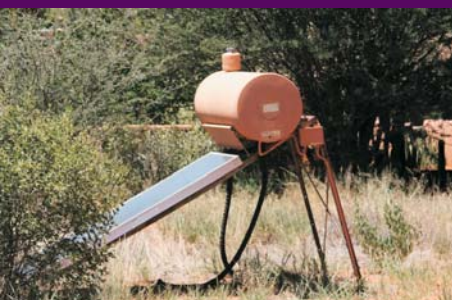




REPUBLIC OF NAMIBIA

# BEST AVAILABLE TECHNOLOGIES



DECEMBER 2006

## A Guide for the Namibian Tourism & Hospitality Industry

Ministry of Environment and Tourism  
Directorate Environmental Affairs

## BACKGROUND TO THIS GUIDE

The Cleaner Production Component (CPC), housed within the Namibian Ministry of Environment and Tourism's Directorate of Environmental Affairs, has been tasked with the promotion of Cleaner Production as a practical and achievable methodology to achieve improved environmental practice in Namibian industry.

As part of its activities, the CPC has developed a series of guides on Best Available Technologies for various sectors, of which this booklet is one. The purpose of this Guide is to assist the Namibian tourism and hospitality industry in identifying technologies of differing sophistication that can be easily implemented, thereby resulting in improved environmental and economic performance.

PRODUCED BY THE CLEANER PRODUCTION COMPONENT  
OF THE NAMIBIAN MINISTRY OF ENVIRONMENT AND TOURISM

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Other Cleaner Production and BAT guides published and available from the Namibian Ministry of Environment and Tourism:

- ◆ Cleaner Production Training Booklet: A Foresight to Economic, Social and Environmental Benefits of Adopting Cleaner Production, March 2005
- ◆ Cleaner Production Strategy and Context Analysis, Volume I: Implementation Strategy, July 2005
- ◆ Regulators Guide to the Promotion of Cleaner Production in Namibian Industries, April 2006
- ◆ Best Available Technologies: A Guide for the Namibian Fish Processing Industry, April 2006
- ◆ Best Available Technologies: A Guide for the Namibian Meat Processing Industry, January 2007

**NOTE:** FOR FURTHER INFORMATION ON THE NAMIBIAN CONTEXT FOR CLEANER PRODUCTION, THIS GUIDE SHOULD IDEALLY BE READ IN CONJUNCTION WITH THE REGULATOR'S GUIDE TO THE PROMOTION OF CLEANER PRODUCTION IN NAMIBIAN INDUSTRIES (APRIL 2006).



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### DEFINITION

Best Available Technologies (BAT) is a generic term used in the field of good environmental practice and describes technologies that are:

BEST	Best at preventing pollution or promoting environmental compliance.
AVAILABLE	Available in that the technologies are procurable, both financially and geographically by the industry in question.
TECHNOLOGY	In the sense of equipment, as well as techniques, training and maintenance.







## DRIVERS FOR BAT IN THE TOURISM & HOSPITALITY INDUSTRY

### NAMIBIAN POLICY AND LEGAL FRAMEWORK

Since independence in 1990 Namibia has overhauled much of its legislative policy, allowing the opportunity to integrate key environmental imperatives into its policy and legal framework. Listed below are important pieces of legislation and government strategies, whose environmental components have significant reference to the tourism and hospitality industry. Of particular significance are new and severe regulations being developed to enforce the new Water Resources Management Act No. 24 of 2004.

#### POLICIES SPECIFICALLY RELEVANT TO THE NAMIBIAN TOURISM & HOSPITALITY INDUSTRY

- ✦ Namibian Constitution
- ✦ 2nd National Development Plan
- ✦ Environment Management & Assessment Bill
- ✦ Pollution Control & Waste Management Bill
- ✦ Labour Act 1997
- ✦ Marine Resources Act 2000
- ✦ Water Resources Management Act (No. 24 of 2004)
- ✦ Vision 2030
- ✦ NTB Act of 2000
- ✦ Government Notices 138 & 139 on Declaration of Tourism Related Businesses
- ✦ Government Notice 121 on General Health Regulations
- ✦ A range of Municipal Regulations

NOTE: Refer to [The Regulator's Guide to the Promotion of Cleaner Production in Namibian Industry](#) for relevant extracts from these policies.

#### RIGHT

Many tourism and hospitality establishments in Namibia are located within fragile ecosystems, such as the Fish River Canyon equiring the greatest environmental sensitivity in their building and operations.



## INCREASING COST OF RESOURCES

Implementation of BAT reduces the amount of input resources, such as water and energy, which is required in the running of a tourist establishment. It also reduces the amount of waste created that would ultimately be deposited at landfill sites. These natural services (water, energy and waste deposits) are all experiencing unprecedented inflationary costs in Namibia. The anticipated trend is for consistent price increases over time, thereby making BAT a continuously cost-effective business approach!

