) consisting of 23 member organisations. The Cape Town Climate Change Coalition represents a loose alliance of organisations and partners who came together to support Cape Town's bid to host COP17 in October 2010. Even though COP17 will be hosted in Durban, the partners remain committed to continuing the strong network and the resultant benefits such as knowledge sharing and capacity building with respect to climate change.

Coalition members are: The City of Cape Town, ICLEI, Cape Town Partnership, Cape Town Tourism, Cape Town Routes Unlimited – Cape Town Convention Bureau, University of Cape Town (African Centre for Cities and Graduate School of Business), EXSA, WWF, Environmental Monitoring Group, University of Stellenbosch, University of Western Cape, Cape Town International Convention Centre, Accelerate Cape Town, Fedhasa, Western Cape Provincial Government, Cape Chamber of Commerce, Cape Higher Education Consortium, Desmond Tutu Peace Centre, International Polar Foundation, Optimal Energy, SANParks - Table Mountain National Park, Sustainable Energy Africa (SEA) and Wesgro.

Q: Why is climate change an issue for Cape Town?

A: Cape Town is a coastal city highly dependent on power from coal power stations nearly 2000 km away. Historically, cheap electricity has meant very low levels of energy efficiency in households and production processes. Now the country has been hit by unanticipated severe and worsening national electricity supply constraints resulting in the threat of blackouts and sharp tariff increases. Urban sprawl is compounding these challenges and is entrenching social inequities as the poor generally live far from resources. People remain dependent on private vehicles, and only now are the first steps being taken to replace a weak and under-resourced public transport system.

Today, the City faces a triple challenge: a high carbon footprint, poor energy security and vulnerability to the impacts of climate change.

Q: How does climate change affect Cape Town?

A: Although the effects of climate change will be wide spread, with everyone being affected to some degree; these are 5 of the most pertinent challenges that will arise as a result of climate change:

Firstly the risk of flooding throughout the city will increase as rain is likely to fall in heavy showers over shorter lengths of times. This will increase the vulnerability of those living in informal settlements throughout the City, as well as place heavy strain on disaster management and emergency capacities during the winter months. This will also put pressure on systems such as the storm-water system.

Secondly the management of coastal areas will prove challenging. The coast line in Cape Town is long and storm surges and increased swells are expected as weather patterns change.

Thirdly, the city's transport networks will be significantly stressed in instances of extreme weather events like flooding. This will create numerous challenges. One in particular is food security as the large majority of the city's food supply is brought in from surrounding areas.

Fourthly, the hotter, drier climatic conditions will make it difficult for the globally significant and economically valuable biodiversity to survive, which could threaten the city's resilience – its ability to cope with natural disasters.

Finally, all these challenges are set in a development context, where poverty, limited access to services and poor provision of housing will only further exacerbate challenges associated with expected extreme weather events.

Q: What are we asking Capetonians to do?

A: The Climate Smart Cape Town Campaign calls on Capetonians to take action to help mitigate climate change. The following slogans will be used to create awareness of 6 important actions that residents can take:

Biodiversity:	Conserve nature. Green spaces cool the city.
Water:	Save water. Or climate change could mean we have none.
Electricity:	Save electricity. Don't give climate change more power.
Transport:	Take the bus now. Or take the heat later.
Cycling:	Let's clear the air. Cycle to work.
Recycling:	Recycle. We don't need another mountain.

Q: How can Capetonians participate?

A: Everyone can be involved in the Climate Smart Campaign. Keep up-to-date with the latest news and happenings by following the Climate Smart Cape Town Campaign on Facebook (www.facebook.com/climatesmartct) and Twitter (@ClimateSmartCT).

The website and blog (www.climatesmartcapetown.co.za) will ensure that Capetonians are up to speed with the latest information with regard to climate change. Everyone in Cape Town can "take action" and can write their own "take action" slogans and post it on the website.

Q: How is the City of Cape Town addressing climate change?

A: To address energy security and mitigate and adapt to climate change, the City is implementing a rigorous, pioneering programme linked to its development strategy. Fifty programme areas, made up of 115 projects, are co-ordinated through an Energy and Climate Action Plan (ECAP) that will see a lower carbon, more modern, liveable and equitable city which builds on its competitive advantages.

Energy and Climate Action Plan key objectives

- City-wide 10% electricity consumption reduction by 2012.
- All growth in demand for electricity to be in renewable and cleaner energy sources by 2012.
- 10% renewable and cleaner energy supply by 2020.
- Compact, resource-efficient city development.
- More resilient low income/vulnerable communities

Furthermore Cape Town is developing an integrated Climate Adaptation Plan of Action (CAPA) that consists of sector-based adaptation plans. The approach has been two-fold; on one hand to examine significant climate-related vulnerability within the City and develop adaptation programmes around these. The City's Sea Level Rise study and Coastal Protection Zone work fall under this approach, as well as recent studies done on City Catchment Management and the Sustainable Urban Drainage Programme. On the other hand, climate projections have been work shopped with specific sectors within the City in order to establish a range of potential impacts and identify areas of vulnerability and possible adaptation interventions aimed at building resilience to and mitigating climate change risk.

