



EARTHCHECK

# BENCHMARKING ASSESSMENT REPORT

ATTRACTION BENCHMARKING

**GREEN GROTTO CAVES**  
ST. ANN, JAMAICA



**REPORT DATE: 17 June 2011**

Benchmarking Data Collection Period: 1 April 2010 – 31 March 2011

*The planet deserves more than half measures*

## OVERVIEW

This annual assessment of **Green Grotto Caves** was undertaken against EarthCheck benchmarking indicators and checklists developed for EarthCheck and listed below.<sup>1</sup> They have been carefully selected to track performance in key areas of environmental and social performance impact. Their outcomes which are presented in this report are used by EarthCheck to evaluate whether the operation has reached the standards necessary to pass the benchmarking requirements, as stated in the EarthCheck Benchmarking Policy.<sup>2</sup>

Indicator Measure (Benchmark)		
1	Policy	Policy is produced and in place
2	Energy	Energy Consumption (MJ / Customer)
		Greenhouse Gas Emissions (Scope 1 and Scope 2) (kg CO <sub>2</sub> -e / Customer)
		Green Power (%) <sup>3</sup>
3	Water	Potable Water Consumption (L / Customer)
		Water Savings Rating (Points)
		Recycled / Captured Water (%) <sup>3</sup>
4	Waste	Waste Sent to Landfill (L / Customer)
		Waste Recycling Rating (Points)
		Recycled / Reused / Composted Waste (%) <sup>3</sup>
5	Community	Community Commitment (%)
		Community Contributions Rating (Points)
6	Paper	Paper Products Rating (Points)
7	Cleaning	Cleaning Products Rating (Points)
8	Pesticides	Pesticide Products Rating (Points)
9	Sector Specific	Vehicle Services Completed (%)

<sup>1</sup> Refer to the EarthCheck Sector Benchmarking Indicator (SBI) document for more information. For frequently asked questions (FAQs) about benchmarking or specific help, please log on to 'My EarthCheck' and visit your EarthCheck Benchmarking software.

<sup>2</sup> To meet the requirements stipulated in the EarthCheck Company Standard, the benchmarks for all the submitted EarthCheck indicators need to be at, or better than, the Baseline level. Baseline and Best Practice performance levels are set with reference to the type of activity (registered sector/s) and appropriate national and international data which take into account social, geographical and climatic impacts.

First-time benchmarking operations that fail to meet the minimum requirements (Baseline performance or better) for up to two submitted EarthCheck indicators (with a third indicator within 10% of the Baseline level), will be permitted to pass benchmarking. The operation is however, given a maximum of 12 months to improve performance in at least one of the indicators to Baseline performance or better. If on the next submission this is not achieved without substantiated evidence that the situation was beyond the control of the operation (e.g., occurrence of a natural disaster), then the right to use the appropriate EarthCheck logo will be withdrawn.

As a standard policy, all EarthCheck indicators are continuously reviewed, along with the performance levels which operators have to achieve in order to meet the requirements of the Company Standard. This review takes into account "business-as-usual" changes in practices and equipment, and is used to update where appropriate Baseline and Best Practice levels.

<sup>3</sup> These indicators are for guidance only and do not affect the overall benchmarking evaluation.

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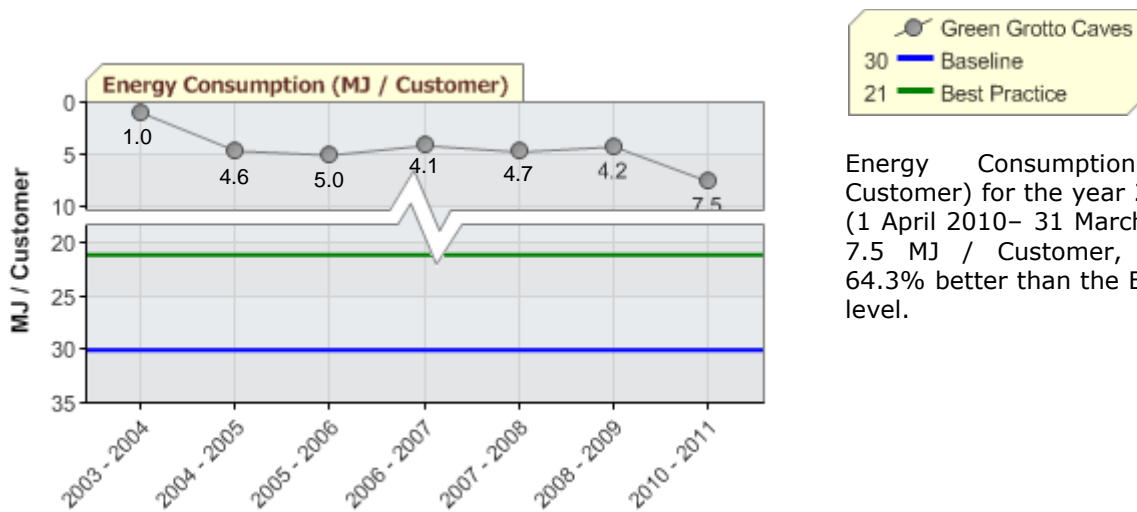
## ATTRACTION PERFORMANCE BENCHMARKS

