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Green Goal plan for the 2010 World Cup
Host City Nelson Mandela Bay Municipality

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List of acronyms

BRT	Bus Rapid Transport [System]
CBD	Central Business District
FIFA	Fédération Internationale de Football Association (International Federation of Association Football)
HCTOP	Host City Transport Operational Plan
LOC	Local Organising Committee
NMBM	Nelson Mandela Bay Municipality
PVA	Public viewing area

Executive Summary

The 2010 FIFA World Cup™ to be hosted by South Africa is a major international event, the likes of which this country and continent have not experienced before. Today, international environmental imperatives demand serious attention to the potential impact of mega events on the environment. This is termed “event greening”. South Africa aims to be a world class host for the 2010 FIFA World Cup™ and this would mean a world-class greening effort. Germany pioneered the greening of the FIFA World Cup™ in 2006 through the FIFA-endorsed Green Goal programme and South Africa has therefore both a foundation and a springboard from which to implement the Green Goal programme for 2010. In addition, subsequent World Cup events will need to be increasingly ‘green’, and South Africa could share greening lessons with the next hosts of the FIFA World Cup™, Brazil.

The environmental legacy opportunity presented by implementing a Green Goal program is two fold. Firstly the high media profile of the World Cup can be leveraged to create awareness for the environment, leading to changed behaviour patterns and reduced consumption of critical resources such as water, electricity and fuel, and biodiversity protection. This behavioural change among residents, aligned with appropriate infrastructural modification (e.g. waste recycling facilities, energy efficient lighting and non-motorized transport) will have a long-term positive economic impact benefit in respect of reduced operational and environmental costs.

The second legacy opportunity is concerned with infrastructural improvements, including city beautification and tree planting, new public open space, waste re-cycling centres and awareness campaigns and a modern new stadium with a significant green profile.

The Nelson Mandela Bay Municipality (NMBM) has developed a Business Plan for the Environmental Work stream of the 2010 FIFA World Cup™, defining a list of high level principles and outcomes to guide the greening of the event. The main objectives of the implementation of the Green Goal programme in Nelson Mandela Bay are:

- The greening of the 2010 FIFA World Cup™ event footprint; and
- Leaving a positive environmental legacy.

During a series of workshops and targeted strategy sessions with relevant stakeholders, supported by Letsunyane Associates (LA), the greening strategy of the NMBM has been translated into a detailed Green Goal 2010 Action Plan, which addresses the nine (9) thematic areas:

1. Climate change
2. Energy efficiency and renewable energy
3. Integrated waste management
4. Water conservation
5. Sustainable procurement
6. Biodiversity
7. Transport
8. Accommodation
9. Responsible Tourism

Implementation of projects will be through a range of channels. In some cases, projects link with existing initiatives either being undertaken by the NMBM or Provincial Government has made specific budget allocations for 2010 event greening project

implementation. Certain projects will require partnerships with donors, business, NGOs, civil society and government for implementation.

This Action Plan provides the framework to enable NMBM stakeholders, both public and private, to use their creativity to form partnerships, be proactive and mobilize the necessary resources for a full-scale greening of the 2010 FIFA World Cup™. Below is a summary of the proposed projects by the Nelson Mandela Bay Municipality Host City, in response to the Green Goal.

Projects / Plans	Indicator	Timeframe	Green Goal Budget	Other Budgets	Leader
Determine the carbon footprint of the 2010 event	Finalised report	8 months	-	NMBM / Waste R 2000000	NMBM Public Health: Environmental Management
Establishment of a Climate Change Unit within the NMBM	Inclusion of Climate Change in Performance Management System of each Directorate	36 months	-	NMBM / R 1milion for first yr	NMBM Public Health: Environmental Management / NMBM Electricity & Energy: Projects
Energy Efficient Street lighting: replace existing luminaries.	Reduction of 15 000 tons Carbon/yr	12 months	-	DORA Funding / R 35 milion	NMBM Electricity & Energy: Projects
Replacement Traffic signal heads to LED heads	Reduction of 684 tons Carbon/yr	10 months	-	DORA Funding - Legacy	NMBM Infrastructure and Engineering
Replacement of geysers with solar water heaters - 100 000 installations over 5yrs.	Reduction of 2.2 tons Carbon/year/geyser	5 years	R 1.2 billion	R 1.2 billion / DORA Funding - Legacy	NMBM / Energy
25 MW wind farm, 3 sites, 67.5 giga what hours per annum	Reduction of 70 000 tons Carbon/yr	6 months	R 500 000 000	R 0.5 billion Legacy	NMBM / Energy
Supply luminary replacements to previously disadvantage communities - 75 000 households.	Reduction of 13 000 tons Carbon/yr	4 months	R 400 000	R 14mil / Dora funding	NMBM / Energy
Pre-feasibility solid waste to energy pyrolisis.	Reduction in Solid Waste and Measurable energy production	12 months	TBA	NMBM / Waste	NMBM / Energy
Waste management and operational plans for stadium, fan parks, PVA's and training venues.	Measured waste at venues	4 months	R 150,000	Operators	NMBM / Operators / Service Providers
Green Goal branding of recycling bins and waste minimization signage	Measured waste at venues	8 months	R 150,000	2010 LOC	NMBM Waste management

Projects / Plans	Indicator	Timeframe	Green Goal Budget	Other Budgets	Leader
Waste Co-Operatives to conduct cleaning around stadium, fan parks, training venues and/or public viewing areas.	Waste reduction	8 months	R 4,000,000	NMBM / Waste	NMBM / DEAT
Purchasing of recycle bins	Waste reduction	4 months	R 200,000	NMBM / Waste	NMBM / Waste
Community source separation project		6 months	R 100,000	NMBM / Waste R 100 000	NMBM / Waste institute
Waste Exchange	Track Number of exchanges	12 months	R 100,000	NMBM / Waste R 100 000	NMBM
Recycling in Municipal Buildings		6 months	R 20,000	NMBM / Waste R 20 000	NMBM / Waste
Waste Wise Project	Waste reduction	6 months	R.1,750,000	NMBM / Waste R 1.75 milion	NMBM / Waste
Material Recovery Facility Feasibility study		6 months	-	NMBM / Waste R443 400	NMBM / Waste
Mobile exhibition Unit	No. of schools / communities reached	12 months	-	NMBM / Waste R 1.2 milion	NMBM/Waste/Environmental Health/Environmental Management/
Anti littering and waste recycling campaign	Public Awareness study	6 months	-	R 400 000 - Waste Management	NMBM / Waste
Identify alternative sources of water for irrigation. Ground water alternative.	Reduction in potable water usage	12 months	R 150,000	Donor opportunity	NMBM / Metroplan
Installation of water saving devices in the stadia and training venues	Reduction in potable water usage	4 months	Variable	Included in 2010 infrastructure and operational budgets	NMBM / FIFA LOC / Service providers
Water Demand Management Strategy	Potable water availability	annually	N/A	Included in operating budget for NMBM Infrastructure and Engineering Budget	NMBM Infrastructure and Engineering
Water Wise Campaign	Reduction in potable water usage	12 months	TBA		NMBM Infrastructure and Engineering

Projects / Plans	Indicator	Timeframe	Green Goal Budget	Other Budgets	Leader
North end Lake Augmentation	Acceptable quality water for irrigation	10 months	TBA		NMBM / FIFA LOC / Service providers
Gelvandale Practise venue, return stormwater system.	Reduced potable water requirement for irrigation	4 months	R 200,000		NMBM Economic Development and Recreational services
Plant structures for growing indigenous plant material	Number of tunnels	12 months	-	R 250,000	NMBM / Operators / Service Providers
Purchasing / growing of indigenous plant material	Number indigenous Plants	24 months	-	R 1,500,000	NMBM / Service provider
Greening Fan Parks with indigenous plant material soil and irrigation	Number indigenous Plants	24 months	-	R 1,000,000	NMBM / Service provider
Greening City - Planting Indigenous trees & ground covers for traffic routes BRT	Number indigenous Plants	24 months	-	R 800,000	NMBM / Service provider
Greening City - Planting Indigenous trees along major traffic routes	Number indigenous Plants	24 months	-	R 1,450,000	NMBM / Service provider
Working with local crafters on quality assurance of products in an effort to get them at export quality level	Business appraisal	6 months	-	Tourism R 50 000	NMBM / Tourisim
Conducted Sustainable Tourism Workshops with 40 Tourism SMME's	Business appraisal	6 months	- 0	Tourism R 100 000	NMBM / Tourisim
Host City Transport Operational Plan (HCTOP)	Effective movement of people	8 months	-	Public Transport Infrastructure Systems (PTIS) Fund R 6.6 mil - National DOT	NMBM /Khuthele / SSI / Izizwe
Implementation of HCTOP	Effective movement of people	10 months	-	R 105 mil - National DOT PTIS Fund	NMBM /Khuthele / SSI / Izizwe
Purchase of new buses (Euro III)	Reduced carbon emissions	6 months	-	R100 mil - National DOT PTIS Fund	NMBM / Operators / Service Providers
Bus Rapid Transport Project	Reduced public vehicle use	10 months	-	National DOT PTIS Fund	NMBM / BKS

Projects / Plans	Indicator	Timeframe	Green Goal Budget	Other Budgets	Leader
Non Motorised Transport: Cycle tracks and walkways	Reduce vehicle use	12 months	-	National DOT PTIS Fund	NMBM / SSI
Tourism Master Plan	Visitor Feedback	End Dec	-	R 750 000 (EDRS & Tourism)	NMBM: EDRS / Nelson Mandela Bay Tourism / Kyle Business Solutions
Code of responsible conduct for visitors			-	R 50 000 (Lotto funding through NMB Tourism)	NMBM / Service Provider
Responsible tourism awareness and training		4 months	-	R 225 000 - Tourism	NMBM / Service Provider
Environmental accreditation system for accommodation sector : Green Stay SA	Number of Hospitality business registered	annually	-	R 10 000 - EDRS & Tourism	NMBM / Service Provider
Conducted “Culture and Heritage Guide” training to Tourism Ambassadors, Tourist Guides and Museum Staff Members (30 in total)	Feedback from visitors	4 months	-	R 80 000 - EDRS & Tourism	NMBM
On-going programme with Taverners who host “Cultural Evenings” for Foreigners on Tavern Tours. Taverners trained on SA Host prog.	Feedback from visitors	4 months	-	R 30 000 - EDRS & Tourism	NMBM
NMBM Tourist 'Green Map'	Visitor Feedback	4 months	-	R 50 000 - Tourism budget	NMBM
Conducted “Culture and Heritage Guide” training to Tourism Ambassadors, Tourist Guides and Museum Staff Members (30 in total)	Feedback from visitors	4 months	-	Tourism R 80 000	NMBM
On-going programme with Taverners who host “Cultural Evenings” for Foreigners on Tavern Tours. Taverners trained on SA Host prog.	Feedback from visitors	4 months	-	Tourism R 30 000	NMBM

Projects / Plans	Indicator	Timeframe	Green Goal Budget	Other Budgets	Leader
NMBM Tourist 'Green Maps	Visitor Feedback	4 months	R 50 000	Potential donor / corporate sponsorship opportunity	NMBM
Annual Report and Legacy Report	Lessons Learnt	6 months	R 400 000	Potential private sector / donor sponsorship opportunity	NMBM / Service provider

1. Introduction

1.1. Greening of the 2010 FIFA World Cup

In June and July 2010, South Africa will be hosting the most prestigious football tournament in the world, the 2010 FIFA World Cup. It will be the first tournament to be hosted by an African nation. The 2010 FIFA World Cup will be staged at 10 venues across nine South African cities: Johannesburg, Cape Town, Durban, Port Elizabeth, Nelspruit, Polokwane, Bloemfontein, Rustenburg and Pretoria.