### COMPARATIVE NATURAL RESOURCE COSTS

#### WALVIS BAY

##### WATER PRICES FOR INDUSTRY IN WALVIS BAY

2001:	N\$9.75/m <sup>3</sup> /month (flat fee)
2005:	N\$12/m <sup>3</sup> for 0-500 m <sup>3</sup> /month
	N\$14.90/m <sup>3</sup> for 501-1500 m <sup>3</sup> /month
	N\$15.90/m <sup>3</sup> for 1501-3000 m <sup>3</sup> /month
	N\$16.85/m <sup>3</sup> for 3001+ m <sup>3</sup> /month

#### WINDHOEK

##### ELECTRICITY (NON-DOMESTIC)

2000:	N\$0-203 / kWh
2004:	N\$0-320 / kWh

##### WATER (NON-DOMESTIC)

2000:	N\$6-60 / Kl
2004:	N\$8-40 / Kl

NOTE: Only large establishments, accounting for 20% of bed capacity, use non-domestic rates

## KEY BAT PRINCIPLE

BAT makes financial common sense! By reducing consumption, establishments can save on input costs while also benefiting from increasing numbers of tourists attracted to eco-friendly destinations!

## DEMAND FOR ECO-FRIENDLY TOURIST ESTABLISHMENTS

Tourism is one of the fastest growing economic sectors in the world. With this growth has come an increasing understanding that the sector must act in a sustainable fashion. This trend is being driven by a number of different international and local initiatives.

Examples of these include:

- ◆ Namibian EcoAwards
- ◆ Namibian EcoAward Good Practice Handbook
- ◆ Sustainable Tourism: The Berlin Declaration, March 1997
- ◆ Quēbec Declaration on Ecotourism, May 2002
- ◆ Responsible Tourism in Destinations: The Cape Town Declaration, August 2002
- ◆ Charter for Sustainable Tourism (1995)
- ◆ Global Codes of Ethics for Tourism, 1999
- ◆ International Year of Ecotourism -2002



<p>ABOVE</p>	<p>Kavango River, Caprivi □ many establishments interact and are in close proximity with indigenous communities and cultures, towards which they must be sensitive and work in a spirit of sustainability.</p>
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□ Sustainable tourism in its purest sense, is an industry which attempts to make a low impact on the environment and local culture, while helping to generate income, employment, and the conservation of local ecosystems. It is responsible tourism which is both ecologically and culturally sensitive. □

Global Development Research Centre, 2006

### KEY BAT PRINCIPLE

Environmental interventions are often met with resistance and concerns over decreased guest experience, e.g. less water pressure from showers or reduced illumination of energy efficient light bulbs. The BAT interventions in this guide, if implemented correctly, should avoid any such devaluation of the tourist experience.

REAL  
EXAMPLE

The 5 star Hotel Inter Continental in Sydney implemented an environmental policy that included conserving natural resources and energy; using resources more efficiently; minimising waste production; and, using products and materials that have the least negative impact on the environment in use and source of origin.

Initial investments cost the hotel A\$275 000, while savings included:

- ◆ Financial savings of A\$300 000 per year
- ◆ 1 582 tonnes of carbon dioxide emissions prevented as a result of reduced electricity and energy consumption
- ◆ 24 950 m<sup>3</sup> less waste water being discharged





## ACTIVITY AREAS WITH GREATEST ENVIRONMENTAL IMPACT

Most hotels, guest farms, lodges and B&B establishments can be divided in areas of operational activity where specific tasks are undertaken or services offered. These typically include central administrative areas (offices and housekeeping); public areas (foyers and lounges); guest areas (bedrooms and en-suite bathrooms); kitchens and restaurants; gardens; mechanical areas; and, in some case, slaughterhouses.