**Current performance:** Below Baseline ✖ At or above Baseline ✔ At or above Best Practice ★

### 1. Policy ★

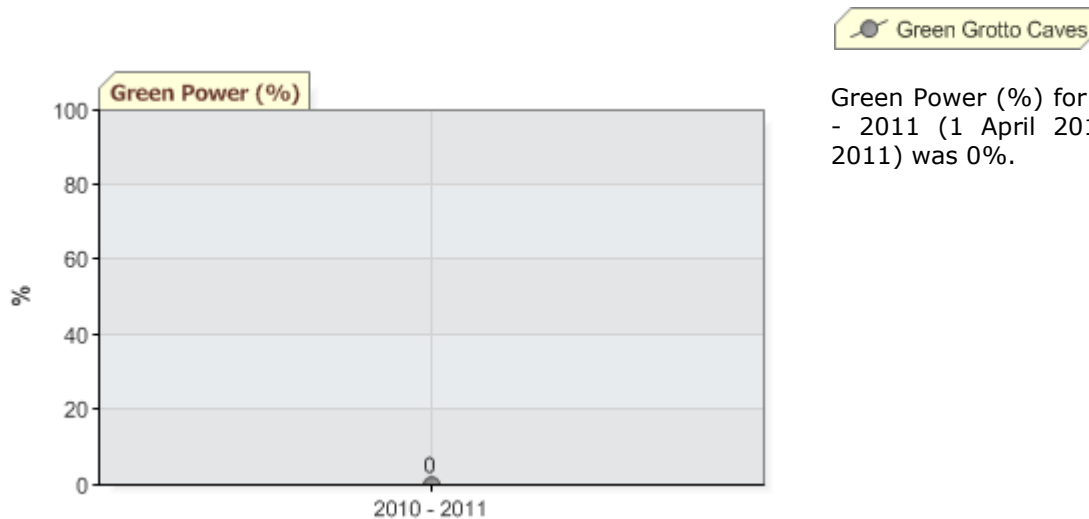
### 2. Energy

#### Energy Consumption (MJ / Customer) ★



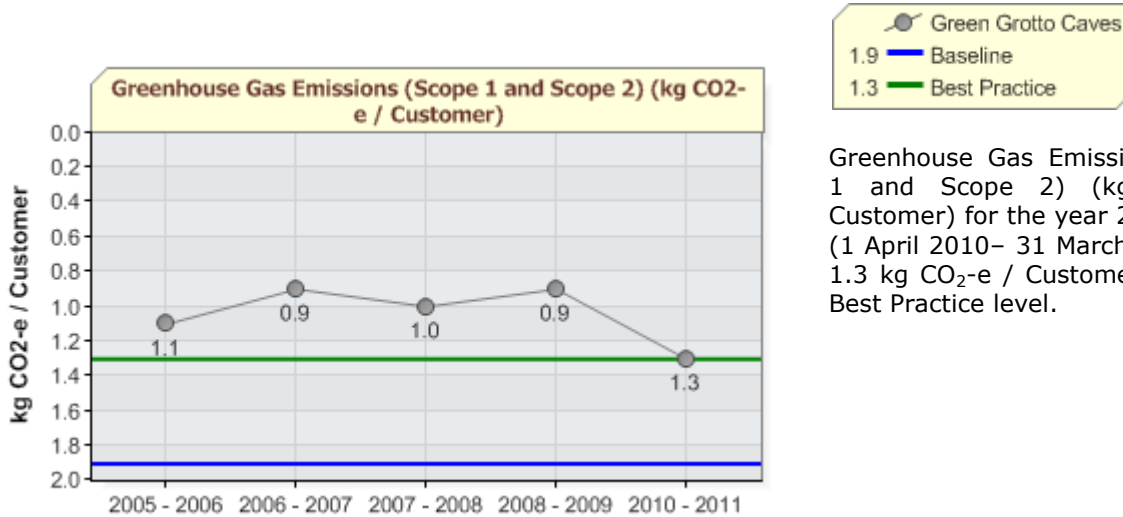
Energy Consumption (MJ / Customer) for the year 2010 - 2011 (1 April 2010- 31 March 2011) was 7.5 MJ / Customer, which was 64.3% better than the Best Practice level.