The upcoming event has triggered many kinds of infrastructural developments in the host cities, from minor road upgrades to mega construction projects of five new stadia for as many host cities. Substantial positive spin offs in terms of job creation have been experienced already. Further benefits will be felt in years to come as most infrastructure improvements will have an amenity value that goes far beyond the 2010 World Cup.

Beside the obvious monetary dimension, the construction projects also have a cost in terms of negative impacts on the natural environment. Coupled with such impacts, thousands of spectators will be attending the event thus leading to a need for provision of accommodation, transport and general hospitality to all the fans. This equates to increased water and energy demands, generation of waste and emission of greenhouse gases.

The 2010 Soccer World Cup presents an opportunity to raise environmental awareness and to reinforce the significance of environmentally responsible lifestyles. By mitigating the environmental impacts of the event through a greening programme environmental sustainability for South Africa and its citizens can be enhanced. The concept of ‘greening’ an event involves the incorporation of sustainability principles in all event-related activities, before, during and after the matches. This calls for a balanced approach to economic development, for environmental responsibility and for social progress by focusing on considerations for waste minimisation; sustainable procurement; water and energy conservation; caring for our biodiversity and reducing green house gases.

The South African Organising Committee has recognised the need to include sustainability principles in the hosting of the 2010 event and has to this end committed itself and the host cities through the Host City Agreement to apply these principles in staging the 2010 event. In this regard, the 2010 FIFA World Cup will be used to raise awareness and to lay a foundation for greening future events in South Africa. Lessons learnt from the previous world cup (Germany 2006) and other events, such as the Olympic Games, will be combined to deliver a 2010 event with minimum ecological footprint.

1.2. International best practice

The ‘greening’ of large sporting events has become a well entrenched practice in the last 20 years. In 1991 the International Olympic Committee amended the Olympic charter to include a policy that requires each candidate for hosting future Olympic games to include an environmental plan as part of its bid (Anonymous 1996).

Lillehammer in Norway, home of the 1994 Winter Olympic Games staged the first 'Green Games’ although on a voluntary basis. The Sydney 2000 Olympics was the first to include a formal event greening programme. From these beginnings significant strides have been made at every one of the games to integrate the activities of the Olympic movement with the wellbeing of the world in which we live. In the recent past the 2008 Beijing Olympic Games served as a catalyst for accelerating environmental improvements across the city. For instance, the Chinese authorities have relocated and refitted major polluting industries and there has been a switch away from coal-fired energy generation towards less polluting fuels like natural gas. Older buses, taxis and cars have been scrapped in favour of ones that meet tougher, internationally recognized emissions standards such as the Euro III standard.

The organisers of the previous World Cup in Germany in 2006 aimed from the start to reduce the environmental impact of the international sports tournament (Öko-Institut 2003). Water conservation, garbage recycling and reduction of contaminating emissions into the atmosphere through wider use of public transport and clean energy sources were some of the aims of the Green Goal, implemented by FIFA, the United Nations Environment Programme (UNEP) and the German government. The organisers set quantitative targets for the savings they aimed to achieve in the spheres of water, waste, energy and mobility, for instance, that the quantity of waste will be reduced by 20% compared to current levels. Significantly, the ‘Legacy Report’ published six months after the event claimed that 13 of a total of 16 ambitious Green Goals had been achieved (Organisationskomitee FIFA Fussball-Weltmeisterschaft 2006):

- Climate neutrality – the 92 000 tons of green house gases emitted by the 2006 World Cup were compensated for by climate protection projects in India and in South Africa and financed by Germany.
- Potable water consumption was reduced by nearly 20% compared to previous events.
- Solid waste generated in and around the stadia was reduced by 20% compared to previous events.
- Although the goal of a 20% reduction in energy consumption of the stadia was not fully reached, 13 million kWh of electricity generated from certified ‘green’ (solar, wind energy) sources was fed into the distribution network, more than the total amount of electricity consumed by the entire 2006 World Cup.

- Bus, railway, bicycle and pedestrian travel accounted for 74% of all trips to and from the stadium, thus far exceeding the goal of 50% of all trips by means of public transport.

South Africa has been inspired by these impressive achievements when holding the first Football Word Cup in Africa in 2010.

2. Greening approach in the NMBM

2.1. Host city NMBM

The Nelson Mandela Bay Municipality (NMBM) is one of the nine host cities for the FIFA 2010 World Cup to be held in South Africa from 11 June to 11 July 2010. The matches in the NMBM will be played in the new stadium built on the grounds of the former Prince Alfred Park in North End. The Gelvandale Stadium and the Nelson Mandela Metropolitan University Stadium will serve as practice venues for each of the opposing teams in a match. The Fan Park will be located at the St Georges Park Stadium, and four Public Viewing Areas (PVA) equipped with large broadcasting screens will cater for fans who do not have a stadium ticket.

2.2. Green Goal target (thematic) areas

The Nelson Mandela Bay Municipality is fully committed to the greening of the 2010 FIFA World Cup event footprints and leaving a positive and lasting environmental legacy. Nine Green Goal target areas with the following objectives have been identified:

A. Energy efficiency – Promote energy saving technologies and renewable energy sources.
B. Climate change - Minimise the carbon footprint of the 2010 event.
C. Waste management - Avoid, reduce, reuse and recycle waste.
D. Water conservation - Minimise the use of potable water and promote conservation of water resources.
E. Biodiversity promotion - Promote indigenous landscaping and enhance biodiversity.
F. Transport efficiency - Promote energy efficient and universally accessible means of transport that also minimise air pollution.
G. Responsible tourism - Prioritize eco-tourism; encourage local economic development and social justice.
H. Awareness raising - Creatively and visibly communicate the need for conserving the environment for tomorrow.
I. Monitoring and measuring - Monitor, measure and report on progress with the implementation of Green Goal.

2.3. Project structure

Green Goal targets, e.g. the promotion of energy efficiency, are pursued by NMBM through a variety of projects. The projects are structured in a similar way:

- Each project has a defined budget and time frame
- Each project has a leader/champion and team members
- Each project has milestones that lead to the Green Goal
- Project progress is measured through an appropriate indicator.

The project specific time frames are contained in a program attached as annexure A.

The following section introduces the projects, grouped into greening thematic areas.

2.4. A Energy efficiency

2.4.1 Introduction

Efficient energy use strives to get more out of energy. Primarily it is achieved through the application of more efficient technology. Energy is consumed in ways that affect the climate by participants' journeys to and from events, mobility services at the conference venue, the heating, cooling and lighting of conference buildings and hotels, and the use of conference technology (Baller et al. 2008). Mindful of the energy aspects of large sporting events, FIFA has therefore called on the minimisation of energy consumption during the organisation and implementation of events. Due consideration should be given in new purchases and as far as possible in the use of existing appliances and fittings to achieve a reduction in energy consumption.

2.4.2. Impacts

In the context of modern society that derives much of its energy needs from the burning of fossil fuels that produces carbon dioxide, energy efficiency and renewable energy are the foundations of a sustainable energy policy, as they help controlling global emissions of greenhouse gases.

2.4.3. Goals

The Green Goal guideline for the 2010 World Cup is to install energy efficient technology in all areas wherever this is possible and economically justifiable. The energy required for the holding of the event should be generated preferably from renewable energy sources.

2.4.4. Actions

Awareness of and adherence to energy efficiency should be promoted in planning for and hosting the event in order to reduce energy consumption and change the way people use energy. Energy saving technologies, management systems and behaviour change should be adopted in all aspects of planning, operation, management, maintenance and decommissioning of the event's infrastructure. The use of renewable energy should be promoted wherever possible. Specific to the 2010 World Cup, the following key projects have been identified:

1. Installation of efficient street lighting.
2. Replacement of electrical geysers with solar water heaters
3. Replacement of traffic signal heads to LED heads
4. Supply of luminary replacements to 75000 households belonging to previously disadvantaged communities.

2.4.5. Projects in detail

(Refer to annexure A for detailed programme / time line)

2.4.6. Installation of energy efficient street lighting.

Description:

The replacement and new installation of energy efficient luminaries in all existing and new street lights prior to the 2010 World Cup.

Promote:

Reduction in energy consumption and subsequent reduction in medium and long term savings on energy costs and CO_2 emissions

PROJECT DETAILS		
Objective	Carbon offset through reduction in energy usage	
Project leader	NMBM Electricity and Energy : Peter Nielson	
Team members	NMBM: Electricity and Energy / Environmental Affairs.	
Targets	Reduction of 15 000 tons CO_2 per annum from current emissions through energy usage.	
Indicators	Measurable reduction in energy consumption as measured at source.	
Key milestones	Tender Appoint service provider Commence installation	Dates: November 2009 December 2009 February 2010
Legacy project	Yes	
Green Goal budget	-	
Other budgets	Dora funding: R 35 million	

2.4.7. A2. Voluntary replacement of standard electrical water geysers with the solar equivalent.

Description:

The implementation of a voluntary geyser replacement program. Financial assistance / incentive is given to the public to replace current household electrical geysers with the equivalent solar water system.

Promote:

The reduction in energy consumption and subsequent reduction in medium and long term savings on energy costs and CO_2 emissions.

PROJECT DETAILS		
Objective	Carbon offset through reduction in energy usage.	
Project leader	NMBM Electricity and Energy : Peter Nielson.	
Team members	NMBM: Electricity and Energy / Environmental Affairs.	
Targets	Reduction of 2.2 tons CO_2 per annum per geyser from current emissions through energy usage.	
Indicators	Measurable reduction in energy consumption, as measured at source.	
Key milestones	Tender Appoint service provider / Supplier Commence installation	Dates: July 2009 December 2009 February 2010
Legacy project	Yes	
Green Goal budget	-	
Other budgets	Dora funding: R 1.2 billion.	