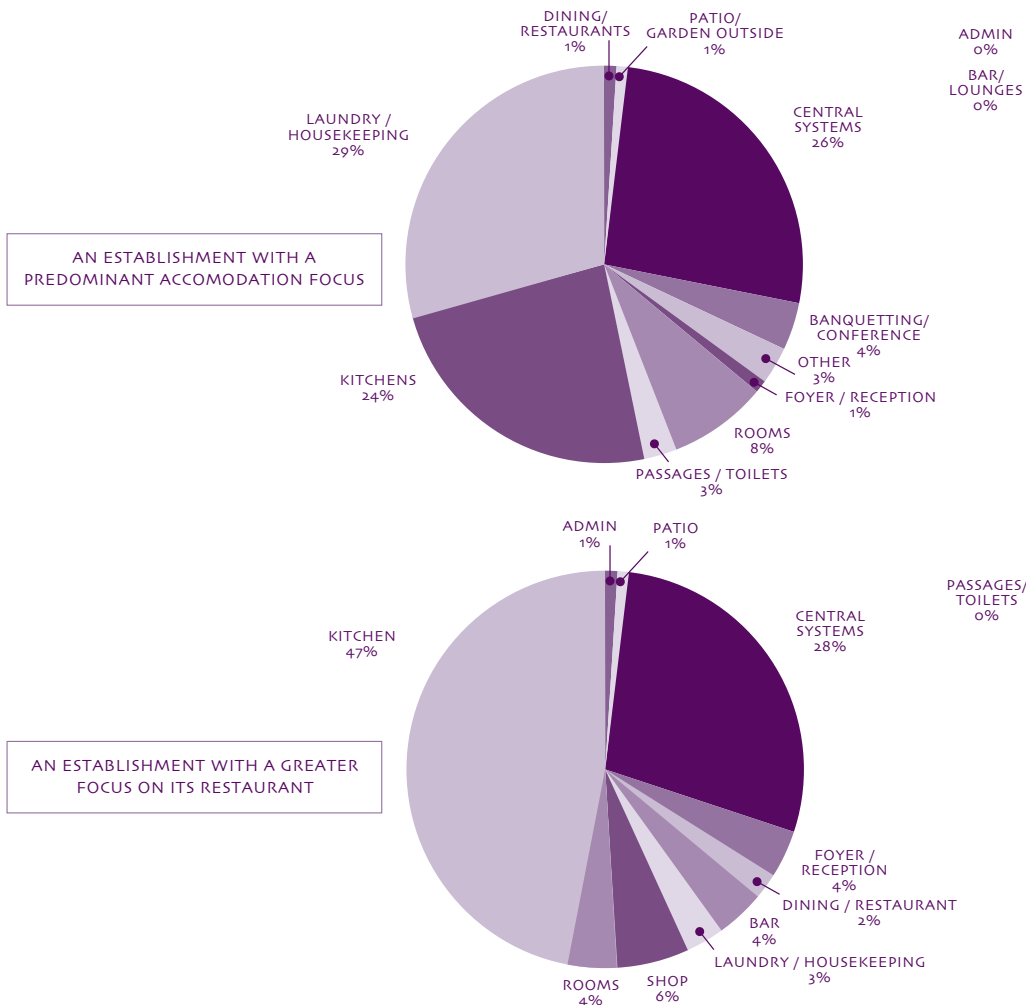
The environmental impact of each activity area will differ according to the size and services offered by different establishments. It is, however, useful to analyse the potential impact of each area as future monitoring can be undertaken and priority BAT interventions easily identified.

### KEY BAT PRINCIPLE

BAT interventions are supported by standard operational procedures (SOPs) carried out by staff on a continual basis and thereby preventing unnecessary wastage of key resources.

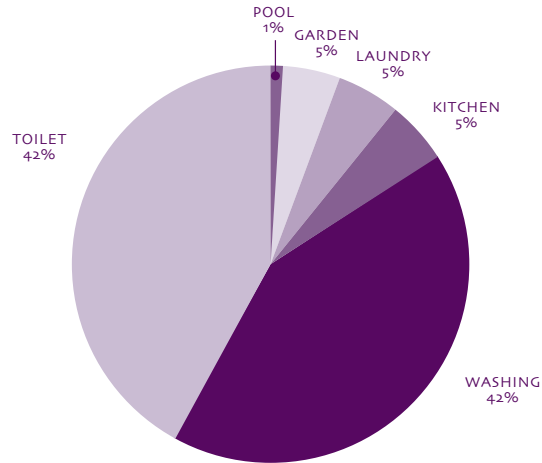
Examples include the constant monitoring of:

- waste generation
- water and energy consumption
- maintenance of equipment and infrastructure
- staff training