#### Green Power (%)



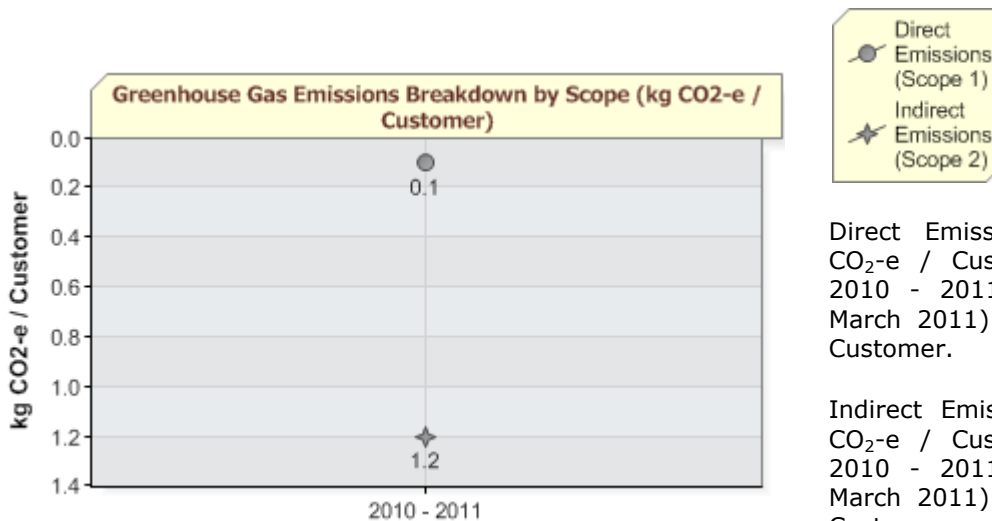
Green Power (%) for the year 2010 - 2011 (1 April 2010- 31 March 2011) was 0%.

## Greenhouse Gas Emissions (Scope 1 and Scope 2) (kg CO<sub>2</sub>-e / Customer) ✓



Greenhouse Gas Emissions (Scope 1 and Scope 2) (kg CO<sub>2</sub>-e / Customer) for the year 2010 - 2011 (1 April 2010– 31 March 2011) was 1.3 kg CO<sub>2</sub>-e / Customer, which is at Best Practice level.

## Greenhouse Gas Emissions Breakdown by Scope (kg CO<sub>2</sub>-e / Customer)



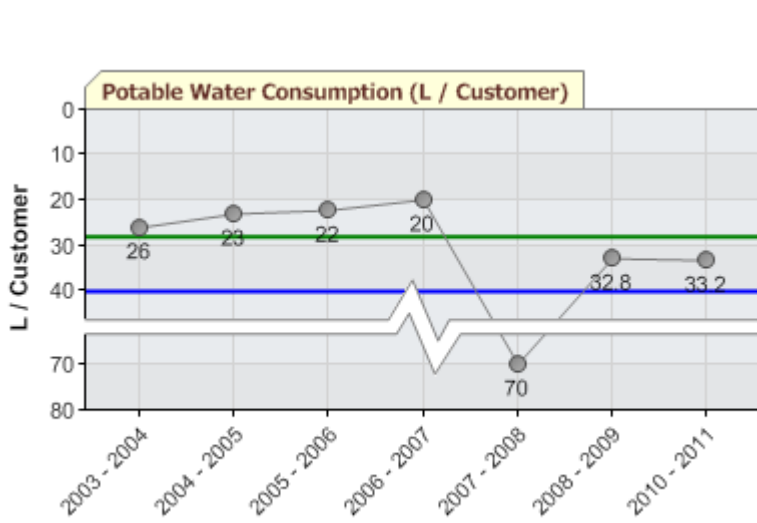
Direct Emissions (Scope 1) (kg CO<sub>2</sub>-e / Customer) for the year 2010 - 2011 (1 April 2010– 31 March 2011) was 0.1 kg CO<sub>2</sub>-e / Customer.