2.4.8. A3. Replacement of traffic signal heads.

Description:

The replacement of all existing traffic light heads with energy efficient light emitting diodes (LED).

Promote:

The reduction in energy consumption and subsequent reduction in Medium and long term savings on energy costs and CO^2 emissions.

PROJECT DETAILS		
Objective	Carbon offset through reduction in energy usage.	
Project leader	NMBM Electricity and Energy : Peter Nielson.	
Team members	NMBM: Electricity and Energy / Environmental Affairs.	
Targets	Reduction of 684 tons CO_2 per annum from current emissions through energy usage.	
Indicators	Measurable reduction in energy consumption, as measured at source.	
Key milestones	Tender Appoint service provider / Supplier Complete installation	Dates: June 2009 September 2009 June 2010
Legacy project	Yes	
Green Goal budget	-	
Other budgets	Dora funding / Legacy funding.	

2.4.9. A4. Supply energy efficient luminaries to underprivileged house holds.

Description:

The roll out programme to replacing household luminaries in poorer communities with energy efficient luminaries. The roll out is to include 75 000 households through the greater metropolitan area of Port Elizabeth.

Promote:

The reduction in energy consumption and subsequent reduction in Medium and long term savings on energy costs and CO2 emissions.

Evaluation

The State's virtual monopoly on the large-scale generation of electrical energy, through its subsidiary ESKOM, severely limits the host cities' options for the use of renewable energy. NMBM has responded to this constraint by identifying projects targeting the energy aspects of this Green Goal.

PROJECT DETAILS		
Objective	Carbon offset through reduction in energy usage.	
Project leader	NMBM Electricity and Energy : Peter Nielson.	
Team members	NMBM: Electricity and Energy / Environmental Affairs.	
Targets	Reduction of 13 000 tons CO_2 per annum , from current emissions through energy usage.	
Indicators	Measurable reduction in energy consumption, as measured at source.	
Key milestones	Tender Appoint service provider / Supplier Complete instillation	Dates: November 2009 February 2010 March 2010
Legacy project	Yes	
Green Goal budget	-	
Other budgets	Dora funding / Legacy funding.- R 14 million.	

2.5. B. Climate change

2.5.1. Introduction

Carbon dioxide (CO_2), the principal greenhouse gas, is released to the atmosphere by the burning of fossil fuels such as oil and coal. This is exacerbated by deforestation and the conversion of natural vegetation to agriculture, which results in reduced uptake of carbon dioxide by plant matter. Factors behind the increased release of carbon dioxide to the atmosphere are industrialisation, inefficient use of energy, inefficient methods of production and excessive global consumption of fossil fuels. Acutely aware of this major global threat, FIFA has called on South Africa as the host country of the 2010 World Cup to attempt to make it a neutral event in terms of green house gas emissions.

2.5.2. Impacts

Global climate change is now recognised as one of humankind's most profound and far-reaching threats to biodiversity. Global climate warming, now conclusively linked to anthropogenically-increased CO_2 levels in the earth's atmosphere, has already had impacts on the earth's biodiversity and is predicted to threaten more than 1 million species with extinction by 2050. An important mechanism by which this occurs is through boundary shifts of ecosystems. By way of a South African example, increasing temperatures and sharply decreasing rainfall are expected to move the winter-rainfall dominated Succulent Karoo biome southwards by about 2050, and diminish its size, putting severe selective pressures on plant species in this biome. The Fynbos biome is similarly expected to shift southwards, with the result that parts of it are 'pushed' off the southern end of the continent (Simmons et al. 2004).

2.5.3. Goals

The FIFA Green Goal for the 2010 World Cup is to make it a climate-neutral event that does not contribute further to global warming.

2.5.4. Actions

The idea of the climate-neutral event has become increasingly important over the past few years within the context of the national and international measures being taken to protect the climate. The principle of climate neutrality involves calculating the greenhouse gas emissions associated with an event as a result of participants' travel and accommodation arrangements and either purchasing emission certificates for this quantity of emissions, which are then cancelled out, or by investing an equivalent amount of money in a greenhouse gas-saving projects.

Specific to the 2010 World Cup, and beyond, the following key projects have been identified:

1. Establishment of a Climate Change Unit within the NMBM.
2. Determining the carbon footprint of the Host City
3. Construction of a pilot 25 MW wind farm in the municipality that could produce 67.5 Giga Watt hours per annum of renewable energy
4. Launch of a pre-feasibility study to convert solid waste stored in landfill to useful energy by means of pyrolysis. (the chemical decomposition of condensed organic substances by heating).

2.5.5. Projects in detail

(Refer to annexure A for detailed programme / time line)

2.5.6. B1. Establishment of a climate change unit within the NMBM.

Description:

The establishment of a unit within the NMBM structure to facilitate and manage all aspects relating to climate change. The unit should regulate and mediate between all directorates to ensure an actionable response to climate change.

Promote:

The effective institutionalisation of climate change into all future activities.

PROJECT DETAILS		
Objective	Effectively institutionalise climate change into future activities.	
Project leader	NMBM Public Health : Joram Mkosana.	
Team members	NMBM: Public Health / Electricity and Energy / Environmental Affairs.	
Targets	Mitigation and adaptation of activities impacting on climate change.	
Indicators	Policy shift.	
Key milestones	Appoint Project Manager Appoint Staff Initiate Unit	Dates: December 2009 February 2010 March 2010
Legacy project	Yes	
Green Goal budget	-	
Other budgets	NMBM – R 1 million per annum	

2.5.7. B2. Determination of the carbon footprint for the host city of Nelson Mandela Bay Municipality.

Description:

Estimate the carbon footprint of hosting the event in Port Elizabeth, covering the sectors of transport, accommodation, stadia and other 2010 operations. This would include the monitoring of actual carbon footprint during the event and reporting during and after the event.

Promote:

Promote accountability.

PROJECT DETAILS		
Objective	Effectively estimate and determine the carbon footprint of the event.	
Project leader	NMBM Public Health : J. Mkosana.	
Team members	NMBM: Public Health / Service Provider.	
Targets	Determine the carbon footprint	
Indicators	Carbon calculation at the finalisation of the event.	
Key milestones	Appoint service provider Estimate carbon footprint Measure carbon Prepare final report	Dates: September 2009 December 2009 May 2010 November 2010
Legacy project	Yes	
Green Goal budget	-	
Other budgets	NMBM – R 200 000	

2.5.8. B3. Construction of wind farms within the NMBM.

Description:

The establishment wind farms on three sites within the NMBM. The total of which will produce 25 Mega Watt Hours of energy which equates to 67.2 Giga Watt hours per annum. Equating to a reduction in CO^2 emissions of 70 000 tons per annum.

Promote:

The effective use of renewable energy sources as opposed to conventional systems.

PROJECT DETAILS		
Objective	Construct a renewable energy production wind farm to produce renewable “Green Energy”.	
Project leader	NMBM Electricity and Energy : Peter Nielson..	
Team members	NMBM Electricity and Energy : Peter Nielson. Service provider.	
Targets	67.2 Giga Watt hours of energy per annum. Reduction of 70 000 tons CO_2 per annum.	
Indicators	Measurable energy production.	
Key milestones	Tender Approved Record of Decision Appoint service provider Commence Construction	Dates: September 2009 January 2010 February 2010 March 2010
Legacy project	Yes	
Green Goal budget	-	
Other budgets	Dora Funded / Legacy : R0.5 billion	

2.5.9. B4. Feasibility study for solid waste to energy through pyrolysis.

Description:

Prepare a feasibility study on the establishment of a pyrolysis plant to produce energy from solid waste with the release of recyclable materials from the process.

Promote:

The reduction of solid waste to landfill with the benefit of energy production through the process.

Evaluation

The projects pursued by NMBM clearly demonstrate that the municipality is effectively institutionalising climate change into future activities.

PROJECT DETAILS		
Objective	Determine the feasibility of establishing a pyrolysis plant.	
Project Leader	NMBM Electricity and Energy : Peter Nielson..	
Team Members	NMBM Electricity and Energy : Peter Nielson. Service provider.	
Targets	Feasibility study with recommendations.	
Indicators	Feasibility report	
Key Milestones	Investigation Report Recommendation	Dates: September 2009 March 2010 May 2010
Legacy project	Yes	
Green Goal Budget	-	
Other Budgets	NMBM – R 50 000	

2.6. C. Waste management

2.6.1. Introduction

FIFA is recognizing that the 2010 World Cup presents an excellent opportunity to promote awareness and to change behaviour around all aspects of waste management. In the past, large sporting events were invariably associated with mountains of solid waste (bottles, cups, paper etc.) that needed to be dealt with. The events also generated large sewage streams, although not readily visible to the spectators. Managing this solid and liquid waste effectively and without lasting negative effects on society and the environment is not a trivial task. Since the costs of managing waste are high it is a worthwhile area of action for the environmentally sound organisation of events.

2.6.2. Impacts

The disposal of waste may cause very substantial environmental impacts. Much of the solid waste is buried in landfill sites. Some waste will eventually rot, but not all, and in the process it may smell or generate methane gas, which is explosive and as a greenhouse gas has a negative effect on global climate. Leachate produced as waste decomposes may cause pollution of groundwater. Badly-managed landfill sites may attract vermin or cause litter.

Incinerating waste also causes problems, because plastics tend to produce toxic substances, such as dioxins, when they are burnt. Gases from incineration may cause air pollution and contribute to acid rain, while the ash from incinerators may contain heavy metals and other toxins.

2.6.3. Goals

The Green Goal guideline for the 2010 World Cup is that waste has to be avoided as much as possible. Throwing away things wastes resources. It wastes the raw materials and energy used in making the items and it wastes money. Reducing waste means less environmental impact, less resources and energy used and saves money. Unavoidable waste will be recycled, and specialist firms must dispose of waste that cannot be recycled.

2.6.4. Actions

While it is unavoidable that human activity produces some waste in all its forms (solid, liquid, gaseous), a key approach to sustainable waste management in NMBM for the 2010 World Cup is waste avoidance and waste minimisation at source. This will ensure that the additional pressure of the 2010 World Cup on the existing waste management infrastructure of NMBM is minimised. A further aspect is minimizing the environmental and health impacts by reducing toxicity, and ensuring environmentally sound treatment and disposal of remaining waste.