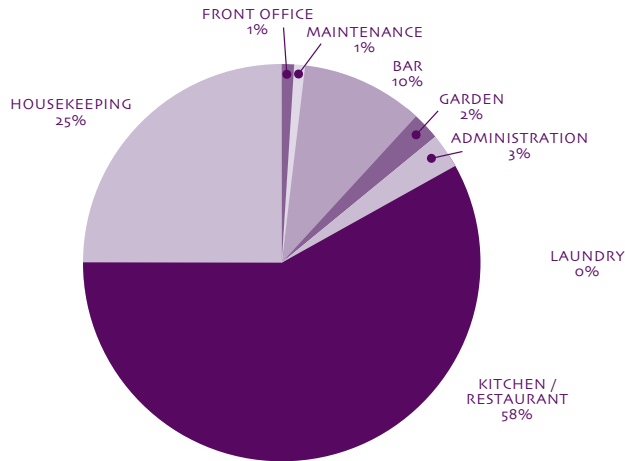




## GENERIC ELECTRICITY-USE PROFILES OF DIFFERENT HOTELS



WATER-USE PROFILES OF A HOTEL WITH A SMALL GARDEN AND SWIMMING POOL, WHERE THE LAUNDRY IS PARTLY CONTRACTED OUT



GENERIC WASTE GENERATION PROFILE OF A HOTEL WITH A RESTAURANT

REAL  
EXAMPLE



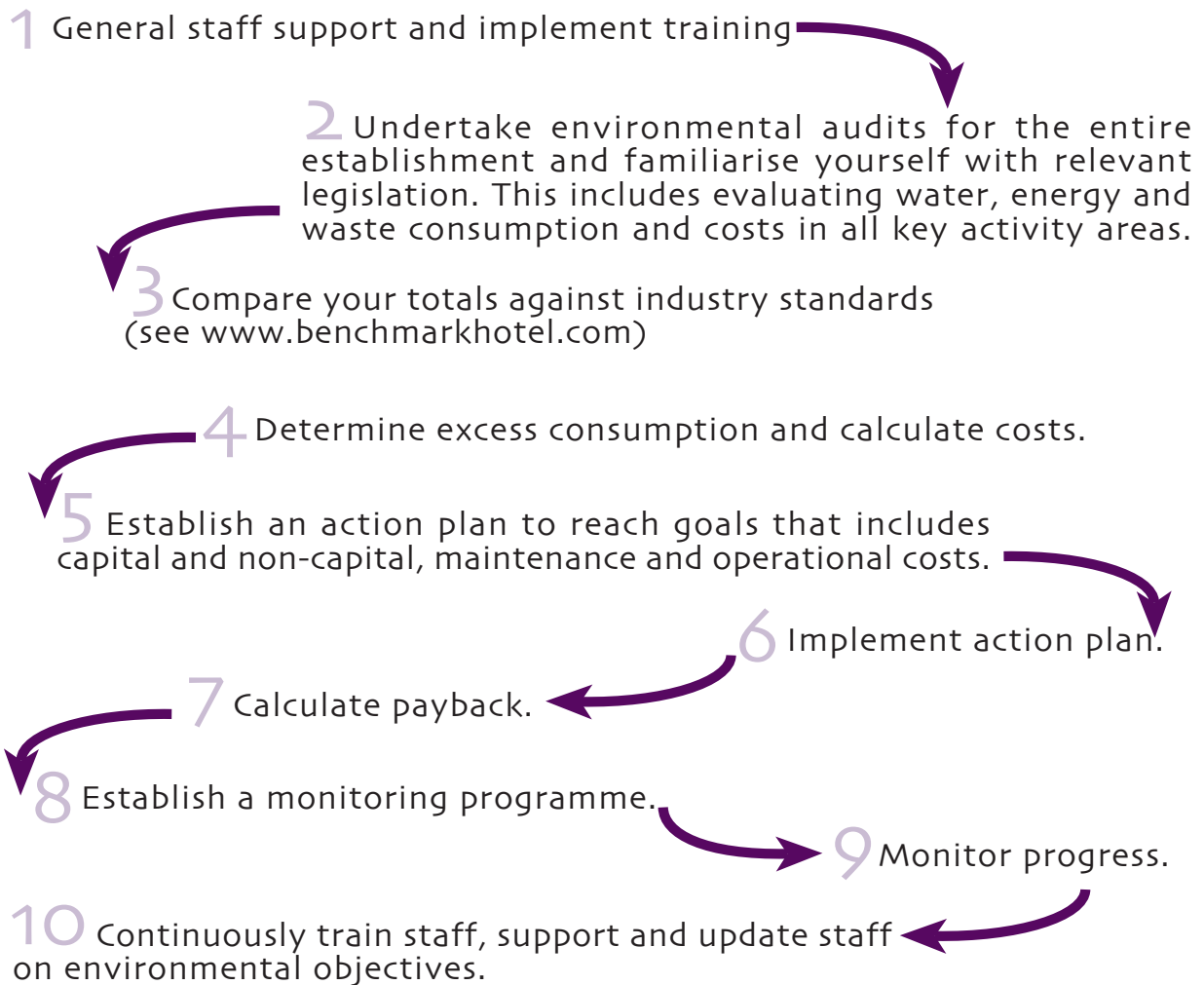
Taps and pipes should always be maintained, preventing leaks and drips. Examples of water losses caused by leaking taps and pipes, assuming a water price of N\$9.24 per cubic metre.