Projects that form part of ECAP and CAPA will be showcased at COP17 in the Climate Smart Cape Town Pavilion. These are:

Buildings retrofits

The City owns in excess of 5 000 facilities. Sixteen buildings have been earmarked for retrofitting and four of these have already been completed. Technology retrofits implemented include installation of high efficiency luminaires; control of air conditioner operating hours; solar water heater installations; thermostat control and power factor corrections.

An energy efficiency audit of the Civic Centre, the City's largest building was completed in June 2010 and the first phase of efficiency interventions has been put out for tender. The implementation of retrofits is expected to finish in 2012.

Solar water heaters have been installed in all 23 nature reserve buildings and 86 solar water heaters in 44 clinics. A lighting retrofit project of all City libraries and clinics is also in the pipeline.

Initial results indicate a 7-year pay-back period on technology interventions, and approximately 22% electricity savings, about half of which are anticipated from behaviour change programmes.

The City's achievements are being used to promote retrofitting and behaviour change programmes in residential and commercial buildings through the Energy Efficiency Forum for Commercial Buildings that the City, in partnership wit.

Public lighting and traffic light retrofits

With national government funding for energy efficiency and demand side management, the City is rolling out retrofitting of street lights and traffic lights. In two years the City has replaced 10,804 luminaires with a resultant energy saving of 3,702 MWh (3,702 tons CO_2) per year. The burning rate of high masts has been increased from 29% to 95% and in the mercury to sodium vapour lamp replacement programme 25,162 lamps have been replaced with a savings of 1,010 MWh (1,010 tons CO_2) per year. This programme will continue to roll out until all public lighting and traffic lights are retrofitted with the most appropriate and up-to-date EE technologies.

Electricity Savings Campaign

This campaign targets residential consumers in order to reduce electricity consumption. The initial campaign focus is on middle-to-high income residential consumers who are using the most electricity and have the most scope to improve efficiencies. In particular, the practice of reducing electricity for water heating is being targeted because hot water geysers are typically the largest power 'guzzler' in the home.

By means of a marketing campaign with the slogan "Electricity is expensive. Saving is simple", the City has devised a practical checklist and developed an information-filled website to encourage residents to save. The Campaign target is to reduce electricity consumption per annum by approximately 2,5% or 120 GWh (120,000 tons CO_2) per year.

Energy Efficiency Forum for Commercial Buildings in Cape Town

This Forum has been established to provide a platform for commercial building owners/managers to share best practice, innovative management systems and viable technologies to increase energy efficiency. This forum enables knowledge exchange and innovation transfer amongst over 200 commercial operations. An Industrial Energy Efficiency Forum is currently being established along similar lines.

Integrated Rapid Transit programme

The IRT is the sustainable transport package of accessible and reliable public transport, encompassing bus and rail. Improved public transport together with other infrastructure development will encourage private car users to switch to public transport. Phase 1 of the

City's Bus Rapid Transit programme was rolled out for the 2010 FIFA World Cup™ in May 2010 with the West Coast service commencing a year later in may 2011.

The service has links to other forms of transport – at rail stations, long-distance bus services and airports. They include a network of convenient, well-lit cycling and walking paths to and from the bus stops and stations to encourage people to 'park and ride'.

Smart Living Campaign and Smart Events Handbook

The Smart Living Campaign is a comprehensive, on-going sustainable lifestyle campaign, aimed at households, council staff, communities, businesses and schools in Cape Town. The campaign is based on the City's Smart Living Handbook series. The detailed and user-friendly 160-page Smart Living Handbook demonstrates how to be resource efficient and covers the themes of energy, water, waste and biodiversity.

The Smart Events Handbook is a 50-page A5 handbook which complements the Smart Living Handbook, and is aimed at encouraging and enabling event greening. The Smart Events Handbook helps event organisers to host events in an environmentally and socially responsible way. It can be used for a range of events, such as meetings, conferences and exhibitions, and applies equally to large sports events and to small local community initiatives.

Cape Town Metro-scale Live CO_2 feed to COP17 Stand

The South African Integrated Carbon Observation Network (SA - ICON) will be pioneering a Metro-scale carbon dioxide (CO_2) and methane (CH_4) observation system around Cape Town in the 4th quarter of 2011 for a period of 12 - 24 months. This system will build on the 20-year long continuous record at Cape Point as part of the Global Atmospheric Watch (GAW) programme of the WMO which although not focused on the urban emissions has demonstrated the value of such measurements as part of top-down assessments of emissions to complement the bottom-up inventory based carbon-footprint assessments. The aim is to complement the Cape Point record with two new fixed high precision instruments on Robben Island and Cape Hangklip, which span the main wind axis for the City, as well as an instrument mounted on the SA Agulhas polar research ship, when it is in harbour. These records will be used to undertake a seasonally weighted assessment of the City's annual carbon emissions. SA-ICON and the City will also collaborate through CSIR to deliver live feeds of atmospheric CO_2 from these stations to COP17 in Durban.