Specific to the 2010 World Cup, the following key projects have been identified:

1. Waste management and operational plans for stadium, fan parks, public viewing areas (PVA) and training venues.
2. Green Goal branding of recycling bins and waste minimization signage
3. Waste Co-Operatives to conduct cleaning around stadium, fan parks, training venues and/or public viewing areas.
4. Purchasing of recycle bins
5. Community source separation project.
6. Waste Exchange.
7. Recycling in municipal buildings.
8. Waste Wise Project.
9. Material Recovery feasibility study.
10. Mobile exhibition unit
11. Anti littering and waste recycling campaign.

2.6.5. Projects in detail

(Refer to annexure A for detailed programme / time line)

2.6.6. C1. Waste management and operational plans for stadium, Fan Park, PVAs and training venues.

Description:

Develop approaches, standards and practices to keep operational waste at the stadium, Fan Park, PVA's and training venues to a minimum.

Promote:

The reduction of solid waste to landfill through waste reduction, recycling and minimisation.

PROJECT DETAILS		
Objective	Minimise the amount of waste sent to landfill.	
Project leader	NMBM Waste / Riaan le Roux	
Team members	NMBM Waste / Operators / Service Providers .	
Targets	Reduction of 30% of waste to landfill.	
Indicators	Measurable waste mass at venues and landfills	
Key milestones	Operational plan Plan Approval Plan Implementation	Dates: December 2009 March 2010 May 2010
Legacy project	Yes	
Green Goal budget	Included in 2010 operational budgets.	
Other budgets		

2.6.7. C2. Green Goal branding of recycling bins and waste minimisation signage.

Description:

The branding of recycling bins with the green goal branding to reinforce the awareness campaign, followed by additional waste minimisation signage to ensure a collective understanding of both minimisation and recycling.

Promote:

The reduction of solid waste to landfill through waste reduction, recycling and minimisation.

PROJECT DETAILS		
Objective	Minimise the amount of waste sent to landfill.	
Project leader	NMBM Waste / Riaan le Roux	
Team members	NMBM Waste / Operators / Service Providers .	
Targets	Reduction of 30% of waste to landfill.	
Indicators	Measurable waste mass at venues and landfills	
Key milestones	Development of signage / branding	Dates: December 2009
	Placement of signage	March 2010
	Branding of bins	March 2010
Legacy project	Yes	
Green Goal budget	Included in 2010 operational budgets.	
Other budgets		

2.6.8. C3. Waste Co-Operatives to conduct cleaning around stadium, Fan Parks, training venues and/or public viewing areas.

Description:

The establishment of community waste co-operatives to conduct waste separation and cleaning at all the venues. This will include training on waste separation and recycling. Organising and establishing the community structures.

Promote:

The reduction of solid waste to landfill through waste reduction, recycling and minimisation. To ensure an efficient and functional waste collection.

PROJECT DETAILS		
Objective	Minimise the amount of waste sent to landfill.	
Project leader	NMBM Waste / Riaan le Roux	
Team members	NMBM Waste / Operators.	
Targets	Reduction of 30% of waste to landfill.	
Indicators	Measurable waste mass at venues and landfills.	
Key milestones	Tender Appointment Commencement	Dates: December 2009 March 2010 May 2010
Legacy project	Yes	
Green Goal budget	R 4 million	
Other budgets		

2.6.9. C4. Purchasing of additional recycling bins.

Description:

The purchase of an additional 400, 240ℓ bins to be placed in key visitor areas as well as around venues.

Promote:

The reduction of solid waste to landfill through waste reduction, recycling and minimisation. To ensure an efficient and functional waste collection.

PROJECT DETAILS		
Objective	Minimise the amount of waste sent to landfill.	
Project Leader	NMBM Waste / Riaan Le Roux	
Team Members	NMBM Waste / Supplier	
Targets	Reduction of 30% of waste to landfill.	
Indicators	Measurable waste mass at venues and landfills.	
Key Milestones	Purchase bins Deploy bins	Dates: December 2009 March 2010
Legacy project	Yes	
Green Goal Budget	R 200 000	
Other Budgets		

2.6.10. C5. Community source separation project.

Description:

Pilot project for community source separation of waste in Blue Horizon Bay. To be expanded into other communities once best practise have been established.

Promote:

The reduction of solid waste to landfill through waste reduction, recycling and minimisation.

PROJECT DETAILS		
Objective	Minimise the amount of waste sent to landfill.	
Project leader	NMBM Waste / Riaan le Roux	
Team members	NMBM Waste / Community	
Targets	Reduction of 30% of waste to landfill.	
Indicators	Measurable waste mass at venues and landfills.	
Key milestones	Purchase bins Deploy bins	Dates: December 2009 March 2010
Legacy project	Yes	
Green Goal budget	R 200 000	
Other budgets		

2.6.11. C6. Waste Exchange.

Description:

The establishment of a waste exchange services. Potential recyclable waste is posted on the NMBM waste exchange website where potential waste producers can make contact and exchange their waste.

Promote:

Reduction of solid waste to landfill by waste recycling.

PROJECT DETAILS		
Objective	Minimise the amount of waste sent to landfill.	
Project leader	NMBM Waste / Riaan le Roux	
Team members	NMBM Waste / Community	
Targets	Reduction of 30% of waste to landfill.	
Indicators	Measurable waste transactions per month.	
Key milestones	Develop website Initiate exchange Monitor exchange	Dates: June 2009 September 2010 February 2010
Legacy project	Yes	
Green Goal budget	R 100 000	
Other budgets		

2.6.12. C7. Recycling in municipal buildings.

Description:

The establishment of a waste recycling stations and areas of source separation in municipal buildings.

Promote:

Reduction of solid waste to landfill by waste, recycling.

PROJECT DETAILS		
Objective	Minimise the amount of waste sent to landfill.	
Project leader	NMBM Waste / Riaan le Roux	
Team members	NMBM Waste / Community	
Targets	Reduction of 30% of waste to landfill.	
Indicators	Measurable waste recyclables from municipal offices	
Key milestones	Plan development Initiate	Dates: September 2009 February 2010
Legacy project	Yes	
Green Goal budget	R 20 000	
Other budgets		

2.6.13. C8. Waste wise project.

Description:

Wide-scale awareness campaign on the benefits of waste minimisation and recycling. The campaign also focuses on educating the public on types of waste and waste separation.

Promote:

Reduction of solid waste to landfill by waste, recycling and minimisation.

PROJECT DETAILS		
Objective	Minimise the amount of waste sent to landfill.	
Project Leader	NMBM Waste / Riaan le Roux	
Team Members	NMBM Waste / Service provider	
Targets	Reduction of 30% of waste to landfill.	
Indicators	Measurable waste recyclables from municipal offices	
Key Milestones	Campaign Plan Campaign roll out.	Dates: September 2009r February 2010
Legacy project	Yes	
Green Goal Budget	-	
Other Budgets	NMBM Waste R 1.75 million.	

2.6.14. C9. Material recovery feasibility study.

Description:

Wide scale awareness campaign, on the benefits of waste minimisation and recycling. The campaign also focus on educating public on types of waste and waste separation.

Promote:

Reduction of solid waste to landfill by waste, recycling and minimisation.

PROJECT DETAILS		
Objective	Minimise the amount of waste sent to landfill.	
Project leader	NMBM Waste / Riaan le Roux	
Team members	NMBM Waste / Service provider	
Targets	Reduction of 30% of waste to landfill.	
Indicators	Measurable waste recyclables from municipal offices	
Key milestones	Campaign Plan Campaign roll out.	Dates: September 2009r February 2010
Legacy project	Yes	
Green Goal budget	-	
Other budgets	NMBM Waste R 443 000.	

2.6.15. C10. Mobile exhibition unit.

Description:

The construction of a mobile exhibition unit / bus. The vehicle will be branded with waste wise awareness logos and contain media and equipment to serve as a mobile classroom. The focus of the unit is to educate the broader public on the principles of waste management including minimisation, recycling and avoidance.

Promote:

Reduction of solid waste to landfill by waste, recycling and minimisation.

PROJECT DETAILS		
Objective	Education and awareness of the principles of waste minimisation, recycling and avoidance.	
Project leader	NMBM Waste / Riaan Le Roux	
Team members	NMBM Waste / Service provider	
Targets	Reduction of 30% of waste to landfill.	
Indicators	Measurable waste recyclables from municipal offices	
Key milestones	Tender for unit Supply and delivery of unit. Road show	Dates: June 2009r August 2010 March 2010
Legacy project	Yes	
Green Goal budget	-	
Other budgets	NMBM Waste R 1.2 million.	

2.6.16.C11. Anti littering and waste recycling campaign.

Description:

The role out of a media campaign to create awareness surrounding anti-littering and the concept of recycling and the process involved. The concept of recycling cannot be effective if the members of the public do understand the process involved.

Promote:

Reduction of solid waste to landfill by waste, recycling and minimisation.

Evaluation

NMBM has responded to the challenges arising from the 2010 World Cup by committing to managing solid and liquid waste effectively and without lasting negative effects on society and the environment.

PROJECT DETAILS		
Objective	Education and awareness of the principles of waste minimisation, recycling and avoidance.	
Project Leader	NMBM Waste / Riaan le Roux	
Team Members	NMBM Waste / Service provider	
Targets	Reduction of 30% of waste to landfill.	
Indicators	Measurable waste recyclables from municipal offices	
Key Milestones	Public awareness study	Dates: January 2010
Legacy project	Yes	
Green Goal Budget	-	
Other Budgets	NMBM Waste R 400 000.	

2.7. D Water conservation

2.7.1. Introduction

South Africa's tap water is of the highest quality, albeit a scarce commodity. There are two reasons for this. Firstly, South Africa is classified as a semi-arid country where water is naturally scarce. Secondly, its water supply is under serious threat by a combination of polluted water sources and poor management of dams, sewerage works and treatment plants (Turton 2008). The situation is exacerbated by a growing population whose water consumption per capita is rising as social upliftment programmes set in. Providing sufficient water for the 2010 World Cup without compromising long-term sustainability targets is therefore an important task for the event organisers.

2.7.2 Impacts

The influx of people to the host city creates an extra demand on the water supply. In the absence of significant sources of rainwater or recycled water, precious drinking water must be used for non-potable consumption purposes: washing, cleaning, rinsing, watering and process water. Conceivably, the extra demand causes a drawdown on the biological reserve of streams, rivers and dams that is set aside to safeguard natural watercourse functioning, and there is an added need to make up extra supplies in water purification plants, which in turn consumes extra energy and resources.

2.7.3. Goals

The Green Goal is the careful use of precious potable water and the recycling of water. NMBM guarantees the provision of safe tap water.