Indirect Emissions (Scope 2) (kg CO<sub>2</sub>-e / Customer) for the year 2010 - 2011 (1 April 2010– 31 March 2011) was 1.2 kg CO<sub>2</sub>-e / Customer.

<b>Direct Emissions (Scope 1)</b>							
<b>Stationary Fuel Combustion</b>							
Type	Quantity	Unit	Energy Consumption (MJ)	CO <sub>2</sub> Emission Estimate (t CO <sub>2</sub> -e)	CH <sub>4</sub> Emission Estimate (t CO <sub>2</sub> -e)	N <sub>2</sub> O Emission Estimate (t CO <sub>2</sub> -e)	Total Emission Estimate (t CO <sub>2</sub> -e)
Motor gasoline	608	litres (L)	19804.9	1.4	0.004	0.004	1.4
Diesel	500	litres (L)	18189.0	1.3	0.004	0.003	1.4
subtotal			37993.9	2.7	0.008	0.007	2.7
<b>TOTAL</b>			<b>37993.9</b>	<b>2.7</b>	<b>0.008</b>	<b>0.007</b>	<b>2.7</b>
<b>Indirect Emissions (Scope 2)</b>							
<b>Purchased Electricity</b>							
Quantity	Unit	% Green Power	Provider	Energy Consumption (MJ)	CO <sub>2</sub> Emission Estimate (t CO <sub>2</sub> -e)	CH <sub>4</sub> Emission Estimate (t CO <sub>2</sub> -e)	Total Emission Estimate (t CO <sub>2</sub> -e)
46991	Kilowatt hour (kWh)	0	Jamaica	169167.6	33.5	0.04	33.7
subtotal				169167.6	33.5	0.04	33.7
<b>TOTAL</b>				<b>169167.6</b>	<b>33.5</b>	<b>0.04</b>	<b>33.7</b>
<b>Greenhouse Gas Emissions (Scope 1 and Scope 2)</b>							
<b>GRAND TOTAL</b>				<b>207161.5</b>	<b>36.2</b>	<b>0.04</b>	<b>36.4</b>

### 3. Water

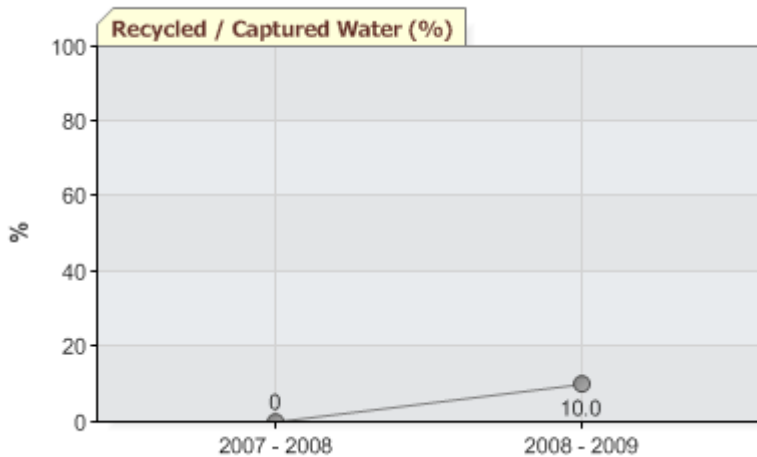
#### Potable Water Consumption (L / Customer) ✓



Potable Water Consumption (L / Customer) for the year 2010 - 2011 (1 April 2010– 31 March 2011) was 33.2 L / Customer, which was 17.1% better than the Baseline level.