Leakage	Water loss (litre/hour)	Water loss per year (m <sup>3</sup> )	Loss per leakage per year (N\$)
1 drop per second	0.7	6.1	56
1 drop per second	2.1	18.4	170
1mm squirt	9	89	822
1.5mm squirt	18	158	1460

Source: Cleaner Production Component, CP Scoping Study for Namibia Wildlife Resorts (PTY) Ltd, Etosha, March 2006



## TEN STEPS TO GOOD ENVIRONMENTAL PRACTICE



Adapted from "Why Environmental Benchmarking will Help Your Hotel", World Wide Fund for Nature, 2005

### KEY BAT PRINCIPLE

Any BAT intervention is best supported by a monitoring programme that constantly evaluates an establishment's environmental impact. Depending on the size of the establishment, this could be a formal Environmental Management System (EMS) such as the ISO14001 programmes, or could be an informal customised system that monitors, records and compares key environmental indicators, such as energy and water usage and waste disposal.

The old adage applies: "What you do not monitor, you can not manage."

"Benchmarking, along with constant monitoring and setting targets, is the only way to ensure that we at Hilton reduce our impact on the world's utilities."

Bob Kennedy, Vice President of Technical Services, Hilton Europe, Africa and Nordic  
Quoted in "Why Environmental Benchmarking will Help Your Hotel", World Wide Fund for Nature, 2005

For more detail on benchmarking your establishment visit: [www.benchmarkhotel.com](http://www.benchmarkhotel.com)



# RECOMMENDED BAT INTERVENTIONS

## GENERAL INTERVENTIONS

Beyond those interventions that specifically refer to energy, water and waste, the following BAT interventions can be considered to be of a general and beneficial nature.

### KEY BAT PRINCIPLE

Due to variability in price, actual consumer costs of these interventions are not included. However, every effort has been made to recommend BAT that are cost effective with short-medium term payback periods (between 2 months to 2 years) .

BEST AVAILABLE TECHNOLOGY	DESCRIPTION & BENEFIT
ENVIRONMENTAL POLICY	The writing of an environmental policy commits an establishment to good environmental practice, focuses management and raises awareness among staff and clients.
GUEST NOTIFICATION	Through such policies, responsibility for environmental action can be formally allocated to staff members, or a staff committee. Notification in rooms raises awareness among guests and requests them to participate in the environmental objectives of the establishment.
STAFF TRAINING	All members of staff should be systematically trained in the environmental objectives and practices of the establishment. This should be repeated and reinforced periodically.
SUSTAINABLE PURCHASING POLICY	By demanding and purchasing sustainable products and services from its suppliers, the influence of an establishment goes beyond its immediate borders.

RIGHT

Need a caption here.



## ENERGY INTERVENTIONS

Hospitality establishments are high energy consumers, especially of electricity. By implementing energy efficiency policies, significant environmental savings can be made.

□The hotel industry consumes over US\$1 billion of energy. Most hotels could reduce energy consumption by 20-40 per cent while maintaining guest comfort.□

□Why Environmental Benchmarking will Help Your Hotel□, World Wide Fund for Nature, 2005



### GENERAL AND PUBLIC AREAS

BEST AVAILABLE TECHNOLOGY	DESCRIPTION & BENEFIT	EASE OF IMPLEMENTATION <small>(Low hanging fruit refers to a simple and cost-efficient intervention)</small>
Behaviour change	The first energy efficiency intervention should involve human behaviour, especially among staff. This requires turning off lights when leaving rooms and buildings; keeping lights clean; turning off computers; etc. as well as purchasing energy efficient goods such as A-rated refrigerators.	Low hanging Fruit
Compact Fluorescent lights	By replacing general incandescent lights with compact fluorescents (CFLs) lights, up to 75% less electricity can be used for the same light output. The bulbs last 6-10 times longer. Note: CFLs are generally not dimmable, so circuit and wiring may need to change.	Low-hanging fruit
Replace 35W or 50W coolbeam downlighting incandescents with 9W or 11W CFLs downlighters	Compact fluorescent downlighters typically use 95% less electricity but provide 30% less light output. The lifetime of the lighters is in excess of 70 000 hours.	Low-hanging fruit
Energy efficient fluorescent tubing	By using a 36W tube with electronic ballast instead of a 40W tube, 25% less electricity will be consumed.	Low-hanging fruit
Electronic equipment	<ul style="list-style-type: none"> <li>✦ Ensure new purchases are energy-star rated.</li> <li>✦ Switch off completely (not □stand-by□ mode when not being used)</li> </ul>	Medium Term □ only suggested for the purchase of new equipment, except if equipment is very inefficient.
HVAC	<ul style="list-style-type: none"> <li>✦ Set HVAC system to low during low-use periods, and at night.</li> <li>✦ Undertake regular maintenance, checks.</li> <li>✦ Replace air-conditioners with fans in guestrooms as they use less energy and are healthier.</li> <li>✦ Install occupancy sensors in rooms to switch off air-conditioner when room not occupied.</li> <li>✦ Install load management systems for the HVAC system, which will reduce the peak load energy use (financial savings will depend on tariff charged).</li> </ul>	Some low hanging fruits (first two) Occupancy sensors and peak load management require more investment.