2.7.4. Actions

In respect of water conservation, impact mitigation measures may comprise the following:

- Identification and development of cost effective water conservation and demand management options,
- Promotion of the efficient use of water through general and site-specific conservation programmes and other water efficiency measures,
- Promotion of the recycling of water,
- Implementation of water tariffs that promote social equity and promote the efficient use of water,
- Prohibition of the wasteful use of water.

NMBM's response to the water issue is two-fold: through a) existing water conservation and demand management programmes that aid the holding of large sporting events, and b) project initiatives specific to the 2010 Soccer World Cup.

Existing programmes

NMBM's pronounced reliance (≈60%) on runoff stored in dams for its water supply has resulted in a comprehensive water conservation and demand management programme. The programme is based on five key management plans:

1. Water Master Plan
2. Sewer Master Plan
3. Water Management Systems
4. Sewer Management Systems
5. Water Services Development Plan.

The key management plans are informed by the Water Reconciliation Strategy for the Algoa Water Supply Area, which is expected to be finalised during the first quarter of 2010. Simultaneously the Water Master Plan for NMBM is currently being updated by Afri-Coast Engineers.

Leakage detection and repair, stepped tariffs and water restrictions are just some of the instruments used by NMBM to secure water supply and to regulate consumption. Changing the mindsets and behaviour of both water users and managers is a fundamental component of the management plans. Hence, a strong awareness and education drive has been put in place under the banner of the Go Green Campaign. The community awareness campaign not only addresses specific measures, such as the equitable management of temporary water shortage during a draught, but also social aspects of establishing or enhancing a water conservation ethic among water customers.

2010 World Cup specific projects

Specific to the 2010 Soccer World Cup, NMBM has embarked on addressing water-related environmental impacts by launching the following key projects:

1. Identification of alternative sources of water for irrigation
2. Installation of water saving devices in the stadium and training venues.
3. Water Wise campaign.
4. North End Lake augmentation.
5. Gelvandale return storm water system.

2.7.5. Projects in detail

(Refer to annexure A for detailed programme / time line)

2.7.8. D1. Identifying alternative sources of water for irrigation.

Description:

Rainwater collection from the roofs of the stadia will be investigated. The treated effluent return schemes and the use of nearby surface water bodies will also be investigated, avoiding the use of tap water for the watering of 2010 World Cup venues.

The city has a small-scale treated effluent return scheme in place for many years which supplies the Nelson Mandela Metropolitan University grounds with irrigation water. A much larger scheme, utilising the output from the same waste water treatment works at Cape Recife, has been designed, but the capital for the construction has not been raised.

Promote:

The conservation and management of potable water resources.

PROJECT DETAILS		
Objective	Identify alternative sources of water for irrigation.	
Project leader	NMBM Water / Barry Martin	
Team members	NMBM Water / Service provider	
Targets	Reduction of in the use of potable water.	
Indicators	Measurable amount of return effluent utilised.	
Key milestones	Appoint service provider. Commence study Report and recommendations.	Dates: January 2010 February 2010 – June 2010 December 2010
Legacy project	Yes	
Green Goal budget	-	
Other budgets	NMBM Water R 150 000.	

2.7.9. D2. Installation of water saving devices in the stadium and training venues.

Description:

The installation of dual flush toilets, presence detection urinals, automated taps and various other water saving technologies will be investigated and installed in the stadium and training venues.

Promote:

The conservation and management of potable water resources.

PROJECT DETAILS		
Objective	Reduce the potable water consumption.	
Project leader	NMBM 2010 LOC	
Team members	NMBM 2010 LOC / Service provider	
Targets	Reduction of in the use of potable water.	
Indicators	Measurable saving on the amount of potable water utilised.	
Key milestones	Installed and operational.	Dates: March 2010
Legacy project	Yes	
Green Goal budget	Included in stadium and training venue budgets.	
Other budgets	-	

2.7.10. D3. Water Wise Campaign.

Description:

Wide scale awareness campaign on potable water management at a domestic level. The campaign is targeted at a public use level. The roll out is to utilise existing NMBM media sources to inform the public as well as road shows.

Promote:

The conservation and management of potable water resources.

PROJECT DETAILS		
Objective	Reduce the potable water consumption.	
Project leader	NMBM Water / Barry Martin	
Team members	NMBM Water / Service provider	
Targets	Reduction of in the use of potable water.	
Indicators	Measurable saving on the amount of potable water utilised.	
Key milestones	Documentation preparation. Campaign Roll-out.	Dates: June 2009. September 2009
Legacy project	Yes	
Green Goal budget	-	
Other budgets	NMBM Water budget TBC-	

2.7.11. D4. North End Lake augmentation.

Description:

The project includes the investigation and proposal implementation, to utilise the water from the North End Lake for the irrigation of the pitch and landscaping in the stadium precinct. The project requires the reduction of pollutants from the lake to a level acceptable for irrigation purposes.

Promote:

The conservation and management of potable water resources.

PROJECT DETAILS		
Objective	Reduce the potable water consumption.	
Project leader	NMBM Water / Barry Martin	
Team members	NMBM Water / FIFA LOC / Service provider	
Targets	Reduction of in the use of potable water.	
Indicators	Measurable saving on the amount of potable water utilised.	
Key milestones	Appoint Service provider. Draft Report. Implement.	Dates: June 2009. September 2009 December 2009
Legacy project	Yes	
Green Goal budget	-	
Other budgets	NMBM Water budget (TBC)-	

2.7.12. D5. Gelvandale VSTS, storm water return system.

Description:

The project includes the return of storm water runoff from the pitch and athletics track, into holding tanks for re-use to irrigate the pitch. A saving 35 % of the water demand of the pitch is aimed for.

Promote:

The conservation and management of potable water resources.

PROJECT DETAILS		
Objective	Reduce the potable water consumption.	
Project leader	NMBM Sports and recreation / Michael Bloemiers	
Team members	NMBM Sports and recreation / FIFA LOC / Service provider	
Targets	35% of pitch irrigation recycled.	
Indicators	Measure the amount of water recycled.	
Key milestones	Appoint Service provider. Install system. Monitor.	Dates: February 2009. January 2010 March 2010.
Legacy project	Yes	
Green Goal budget	R 500 000.-	
Other budgets		

Evaluation

When considering the water-related challenges faced by the host city in a water-scarce environment it is evident that the NMBM has introduced comprehensive water conservation and demand management strategies in order to provide sufficient water for the 2010 World Cup without compromising long-term sustainability targets. This is achieved by:

- The review and update of management plans with special reference to the 2010 World Cup
- Introduction of stringent water restrictions coupled to a stepped water tariff
- Ongoing leak detection and repair efforts
- Community awareness and education activities under the banner of the Go Green Campaign
- Identification of alternative sources of water for irrigation
- Installation of water saving devices in the stadium and training venues.

Taken together, these efforts justify adopting a positive outlook with regards to the sustainable management of water during the 2010 World Cup and beyond.

2.8. E. Biodiversity promotion

2.8.1. Introduction

The word biodiversity is used to mean the variety of life on our planet, measurable as the variety within species, between species and the variety of ecosystems. South Africa has a very substantial share of global biodiversity within its borders, ranking third of any country in the world. The Nelson Mandela Bay Municipality, where five biomes meet, is making a meaningful contribution to this biodiversity. Our biological heritage is important to us in many ways – providing us with ecosystem services like clean water, contributing directly to the economy through industries like fishing and tourism, supporting livelihoods by providing food, medicines and building materials and generally improving our health and well-being.

FIFA is recognising that very large sporting events like the 2010 World Cup do have the potential to compromise valuable ecosystem services on a local level. Hence, biodiversity protection is included in the task list of the event organisers. Furthermore, the 2010 World Cup coincides with the UN International Year of Biodiversity. Also, South Africa (Johannesburg) was the location for the seminal World Summit for Sustainable Development in 2002, where world leaders set global biodiversity targets.

2.8.2. Impacts

Important driving forces putting pressure on the biodiversity resources include:

- The consumption of non-renewable resources (water, energy) to service the event
- Poor waste and pollution management
- Greenhouse gas emissions that contribute to accelerated global warming and ozone layer depletion
- Poor land use practices promoting soil erosion and infestation by invasive alien plants
- Construction of expensive event-hosting infrastructure that is unsustainable to operate or maintain after the event.
- The cumulative impacts arising from the presence of large crowds.

The drivers of biodiversity loss often act in combination and so the resulting impacts are impossible to apportion neatly. This is, of course, a reflection of the multitudes of inter-dependencies of patterns and processes in the natural world.

2.8.3. Goals

The Green Goal is to ensure the event's impact on biodiversity is minimised by using the power of football to galvanise the country, raise awareness about biodiversity conservation issues and to promote the need to protect African ecosystem services.

2.8.4. Actions

Biodiversity protection can take many forms (Green Goal Project Team 2008). Awareness and educational campaigns coupled with practical actions hold most promise in the context of large events taking place in an urban environment. Mitigation measures may comprise:

- Making visitors to the city, as well as its citizens, aware of the importance and value of biodiversity in ecosystem functioning and its contribution to human health and wellbeing.
- The showcasing of local biodiversity hotspots and natural heritage sites should be included in the promotion of the host region in the official marketing for the event.
- New developments should not negatively impact on areas of natural heritage. The fauna and flora found on these sites should not be negatively affected.
- Indigenous vegetation should be used preferentially for landscaping, in and around the stadium precinct.
- Sustainable jobs linked to biodiversity should form a legacy of the event, including training of tour guides for natural heritage and biodiversity sites of interest.

Specific to the 2010 Soccer World Cup, NMBM has embarked on addressing biodiversity-related environmental impacts by launching these key projects:

1. Incorporation of water-wise and indigenous landscaping in the construction and upgrading of infrastructure for 2010.
2. Construction of plant structures (tunnels) for growing indigenous plant material.
3. Purchasing of indigenous plant material for landscaping and greening of the city.
4. Greening of Fan Parks with indigenous plant material and water-wise soil irrigation.
5. Planting of indigenous trees along the Bus Rapid Transport (BRT) system traffic routes.
6. Greening the city – Planting of indigenous trees along major traffic routes.

2.8.5. Projects in detail

(Refer to annexure A for detailed programme / time line)

2.8.6. E1. Water wise and indigenous landscaping in the stadium precinct.

Description:

All trees, of which there will be 135 of 5.5 – 6.0 m height on the soccer stadium grounds, will be 100% indigenous species. Embankments will be planted with 10 000 *Carissa* sp. (num-num) shrubs and thatching grass species. Both are also indigenous species. Irrigation of trees on the stadium grounds is managed via four separate controlling units delivering tap water to the roots by means of individual bubblers. Grassed areas total 100 000 m^2 on the stadium grounds and will be established with instant lawn. It is the intention not to water the lawn once it has taken root.