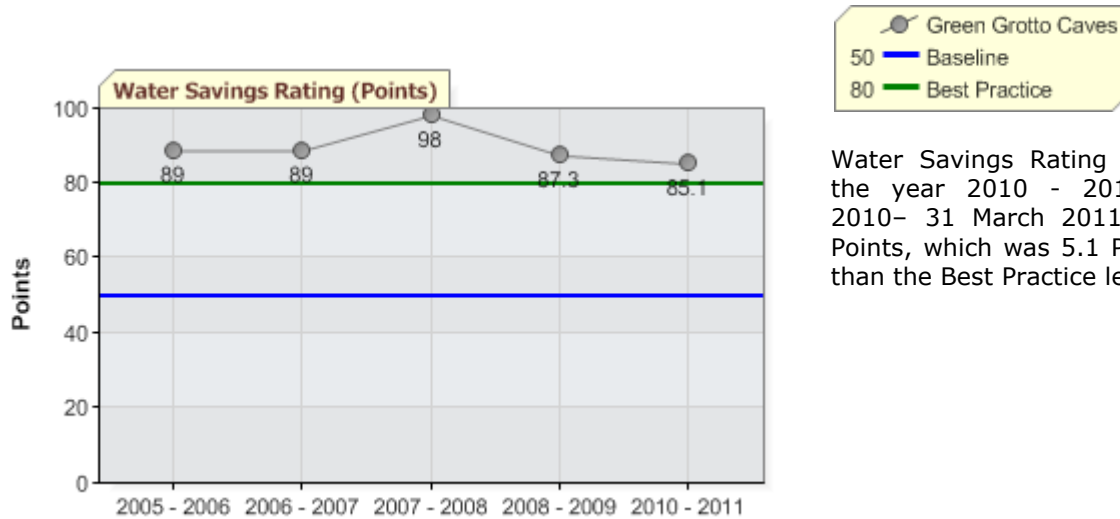
Quantity	Unit	Potable Water Consumption (kL)
917	cubic metres	917.0 kL
	<b>Totals:</b>	<b>917.0 kL</b>

#### Recycled / Captured Water (%)



No data was submitted for the 2010-2011 Benchmarking Period.

## Water Savings Rating (Points) ★

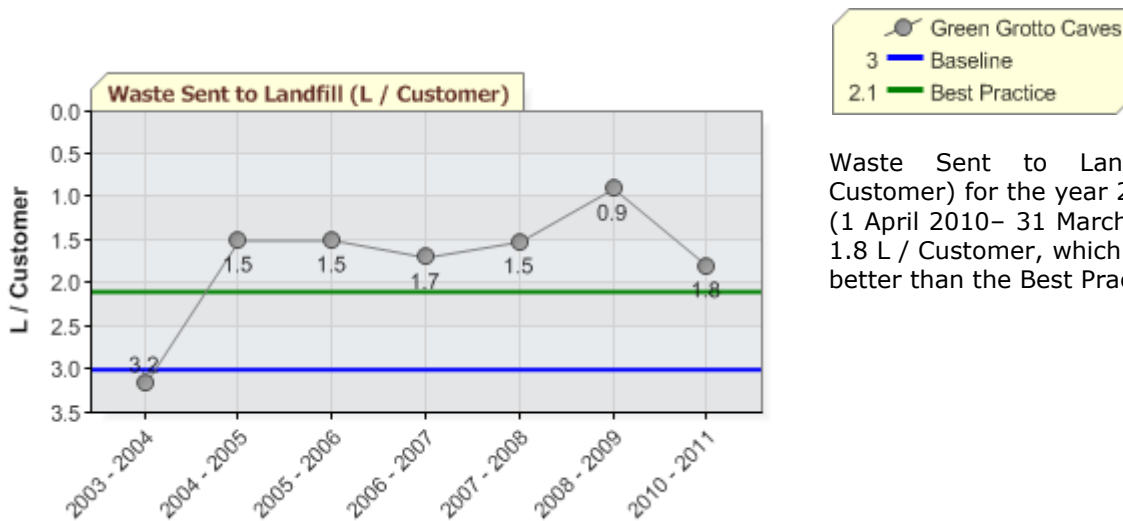


Water Savings Rating (Points) for the year 2010 - 2011 (1 April 2010- 31 March 2011) was 85.1 Points, which was 5.1 Points better than the Best Practice level.

Water Savings Measures	Frequency / Percentage Rating	Water Savings Rating (Points)
Check for leaks	Every week	100.0 Points
Low/dual flush toilets	100%	100.0 Points
Low flow tap fittings	80-99%	88.9 Points
Low flow shower fittings	Not Relevant / Not Available	-
Water sprinklers used after dark	80-99%	88.9 Points
Minimal irrigation landscaping	60-79%	73.9 Points
Use of recycle/grey/rain water	20-39%	58.8 Points
	<b>Overall Rating:</b>	<b>85.1 Points</b>