GUESTROOMS  
BATHROOMS

OUTDOORS

LAUNDRY

BEST AVAILABLE TECHNOLOGY	DESCRIPTION & BENEFIT	EASE OF IMPLEMENTATION <small>(Low hanging fruit refers to a simple and cost-efficient intervention)</small>
Access card system	Switches on the lights, air conditioners, TV etc in the room on entering. When removing the card, all of these are turned off.	Expensive - long term
Solar water heaters	By installing solar water heaters, 40% savings on electricity usage can be achieved for water heating purposes.	Expensive - long term
Lower geyser temperature	Temperature settings for geysers should be 55-60°C allowing for optimum efficiency while maintaining guest experience.	Low-hanging fruit
Digital geyser timers	Digital timers can be accurately set for periods of maximum use in any 24 hours. Can save 10-20% in energy consumption. Do a hot water audit to determine whether this is feasible □ as there may be hotwater use throughout the day.	Medium-term
Insulate geysers and hotwater pipes	Geyser blankets and insulation of pipes prevents unnecessary heat loss. Can save 3-5% energy consumption, depending on existing piping and saves water as desired temperature is quickly reached.	Low-hanging fruit
Reduce pool pump circulation in winter	Pools do not require as much circulation in winter due to less usage. Can save up to 10% less electricity, depending on settings.	Low Hanging Fruit
Daylight switches	Install daylight switches on outside lights that automatically turn-off during daytime.	Low-medium term
Double circuit / motion detectors	Areas requiring extensive lighting can be fitted with double circuits allowing half the lights to be switched off after peak usage time, e.g. after midnight in carparks. Or, fit with motion detectors that turn on with movement.	Low-medium term
Washing machines & laundry	<ul style="list-style-type: none"> <li>✦ Reduce washing temperature on machines to 70°C.</li> <li>✦ Clean lint filters regularly.</li> <li>✦ Make sure each washing machine and dryer load is full.</li> <li>✦ Purchase front loaders rather than top loaders (more efficient i.t.o. water and energy).</li> <li>✦ Consider opportunities for recovery of heat from laundry for HVAC or water pre-heating.</li> </ul>	Behavioural interventions are easy to put in place.



LEFT: The replacing of traditional incandescent bulbs with CFL bulbs can reduce electricity for lighting by as much as 75%.  
RIGHT: Solar water heaters such as this above a guest bungalow at Dusterbrook, saves up to 40% on water heating electricity costs.



## WATER INTERVENTIONS

Hospitality establishments are high energy consumers, especially of electricity. By implementing energy efficiency policies, significant environmental savings can be made.

□Water in Namibia is scarce due to low and highly variable rainfall and high rates of evaporation□

Vision 2030

GENERAL & PUBLIC AREAS  
LAUNDRY  
GUESTROOMS (BATHROOMS)  
OUTDOORS

BEST AVAILABLE TECHNOLOGY	DESCRIPTION & BENEFIT	EASE OF IMPLEMENTATION <small>(Low hanging fruit refers to a simple and cost-efficient intervention)</small>
Push button urinals	Convert automatic water flow in urinals to manual push button flow to achieve 50% water savings	Low-medium term
Reduced laundry load system	By asking long-staying guests to reuse linen and towels, significant water and chemical savings can be achieved.	Low-hanging fruit
Water efficient appliances	When purchasing, choose water efficient laundry appliances.	
Interruptible flushing mechanism on toilets	Controlled flushing mechanisms on toilets can reduce water consumption by 50-70%. Alternatively water displacing objects can be placed in cisterns, which can reduce water consumption by 20-30%.	Low-hanging, but will involve some investment.
Low-flow showerheads	Installation of low-flow showerheads can reduce water usage by 15-30% without detracting from guest experience.	Low-hanging fruit
Tap aerators	Installation of tap aerators on nozzles in basins reduces water usage by 50%. (Note: some taps do not have the thread fittings necessary to install standard aerators, therefore need internal device)	Low Hanging Fruit
Recycling of swimming pool backwash	Use recycled backwash water to top up pool. Collect backwash water in tank and treat with a flocculant that settles impurities. Reduces water usage by 20-30%.	Medium-long term
Swimming pool cover	Cover pool when not in use to avoid unnecessary evaporation.	Low Hanging Fruit
Timing of irrigation	Install drip irrigation wherever possible. Avoid watering in the midday heat and during windy periods. Used timing devices for irrigation that can be turned off during periods of good rainfall.	Short term