Street islands, verges and flower beds surrounding the stadium along Fettes Rd, Harrower Rd, Milner St and Prince Alfred St will use both exotic and indigenous species for their greening. At least 75% of the trees will be indigenous. A water-wise irrigation system incorporating programmable timers will control water flow to the sprayers and bubblers. It makes use of tap water.

Promote:

The biodiversity of the stadium precinct.

PROJECT DETAILS		
Objective	Increase biodiversity and reduce water consumption.	
Project leader	NMBM FIFA LOC / Errol Heynes	
Team members	NMBM FIFA LOC / Service provider	
Targets	75% indigenous plants.	
Indicators	Measure the number of alien vs indigenous plants.	
Key milestones	Appoint Service provider. Install Landscaping Completion.	Dates: June 2008. June 2009 March 2010.
Legacy project	Yes	
Green Goal budget	Included in stadium budget.	
Other budgets		

2.8.7. E2. Construction of plant structures for growing indigenous plant material.

Description:

The project entails the construction of three tunnels for the specific purpose of growing indigenous plant material, for use in the landscaping and beautification of the city.

Promote:

The biodiversity within the NMBM.

PROJECT DETAILS		
Objective	Increase biodiversity.	
Project leader	NMBM Parks / Tsietsi Mokonenyane	
Team members	NMBM Parks / Service provider	
Targets	75% indigenous plants used in landscaping.	
Indicators	Measure the number of alien vs indigenous plants.	
Key milestones	Construction Completion	Dates: June 2008. June 2009
Legacy project	Yes	
Green Goal budget		
Other budgets	NMBM Parks R 250 000	

2.8.8. E3. Purchasing of indigenous plant material.

Description:

Purchasing of indigenous plant material for the greening of the city from nurseries. This also includes purchasing of material for the growing of plant material in the tunnels for landscaping.

Promote:

The biodiversity within the NMBM.

PROJECT DETAILS		
Objective	Increase biodiversity.	
Project leader	NMBM Parks / Tsietsi Mokonenyane	
Team members	NMBM Parks / Service provider	
Targets	75% indigenous plants used in landscaping.	
Indicators	Measure the number of alien vs indigenous plants.	
Key milestones	Purchasing and growing Completion	Dates: June 2008. June 2010.
Legacy project	Yes	
Green Goal budget		
Other budgets	NMBM Parks R 250 000	

2.8.9. E4. Greening of Fan Park with indigenous plant material and water-wise soil irrigation.

Description:

The Fan Park at St George's Park Stadium is already meeting the Green Goal in terms of making a contribution to biodiversity protection. The intention is to boost the ongoing programme through the introduction of additional plant material. More than 50% of the trees are indigenous species. Tree irrigation uses water pumped from the Baakens River and makes plant maintenance independent from tap water.

Promote:

The biodiversity within the NMBM.

PROJECT DETAILS		
Objective	Increase biodiversity.	
Project leader	NMBM Parks / Tsietsi Mokonenyane	
Team members	NMBM Parks / Service provider	
Targets	75% indigenous plants used in landscaping.	
Indicators	Measure the number of alien vs indigenous plants.	
Key milestones	Purchasing and growing Installation Completion	Dates: June 2008. June 2009. March 2010
Legacy project	Yes	
Green Goal budget		
Other budgets	NMBM Parks R 1 million	

2.8.10. E5. Planting of indigenous trees along the Bus Rapid Transport (BRT) system traffic routes.

Description:

The initial three BRT routes, which will be operated for the first phase of implementation, have a combined length of 17 km. It is the intention of NMBM to eventually increase the number of BRT routes to a total of 107 km. The greening of the routes is an integral part of the BRT system. Approximately 900 indigenous trees (mostly the evergreen *Syzygium cordatum* (waterbessie)) will be planted. Groundcover will be 100% indigenous *Gazania* species.

Promote:

The biodiversity within the NMBM.

PROJECT DETAILS		
Objective	Increase bio-diversity.	
Project leader	NMBM Parks / Tsietsi Mokonenyane	
Team members	NMBM Parks / Service provider	
Targets	75% indigenous plants used in landscaping.	
Indicators	Measure the number of alien vs indigenous plants.	
Key milestones	As per BRT implementation plan	Dates: As per BRT implementation plan
Legacy project	Yes	
Green Goal budget		
Other budgets	NMBM Parks R 800 000	

2.8.11. E6. Greening city - Planting of indigenous trees major traffic routes.

Description:

The project includes the greening of major routes such as the Addo road with approximately 1200 indigenous trees (mostly the evergreen *Syzygium cordatum* (waterbessie)) will be planted. Groundcover will be 100% indigenous *Gazania* species.

Promote:

The biodiversity within the NMBM.

Evaluation

The firm commitment of NMBM to the use of indigenous plants for the greening of the city streets, during and beyond the 2010 Wold Cup, combined with the installation of water-saving devices, is meeting the Green Goal. Of concern is the widespread use of tap water for irrigation purposes, as alternative sources, such as treated effluent return schemes are non-existent and bulk storage of rainwater is hampered by insufficient and erratic rainfall.

PROJECT DETAILS		
Objective	Increase biodiversity.	
Project leader	NMBM Parks / Tsietsi Mokonenyane	
Team members	NMBM Parks / Service provider	
Targets	75% indigenous plants used in landscaping.	
Indicators	Measure the number of alien vs indigenous plants.	
Key milestones	Implementation Completion	Dates: June 2009 June 2010
Legacy project	Yes	
Green Goal budget		
Other budgets	NMBM Parks R 1.45 million	

2.9. F. Transport efficiency

2.9.1. Introduction

Mobility is regarded as a relevant area of action for the environmentally sound organisation of events. It is often the journeys occasioned by large events and their influence on the climate that stand to the fore, and also the traffic generated at the event venue, that are important issues for organisers seeking to put environmentally sound arrangements in place (Baller et al. 2008).

2.9.2. Impacts

All life in motion requires energy and consumes resources. This becomes problematic only when the source of the energy originates from the unsustainable exploitation of natural resources, such as fossil fuels, which are non-renewable. As fossil fuels form the mainstay of energy consumed by major sporting events, this is causing negative environmental impacts. The most important negative effects are contribution to climate change and to local air pollution. The transport sector is also responsible for increased noise levels, acidification, eutrophication, habitat loss, water pollution and waste generation. Natural resource depletion and negative visual effects are other consequences of transport related activities. In addition, transport infrastructure may significantly affect social and economic factors in local communities and influence people's health and safety.

2.9.3. Goals

The Green Goal of mobility is to achieve a substantive reduction of transport-induced environmental impacts, with special emphasis on climate protection and use of renewable sources of energy.

2.9.4. Actions

In respect of transport, impact mitigation measures may comprise the following:

- Minimise travel needs though transport and route planning,
- Promote public transport travel,
- Promote non-motorised transport,
- Use of cleaner and renewable fuel sources,
- Ensure the appropriate fuel efficiency and emissions standards are maintained within the public transport fleet.

Specific to the 2010 Soccer World Cup, NMBM has embarked on addressing transport-related environmental impacts by launching five key projects:

1. Host City Transport Operational Plan (HCTOP)
2. Implementation of HCTOP
3. Purchase of new buses (Euro III compliant)

4. Bus Rapid Transport Project
5. Non-motorised transport: cycle tracks and walkways.

2.9.5. Projects in detail

(Refer to annexure A for detailed programme / time line)

2.9.6.. F1. Host City Transport Operational Plan (HCTOP).

Description:

South Africa guarantees the provision of a high quality, reliable, efficient and safe transport system for the FIFA Family and all supporters of the 2010 World Cup. To meet this guarantee and to successfully host the event, the NMBM is set to provide an upgraded transport system supported by transport overlay services for the duration of the event. An important instrument for the implementation of this undertaking is the Host City Transport Operational Plan (HCTOP).

It makes a firm commitment to move towards a sustainable transport system through a travel demand management strategy, promotion of non-motorised means of transport, such as park-and-walk, as well as public transport arrangements in energy-efficient, environmentally clean vehicles, such as park-and-ride.

Promote:

The efficient and safe movement of people.

PROJECT DETAILS		
Objective	Effective and safe movement of people.	
Project leader	NMBM Transport / Keith Mitchell	
Team members	NMBM Transport / Service providers	
Targets	Reduce carbon footprint through efficient movement of people	
Indicators	Person trips	
Key milestones	Appoint Service provider Draft plan Final plan Completion	Dates: June 2008 June 2009 March 2010
Legacy project	Yes	
Green Goal budget		
Other budgets	Public transport infrastructure systems fund (PTIS) R 3 million	

2.9.7. F2.Implementation of the (HCTOP).

Description:

The project is to target the following key areas:

1. Vehicle fleet requirements
2. Special travel groups
3. Persons with disability
4. Spectator transport services
5. Public information systems
6. Event direction signage
7. Traffic control, law enforcement and emergencies
8. Freight management and logistics
9. Risk management

This will include the establishment of a Transport Operations Management Team (TOMT) that will lead the way in making the 2010 FIFA World Cup event a success from the transport perspective.

Promote:

The efficient and safe movement of people.

PROJECT DETAILS		
Objective	Effective and safe movement of people.	
Project leader	NMBM Transport / Keith Mitchell	
Team members	NMBM Transport / Service providers	
Targets	Reduce carbon footprint through efficient movement of people	
Indicators	Person trips	
Key milestones	Appoint Service provider Implementation Close out report	Dates: June 2009 December 2009 September 2010
Legacy project	Yes	
Green Goal budget		
Other budgets	Public Transport Infrastructure Systems Fund (PTIS) R 105 million	

2.9.8. F3. Purchase of new bus fleet to Euro III standard.

Description:

A small fleet of 25 - 30 new articulated buses are currently being procured by the city at a projected cost of R100 million to be used ultimately in the new public transport system, but which will be available during the World Cup period to provide shuttle and other event specific services to the stadium and fan park. These buses will be powered by 6-cylinder diesel engines that meet Euro III exhaust emissions requirements at a minimum. Thus they are expected to make a meaningful contribution to the reduction of greenhouse gas emissions during the 2010 World Cup and beyond.

Promote:

The efficient and safe movement of people.