Cape Town's Optimum Energy Future

The Energy Scenarios for Cape Town Study is providing quantitative information to assist with detailed planning and prioritisation of Cape Town's Energy and Climate Action Plan (ECAP). The study looks at various scenarios up to 2050 to determine the effect of energy related interventions and external drivers such as increasing energy prices, carbon taxes and so on. It looks at the relative costs and Geenhouse Gas (GHG) profiles of the different interventions, as well as associated job creation potential.

The Business as Usual Scenario indicates a quadrupling of energy consumption and a tripling of GHG emissions by 2050. Such a future is clearly untenable.

The Optimum Energy Future scenario results in an energy and GHG emissions profile with numerous co-benefits:

- Local economic development of renewable energy, energy efficiency and energy services industries
- Lower energy-service costs to households, commuters, commerce and industry.
- Improved energy security for all sectors:
    - Local generation and reduced demand through efficiency both decreases the risk of, and vulnerability to, bulk supply disruptions.
    - Diversity of energy supply provides protection against disruption of a particular supply option.
    - Investment in local and on-site energy services decreases vulnerability to energy supply disruption and energy price volatility of bulk supplies sourced outside Cape Town or the Cape Town vicinity.

Energy efficiency and renewable energy (RE) often pay for themselves, leading to lower energy costs and more secure supply. There are also many co-benefits: local jobs, a cleaner environment, a more competitive economy.

Other structural changes associated with the Optimum Energy Future such as densification, public transport, and integrated neighbourhoods make for more social cohesion, more liveable cities and communities that are more resilient to external environmental and economic shocks including climate change.

Even without alleviating the greenhouse gas emissions constraints the The Optimum Energy Future makes financial, economic, environmental and social good sense: in fact, in the absence of greenhouse gas constraints it would still be good sense to implement much of the Optimum Energy Future.

Sea Level Rise

The City of Cape Town administers a coastline of approximately 240km long, making it the largest coastal metropol in terms of sea frontage in South Africa. The coastline of Cape Town is arguably its greatest socio-economic and environmental asset. Sea-level rise and higher intensity storm surges thus poses a significant threat to the City. In response to this the City of Cape Town has recently undertaken a Sea-Level Rise Risk Assessment. The intention of this assessment is to not only improve our understanding of sea-level rise and storm surges and the impact this will have on the City of Cape Town, but more importantly, how the City may more effectively manage and reduce risk into the future. As part of this assessment, a GIS inundation flood risk model was developed. This model acts as a baseline informant to determine which areas of the coastline are vulnerable. The Fifth Phase of the Sea-Level Rise Risk Assessment has 'fine-tuned' the model through investigating the influence of local biophysical factors (such as bathymetry, swell refraction etc.) on risk.

Coastal protection Zone

The City's extensive coastline is an asset. Paradoxically, and if the coastline is not more effectively managed, the coastline may become a burden to the City. This burden will arise as a consequence of ill-informed planning decisions to locate infrastructure in the coastal space and the subsequent requirement to protect and maintain such infrastructure against not only sea-level rise and storm surges, but also other dynamic processes such as coastal erosion and migrating dune systems. To avoid this, the City is in the process of developing a Coastal Protection Zone with the intent to shape decisions relating to coastal planning and infrastructure development. This will not only enhance the coast as a shared and common asset, but it will also promote a risk averse approach which is critical in the context of climate change

Marine / freshwater flooding interface

The City developed a climate change model that assesses the flooding impacts of the interaction between the freshwater and marine systems under a changing climate using the Salt River Catchment as a case study. Similar models are being done for the remaining City Catchments.

Sustainable Urban Drainage Systems (SUDS)

The concept of Water Sensitive Urban Design (WSUD) has been incorporated into the City's Spatial Development Framework thus ensuring that integrated management of the urban water cycle will be accommodated within high level spatial planning and development. The City's "Management of Urban Stormwater Impacts Policy" (adopted by Council in May 2009) encourages the adoption of WSUD principles and requires all new developments to incorporate Sustainable Urban Drainage Systems (SUDS) into stormwater management systems. SUDS encourages infiltration and promotes management of runoff quantity and quality at or near source. Implementation of WSUD and SUDS will increase an urbanised catchment's resilience to climate change impacts.

Stormwater management in a changing climate

The Roads & Stormwater Department commissioned in-depth research to determine the most up to date downscaled medium to long-term (25 to 50 year time horizon) climate forecasts for the City. These climate projections focussed on predicting changes in rainfall depth and intensity in order to establish the potential impacts on stormwater infrastructure. On the basis of this modelling, a decision was taken to increase rainfall intensities used in the design of infrastructure by 15% to account for potential future climatic changes.