### KEY BAT PRINCIPLE

Low-flow showerheads estimated to potentially save 15% water and N\$67 700 per annum in Etosha resorts.  
Source: Cleaner Production Component, □CP Scoping Study for Namibia Wildlife Resorts□, March 2006

BEST AVAILABLE TECHNOLOGY	DESCRIPTION & BENEFIT	EASE OF IMPLEMENTATION <small>(Low hanging fruit refers to a simple and cost-efficient intervention)</small>
Greywater recycling (NOTE: needs special permission in some municipal areas)	The discarded laundry, shower, bath and basin water (excluding kitchen basins) □ greywater - can be collected and recycled for garden irrigation. It is important that this water is pumped immediately onto garden, as it can become a health hazard if stored. Specific water substance testing should be done to prevent long term build up of chemicals in the soil. Can reduce water consumption for irrigation by 25-75% depending on needs.	Medium to long-term intervention
Rainwater harvesting (See above)	The collection of rainwater throughout the year, can be used for irrigation purposes and the filling of swimming pools.	Long-term intervention
Vehicle washing	Clean vehicles with using a bucket system rather than a hosepipe.	Low-hanging fruit
Biological wastewater treatment works	A biological treatment system enables all waste water to be reused for irrigation purposes.	Long-term intervention



LEFT: Recycling of swimming pool backwash water can result in water savings of 20 - 30%. RIGHT: Simple rainwater harvesting techniques, as demonstrated at the Habitat Research and Development Centre (HRDC), provides abundance of spare water capacity for various uses.



## WASTE INTERVENTIONS

The overriding aim of BAT waste interventions is to minimise the amount of waste sent to landfill sites (through reduced consumption, recycling and reuse) and also to reduce the effluent load sent to the wastewater treatment plants. Most waste interventions can easily be achieved through the procurement policy, if this is put in place, then a lot of the waste interventions will automatically follow.

	BEST AVAILABLE TECHNOLOGY	DESCRIPTION & BENEFIT	EASE OF IMPLEMENTATION <small>(Low hanging fruit refers to a simple and cost-efficient intervention)</small>
GENERAL AND PUBLIC AREAS	Non-toxic cleaners	Wherever possible, use environmentally friendly cleaning detergents.	Procurement policy - short-term intervention
	Minimise packaging	Establish returnable packaging systems with suppliers. Buy food items and supplies in bulk whenever possible.	Procurement policy - short-term
	Recyclable bottles	Where possible replace plastic drinking bottles with those that can be returned for recycling, e.g. glass bottles	Procurement policy - short-term
	On-site waste separation and storage	Initiate an in-house recycling programme for cans, paper, plastic etc. Assign the responsibility of an on-site waste facility to a staff member or appoint an external service provider.	Immediate results, but may require some investment.
	Disposal of hazardous waste	Ensure that any hazardous substance is encapsulated before disposal; fluorescent tubing is disposed via proper agents; and oils (vehicle and cooking) are sent to oil recovery agents.	Procurement policy
KITCHEN	Food waste	Food waste can be avoided by not overloading buffets and using returned food for further processing, e.g. jams & chutneys. Surplus food waste can be distributed to pig farmers or some form of composting service. Vegetable matter can be used for in-house composting purposes. Food waste that is edible can be donated to a local food bank or soup kitchen.	Procurement policy
LAUNDRY	Reduce laundry loads	Long-staying guests can reduce the laundry load by not having linen and towels changed every day. This reduces detergent use and effluent load.	Low Hanging Fruit
GUEST BATH-ROOMS	Permanent toiletry containers	Replace disposable soaps, shampoos and lotions with refillable dispensers.	
	Reduce, reuse and recycle	Recycle toner cartridges and other electronic consumables. Cut paper consumption by setting double-sided printing on photocopiers and printers. Set photocopiers so that they require a PIN code or card to operate and trace individual people's paper consumption. Switch from paper to electronic communication (e-mail) wherever possible.	Procurement policy



LEFT: Waste separation and recycling saves money and minimizes landfill disposal.  
 RIGHT: Shampoos, soaps and lotions should be presented in permanent containers rather than plastic throw-away bottles such as these.







# BUILDING SUSTAINABLE TOURISM ESTABLISHMENTS

The construction of new establishments or renovation of existing buildings, offers ideal opportunity to implement BAT from the outset, thereby immediately capitalising on the associated economic benefits without incurring the cost of retrofitting eco-friendly technologies. Sourcing sustainable materials can often prove difficult due to limited demand. The resultant savings, however, make the effort worthwhile and if the hospitality industry can set a trend in sustainable architecture and building, the materials will become more readily available.