PROJECT DETAILS		
Objective	Effective and safe movement of people, with 'green vehicles'	
Project leader	NMBM Transport / Keith Mitchell	
Team members	NMBM Transport / Service providers	
Targets	Reduce carbon footprint through cleaner technology	
Indicators	Reduction in CO_2 emissions from forma diesel fleet.	
Key milestones	Tender Appoint Supplier. Take Delivery.	Dates: June 2009 October 2009 March 2010
Legacy project	Yes	
Green Goal budget		
Other budgets	Public transport infrastructure systems fund (PTIS) R 100 million	

2.9.9. F4. Bus Rapid Transport Project.

Description:

A trunk bus network in the public transport corridors will be the back-bone of the Bus Rapid Transport (BRT) system. It will offer scheduled services with high frequency operating along defined routes. The phased implementation of the new system is yet to be decided upon pending current negotiations with the minibus-taxi industry on their participation in the initiative. It is hoped that a limited part of the new system will be operational by mid-2010. In areas where the new system has not been introduced in time for the 2010 World Cup, the current public transport operations which are being rendered by Algoa Bus Company and independent minibus-taxi operators will continue to operate. Although not of the same quality and effectiveness as envisaged to be provided by the new system, the current public transport system will have sufficient capacity to cater for the normal public transport demand.

Promote:

The efficient and safe movement of people.

PROJECT DETAILS		
Objective	Effective and safe movement of people, with “green vehicles’	
Project leader	NMBM Transport / Keith Mitchell	
Team members	NMBM Transport / Service providers	
Targets	Reduce carbon footprint through cleaner technology.	
Indicators	Reduction in CO_2 emissions from forma diesel fleet.	
Key milestones	Tender Appoint Service provider. Completion.	Dates: June 2008. January 2009. December 2010
Legacy project	Yes	
Green Goal budget		
Other budgets	Public transport infrastructure systems fund (PTIS) R 260 million (Phase 1)	

2.9.10. F5. Non-motorised Transport Project.

Description:

The NMBM Comprehensive Integrated Transport Plan of 2008/09 includes several projects involving the provision of sidewalks and cycle ways throughout the metropolitan area in support of non-motorised transport, which will also help to achieve the goals of travel demand management. The incorporation of pedestrian corridors in new township layouts to facilitate access to public transport and the provision of signals, kerb ramps and road crossings are other support mechanisms that are being implemented.

Promote:

The efficient and safe movement of people.

PROJECT DETAILS		
Objective	The promotion of non motorised transport.	
Project leader	NMBM Transport / Keith Mitchell	
Team members	NMBM Transport / Service providers	
Targets	Reduce carbon footprint.	
Indicators	Reduction in CO_2 emissions from motorised transport.	
Key milestones	Draft plan Final plan. Implementation	Dates: June 2008. June 2009. June 2009
Legacy project	Yes	
Green Goal budget		
Other budgets	Public transport infrastructure systems fund (PTIS) R 12.5 million.	

Evaluation

When considering the known environmental impacts of transportation to, at and from large sporting events that were alluded at the beginning of this chapter, the host city has rightly focused on practical steps to reduce carbon emissions from combustion engines and to minimise local air pollution. This is achieved by:

- Efficient transport planning
- Promotion of energy-efficient public transport
- Use of vehicles with favourable exhaust emission characteristics, and to a lesser extent
- By promoting non-motorised modes of transport.

This should go a long way towards meeting the stringent FIFA requirements for the greening of the 2010 World Cup.

2.10. G. Responsible Tourism

2.10.1. Introduction

Responsible tourism seeks to implement practices that are respectful of both the natural and the cultural environment and which contribute in an ethical manner to local economic development. Responsible tourism promotes the tourist's awareness of his/her impacts on the local territory. Responsible tourism is about enabling local communities to enjoy a better quality of life, through increased socio-economic benefits and an improved environment. It is also about providing better holiday experiences for guests and good business opportunities for tourism enterprises (DEAT 2002).

2.10.2. Impacts

Around the world, tourism destinations are facing increasing pressures on their natural, cultural and socio-economic environments. Uncontrolled tourism growth, often based on short-term priorities, invariably results in unacceptable impacts that harm society and the environment. This is not acceptable in South Africa.

2.10.3. Goals

Responsible tourism is the key guiding principle for 2010 World Cup related tourism development in South Africa. All 2010 World Cup tourism activities should contribute significantly to the improvement of the quality of life of every South African.

2.10.4. Actions

As a lead sector within the national economic strategy, a globally competitive tourism sector is regarded as a major force in the reconstruction and development efforts of the government (DEAT 2002). As was agreed in the 1996 'White Paper on the development and promotion of tourism in South Africa', responsible tourism is not a luxury for South Africa. It is an absolute necessity if South Africa is to emerge as a successful international competitor. Government, the private sector and communities should work together to practice tourism responsibly. hence, there is a need to ensure that all tourism development plans for the event are environmentally-friendly; prioritize eco-tourism; encourage local economic development and promote social justice.

Specific to the 2010 World Cup, NMBM is promoting responsible tourism through the following projects:

1. Tourism Master Plan.
2. Code of responsible conduct for visitors

3. Responsible Tourism awareness and training
4. Environmental accreditation system for accommodation sector: Green Stay SA
5. Conduct “Culture and Heritage Guide“ training to tourism ambassadors, tourist guides and museum staff
6. On-going programme with taverners who host “Cultural Evenings” for foreigners on Tavern Tours. taverners trained on SA Host programme.
7. NMBM Tourist ‘Green Map’

Projects in detail

(Refer to annexure A for detailed programme / time line)

2.10.6. G1. Tourism Master Plan.

Description:

Ensuring that all tourism development plans for the event are environmentally friendly, to prioritize eco-tourism, encourage local economic development and to promote social justice.

Some of the tourism facilities are:
Van Stadens Nature Reserve (accommodation, conference facility, cultural Xhosa experience).
Swartkops and Aloes Nature Reserves (accommodation, conference facility, cultural Xhosa experience, environmental education and jazz, multipurpose centre, amphitheatre for (festival/arts).
Settlers Park Nature Reserve (Accommodation, conference facility, cultural Xhosa Experience).

Promote:

The promotion of local heritage.

PROJECT DETAILS		
Objective	Promote local heritage.	
Project leader	NMBM Tourism / Carleen Arends	
Team members	NMBM EDRS / Nelson Mandela Bay Tourism / Kyle Business Solutions	
Targets		
Indicators	Visitor feedback	
Key milestones	Final Plan	Dates: January 2010
Legacy project	Yes	
Green Goal budget	-	
Other budgets	NMBM EDRS & Tourism R 750 000.	

2.10.7. G2. Code of responsible conduct for visitors.

Description:

To ensure that there are adequate facilities and a code of responsible conduct for tourist is in place.

Promote:

The promotion of responsible tourism is an absolute necessity. Government; the private sector and communities should work together to promote and practice responsible tourism. This is to ensure safe tourism, because the safety of tourist should be a priority.

PROJECT DETAILS		
Objective	Awareness of local issues.	
Project leader	NMBM Tourism / Carleen Arends	
Team members	NMBM / Service Provider	
Targets		
Indicators		
Key milestones	Draft Document	Dates: January 2010
Legacy project		
Green Goal budget	-	
Other budgets	Lotto funding through NMBM Tourism - R 50 000.	

2.10.8. G3. Responsible Tourism awareness and training.

Description:

Tourists need to be educated on the awareness of their impacts on the local territory. The training and awareness is also about providing the guests with an unforgettable holiday experience and to create good business opportunities for tourism enterprises.

Promote:

To promote responsible tourism

PROJECT DETAILS		
Objective	Education	
Project leader	NMBM Tourism / Carleen Arends	
Team members	NMBM / Service Provider	
Targets		
Indicators		
Key milestones	Workshops	Dates: January 2010
Legacy project		
Green Goal budget	-	
Other budgets	NMBM -Tourism - R 255 000.	

2.10.9. G4. The Green Stay SA.

Description:

green Stay SA is the environmental accreditation system for the hospitality industry

Promote:

The promotion of green values in tourism and hospitality.

PROJECT DETAILS		
Objective	Promote green venues	
Project leader	NMBM Tourism / Carleen Arends	
Team members	NMBM / Service Provider	
Targets	Achieve a significant increase in the number of accredited hospitality establishments	
Indicators		
Key milestones	Accreditation	Dates: January 2010
Legacy project		
Green Goal budget	-	
Other budgets	NMBM –EDRS & Tourism - R 10 000.	

2.10.10. G5. "Culture and Heritage Guide" training for tourism ambassadors, tourist guides and museum staff members

Description:

Training of guides as certified Culture and Heritage Guide.

Promote:

Training of guides.

PROJECT DETAILS		
Objective	Prepare local ambassadors for local culture and heritage.	
Project leader	NMBM Tourism / Carleen Arends	
Team members	NMBM / Service Provider	
Targets	Train 30 tourist guides	
Indicators		
Key milestones	Conduct workshops	Dates: January 2010
Legacy project		
Green Goal budget	-	
Other budgets	NMBM –EDRS & Tourism - R 80 000.	

2.10.11. G6. Training of taverners through the SA Host programme.

Description:

Introduction of training for taverners who will be hosting cultural evenings for foreigners. The South African Host programme will be used. SA Host is a national programme to develop service excellence skills and promote a culture of customer service in South Africa. It does this by creating an awareness of the importance of the individual's role in delivering superior customer service in their place of work and their community. SA Host is a low cost, high impact, two-day customer service skills workshop presented by a licensed SA Host Leader (trainer).

Promote:

Improve the host skills of taverners.

PROJECT DETAILS		
Objective	Prepare local taverners for the 2010 World Cup influx of foreign visitors.	
Project leader	NMBM Tourism / Carleen Arends	
Team members	NMBM	
Targets	Train taverners	
Indicators	Feedback from visitors	
Key milestones	Conduct workshops	Dates: January 2010
Legacy project	Yes	
Green Goal budget	-	
Other budgets	NMBM –EDRS & Tourism - R 30 000.	

2.10.12. G7. NMBM 'Tourist Green Map'

Description:

The production of a Green Map for Tourist. to highlight and inform visitors of the culture and heritage of Port Elizabeth.

Promote:

Visitors awareness.

Evaluation

Guided by a Master Plan, NMBM fully embraces the national directive of Responsible Tourism practises in the staging of the 2010 Wold Cup. This is supported by the accreditation and training of the key actors in the hospitality industry.

PROJECT DETAILS		
Objective	Visitor awareness.	
Project leader	NMBM Tourism / Carleen Arends	
Team members	NMBM	
Targets		
Indicators	Visitor feedback	
Key milestones	Prepare review documentation	Dates: January 2010
Legacy project		
Green Goal budget	-	
Other budgets	NMBM –Tourism budget - R 50 000.	

2.11. H. Awareness raising

2.11.1. Introduction

FIFA's standard Host City Agreement for the 2010 Soccer World Cup includes an environmental protection clause that commits all host cities to ensuring that environmental sustainability issues are communicated widely and addressed effectively: The high media profile of the 2010 World Cup presents an excellent opportunity to raise environmental awareness. Only if people become aware of the consequences of their actions on the environment this may then lead to changed behaviour patterns and the wise consumption of critical resources, such as water,, electricity and fossil fuel. This behavioural change, aligned with appropriate infrastructural modification (e.g. waste recycling facilities, energy efficient lighting and public transport systems) will create positive economic impacts in the long-term in respect of reduced operational and environmental costs.

In recent times South Africans have been repeatedly exposed to events that were directly related to the availability of natural resources. For instance, a nationwide shortage of electricity caused black-outs and necessitated load shedding for many communities. Similarly, water shortages, presumed to be aggravated by changed weather patterns because of climate change, have forced the implementation of water restrictions in the municipality. As a result, NMBM and civil society are recognizing the need to manage our natural resources more effectively and responsibly. In doing so, we can ensure positive effects on our health, quality of life and even the cost of living.

2.11.2. Go Green Campaign

The NMBM, in response to the ICLEI African Local Government Roadmap pre-Copenhagen Summit in Tshwane from 29 – 31 July 2009, embarked on a climate change campaign under the banner of "Go Green". The campaign aims at creatively and visibly communicating its initiatives towards conserving the environment for tomorrow. These initiatives, projects and actions of the NMBM are aimed at ensuring the effective and responsible use and management of our natural resources.

Through the Go Green Campaign initiatives by the NMBM towards sustainable living are showcased. Go Green also suggest actions that can be taken by its residents to manage their lives in a more sustainable way. In doing so it is fully aligned with the environmental awareness raising goals of the 2010 World Cup.

The municipality under the leadership of the Municipal Manager has managed to initiate an array of climate change projects with the assistance of the Central Energy Fund (CEF). Most of the projects focus on energy efficiency and renewable energy strategies. All of these projects

are falling under the banner of “Go Green”. Several NMBM Directorates are involved in the planning and implementation of the projects. The following are some of the projects:

- 15% Mega Watt Project
- Solar Heating Project
- Wind Energy Project
- Methane Gas Landfill Extraction Project
- Waste Water Treatment and Water Pumping Energy Project
- Waste Exchange Project
- Invasive Alien Plant Control Project
- Green Procurement Project
- Traffic Lights Energy Project

2.11.3. Green Goal promotion

Specific to the 2010 World Cup the following key projects have been identified to promote the awareness of the Green Goal principles:

1. Green Goal workshop Series
2. Green Goal brand activation
3. Green Goal marketing and communication roll-out
4. Green Goal ambassadors
5. Green Goal website and online resources
6. Green Goal volunteer and training programme
7. Soccer & Environment education poster and guide.

Projects in detail

(Refer to annexure A for detailed programme / time line)

2.11.3. H1. Green Goal workshop series

Description:

Creatively and visibly communicate the need for conserving the environment for tomorrow with the public and visitors.

Promote:

Introducing the public to the Green Goal requirements.

PROJECT DETAILS		
Objective	Education and awareness.	
Project leader	NMBM FIFA LOC – Sharif Frost	
Team members	NMBM	
Targets	Raise awareness of the Green Goal	
Indicators	Public awareness	
Key milestones	Conduct Workshops	Dates: January 2010
Legacy project		
Green Goal budget	R25 000	
Other budgets	N/A.	

2.11.4. H2. Green Goal brand activation

Description:

Assist in the local activation of the Green Goal brand.

Promote:

To introduce and make the public aware of the green goal brand development and activation

PROJECT DETAILS		
Objective	Education awareness.	
Project leader	NMBM FIFA LOC – Sharif Frost	
Team members	NMBM	
Targets	Activate the Green Goal locally	
Indicators	Public Awareness	
Key milestones	Brand development	Dates: January 2010
Legacy project	No	
Green Goal budget	R150 000	
Other budgets	N/A.	

2.11.5. H3. Green Goal marketing and communication roll-out.

Description:

Creating and developing a marketing plan and communication roll-out strategy.

Promote:

Marketing and communicating the Green Goal to the public and visitors.

PROJECT DETAILS		
Objective	Education awareness.	
Project leader	NMBM FIFA LOC – Sharif Frost	
Team members	NMBM	
Targets	Marketing and roll-out	
Indicators	Public awareness	
Key milestones	Brand development	Dates: January 2010
Legacy project		
Green Goal budget	R900 000	
Other budgets	N/A.	

2.11.6. H4. Green Goal ambassadors

Description:

To introduce a recruitment programme that can be used to identify ambassadors that can be used in the Greening Programme.

Promote:

Informing the public about the need for recruiting good ambassadors and the available projects.

PROJECT DETAILS		
Objective	Education awareness.	
Project leader	NMBM FIFA LOC – Sharif Frost	
Team members	NMBM	
Targets	Identify Green Goal ambassadors	
Indicators	Public awareness	
Key milestones	Workshop	Dates: January 2010
Legacy project	No	
Green Goal budget	R80 000	
Other budgets	N/A.	

2.11.7. H5. Green Goal website and online resources

Description:

The introduction of a Green Goal website where all the Green Goal information will be on and regular updates will be available.

Promote:

The website will be used to promote the public awareness.

PROJECT DETAILS		
Objective	Education awareness.	
Project leader	NMBM FIFA LOC – Sharif Frost	
Team members	NMBM	
Targets	Public awareness	
Indicators	Number of website hits	
Key milestones	Development	Dates: January 2010
Legacy project	No	
Green Goal budget	R40 000	
Other budgets	N/A.	

2.11.8. H6. Green Goal volunteer and training programme

Description:

Introducing a volunteer training programme which would apply to members of the public that would like to volunteer their service.

Promote:

Community involvement in large events

PROJECT DETAILS		
Objective	Education awareness.	
Project leader	NMBM FIFA LOC – Sharif Frost	
Team members	NMBM	
Targets		
Indicators	Public awareness	
Key milestones	Training Workshops	Dates: January 2010
Legacy project		
Green Goal budget	R200 000	
Other budgets	N/A.	

2.11.9. H7. 'Soccer & Environment' education poster and guide

Description:

To create a Soccer & Environment education poster and guide that can be used by educational institutions. Using the World Cup as a platform to raise the awareness.

Promote:

Education and environmental awareness raising.

Evaluation

NMBM is responding to the need to promote the Green Goal ideals in two ways: through its own Go Green Campaign and through specific key projects promoting awareness of the Green Goal principles of FIFA. As both share the same ideals the synergy arising from that makes for effective awareness raising of sustainable living.

PROJECT DETAILS		
Objective	Education awareness.	
Project leader	NMBM FIFA LOC – Sharif Frost	
Team members	NMBM	
Targets	Create environmental awareness	
Indicators	Public awareness	
Key milestones	Poster development	Dates: January 2010
Legacy project	Yes	
Green Goal budget	R300 000	
Other budgets	N/A.	

2.12. I. Monitoring and measuring

2.12.1. Introduction

Monitoring is the systematic collection and analysis of information as a project progresses. It is aimed at improving the efficiency and effectiveness of a project or organisation. It is based on targets set and activities planned during the planning phases. It enables you to determine whether the resources available are sufficient and are being well used, whether the capacity is sufficient and appropriate, and whether you are doing what you planned to do. Monitoring involves:

1. Establishing an indicator of efficiency, effectiveness and impact;
2. Setting up system to collect information relating to these indicators;
3. Collecting and recording the information;
4. Analysing the information;
5. Using the information to inform day-to-day management.

2.12.2. Goal

To determine whether the Host City Nelson Mandela Bay Municipality has reached its goal to achieve significant savings in the spheres of water, waste, energy and mobility resulting in a climate-neutral event.

2.12.1. Actions

NMBM has set itself quantitative targets in terms of the greening of the 2010 World Cup. These have been described in the previous chapters of this report. By monitoring and measuring pertinent activities during the event NMBM undertakes to determine to what extent these targets have been met. Outcomes will be reported on in the 'Legacy Report', with a publication date tentatively set for early 2011.

Projects in detail

(Refer to annexure A for detailed programme / time line)

2.12.1. I1. Annual Report and Legacy Report

Description:

Monitoring and measuring the performance of all Green Goal projects and reporting the outcomes in annual reports and in the legacy report.

Promote:

The accountability for the Green Goal projects.

PROJECT DETAILS		
Objective	Accountability	
Project leader	NMBM – J. Mkosana	
Team members	NMBM / Service Provider	
Targets	Final report	
Indicators	Lessons learnt	
Key milestones	Data Collection Final Legacy Report	Dates: January 2010 Early 2011
Legacy project		
Green Goal budget	R400 000	
Other budgets	Potential private sector / donor sponsorship opportunity.	

3. References

Anonymous. 1996. Greening the Olympic Games. Environmental Health Perspectives 104 (6): 597-598.

Department of Environmental Affairs and Tourism. 2002. National responsible tourism development guidelines for South Africa.

March 2002 Green Goal Project Team. 2008. Minimum environmental standards for Green Goal 2010.

Mathias Baller, Peter Blickwedel, Klaus-Michael Dubrikow, Susanne Hempen, Kerstin Hoth, Dr. Ulf Dietmar Jaeckel, Frank Kannenberg, Wolfgang Köhn, Peter Theodor Reichling, Annette Schmidt-Räntsch, Frank Simon (all BMU), Jens Schumann (formerly BMU) Dr. Hans-Hermann Eggers and Dagmar Kase (UBA). 2008. Guidelines for the Environmentally Sound Organisation of Events. Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and Federal Environmental Agency (UBA).

Öko-Institut 2003. Green Goal - Environmental goals for the 2006 FIFA World Cup.

Organisationskomitee FIFA Fussball-Weltmeisterschaft. 2006. Green Goal Legacy Report. 120 pp.

Simmons, R., Barnard, P., Dean, W.R.J., Midgley, G., Thuiller, W. & Hughes G. 2004. Climate change and birds: perspectives and prospects from southern Africa. *Ostrich* 75(4): 295–308.SSI Engineers and Environmental Consultants. 2008. Update of the Comprehensive Integrated Transport Plan 2008/09.

Turton, A. 2008. Three Strategic Water Quality Challenges that Decision-Makers Need to Know About and How the CSIR Should Respond. Keynote Address: A Clean South Africa. Presented at the CSIR Conference “Science Real and Relevant” 18 November 2008, Pretoria.

ANNEXURE A
(GREEN GOAL ACTION PLAN)