RIGHT

The Habitat Research and Development Centre outside Windhoek demonstrates a variety of principles around sustainable building techniques.



ENVIRONMENTAL SAVING	SUSTAINABLE BUILDING TECHNOLOGY AND PRINCIPLE
ENERGY	<ul style="list-style-type: none"> <li>✦ Maximise daylight through appropriate size and placement of windows. Use translucent curtains to maximise light and minimise heat.</li> <li>✦ Make sure all light fittings are energy efficient.</li> <li>✦ Consider low energy (down draught) evaporative cooling systems.</li> <li>✦ Install solar water heaters.</li> <li>✦ Investigate renewable energy options, e.g. wind energy at the coast and solar and/or photovoltaic in Windhoek and inland areas.</li> <li>✦ Ensure proper ventilation (natural) to reduce air conditioning and forced ventilation.</li> </ul>
WATER	<ul style="list-style-type: none"> <li>✦ Install dry self-composting toilets, e.g. "enviroloos" and "econsans".</li> <li>✦ Install rainwater catchment tanks.</li> <li>✦ Landscape gardens with indigenous "water-wise" plants.</li> </ul>
WASTE	<ul style="list-style-type: none"> <li>✦ Reduce embodied energy in building materials by:               <ul style="list-style-type: none"> <li>- Using local or Namibian materials</li> <li>- Reusing recycled or waste materials, e.g. recycled cement bricks.</li> <li>- Incorporating unworked or materials close to their natural state, e.g. compressed soil bricks or sun-dried clay bricks.</li> <li>- Using labour-intensive methods rather than full-factory pre-fabrication.</li> </ul> </li> </ul>
OTHER CONSIDERATIONS	<ul style="list-style-type: none"> <li>✦ Ensure infrastructure such as airstrips, roads and piping are implemented responsibly and that disturbed landscapes are rehabilitated.</li> <li>✦ Wax polished concrete flooring is suitable for indoors.</li> </ul>



## OTHER SOURCES OF INFORMATION

eco Awards Namibia, "Good Practices Handbook", November 2005

Western Cape Department of Environmental Affairs and Development Planning, "Cleaner Production in the Tourism and Hospitality Industry", South Africa, 2006

Pollution Prevention and Abatement Handbook - Part III, "Tourism and Hospitality Development", World Bank, September 2001

"Why Environmental Benchmarking will Help Your Hotel", WWF and International Business Leaders Forum, 2005

The Carbon Trust, United Kingdom has useful online publications for energy savings in hotels:  
[www.thecarbontrust.co.uk](http://www.thecarbontrust.co.uk)

Tourism Concern is a campaign to ensure sustainable and fair global tourism: [www.tourismconcern.org.uk](http://www.tourismconcern.org.uk)

International Tourism Partnership: [www.internationaltourismpartnership.org](http://www.internationaltourismpartnership.org)

Green Hotelier, magazine of sustainable tourism and hospitality: [www.greenhotelier.com](http://www.greenhotelier.com)

eco Awards Namibia: [www.ecoawards-namibia.org](http://www.ecoawards-namibia.org)

Namibia Community Based Tourism Association (NACOBTA): [www.nacobta.com.na](http://www.nacobta.com.na)

Namibian Chamber of Commerce and Industry (NCCI): [www.nccci.org.na](http://www.nccci.org.na)

Hospitality Association of Namibia: [www.HANnamibia.com](http://www.HANnamibia.com)

## GLOSSARY

**BAT** - Best Available Technologies

**Compact fluorescent lamp (CFLs)** - New energy efficient bulbs with internal ballasts regulating the flow of power.

**Embodied energy** - Energy used (and therefore "embodied") in the manufacture and transport of goods, especially building materials.

**Energy-star rated** - International energy rating symbol for domestic appliances.

**HRDC** - Habitat Research and Development Centre - sustainable living demonstration project outside of Windhoek

**HVAC** - Heating, Ventilation and Air Conditioning (this was repeated)

**Incandescent lights** - Traditional light bulbs burning filaments, but energy inefficient.

**Input resources** - Fundamental resources required in the management of a tourist facility, e.g. water, energy and waste disposal.

**LED** - Light-emitting diode

**SOPs** - Standard Operational Procedures, methodologies implementing good management practices.



The eco awards Namibia, with its desert flower emblem, is a recent initiative of the Namibia Tourism Development Programme to award tourism and hospitality establishments that are managed and operated in a sustainable fashion according to a stringent set of criteria. As such it is a local tourism eco label.

eco awards Namibia publish an excellent Good Practices Handbook covering all aspects of hotel and lodge management in Namibia, including conservation, guiding, staff development and social responsibility and human welfare.

For more information visit [www.ecoawards-namibia.org](http://www.ecoawards-namibia.org)

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