## 4. Waste

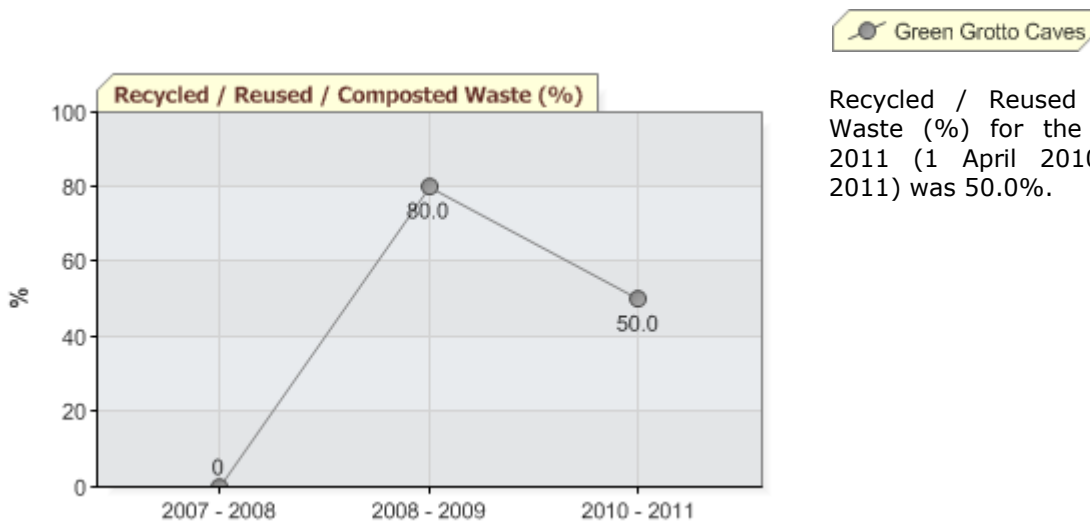
### Waste Sent to Landfill (L / Customer) ★



Waste Sent to Landfill (L / Customer) for the year 2010 - 2011 (1 April 2010- 31 March 2011) was 1.8 L / Customer, which was 14.4% better than the Best Practice level.

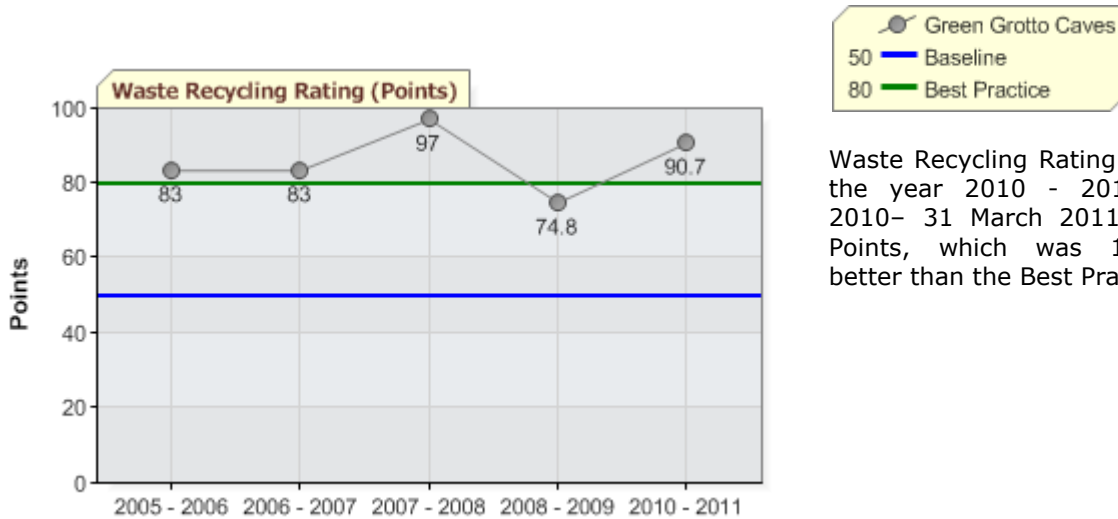
Quantity	Unit	Waste Sent to Landfill (m <sup>3</sup> )
65	cubic yards	49.7 m <sup>3</sup>
<b>Totals:</b>		<b>49.7 m<sup>3</sup></b>

### Recycled / Reused / Composted Waste (%)



Recycled / Reused / Composted Waste (%) for the year 2010 - 2011 (1 April 2010- 31 March 2011) was 50.0%.

## Waste Recycling Rating (Points) ★

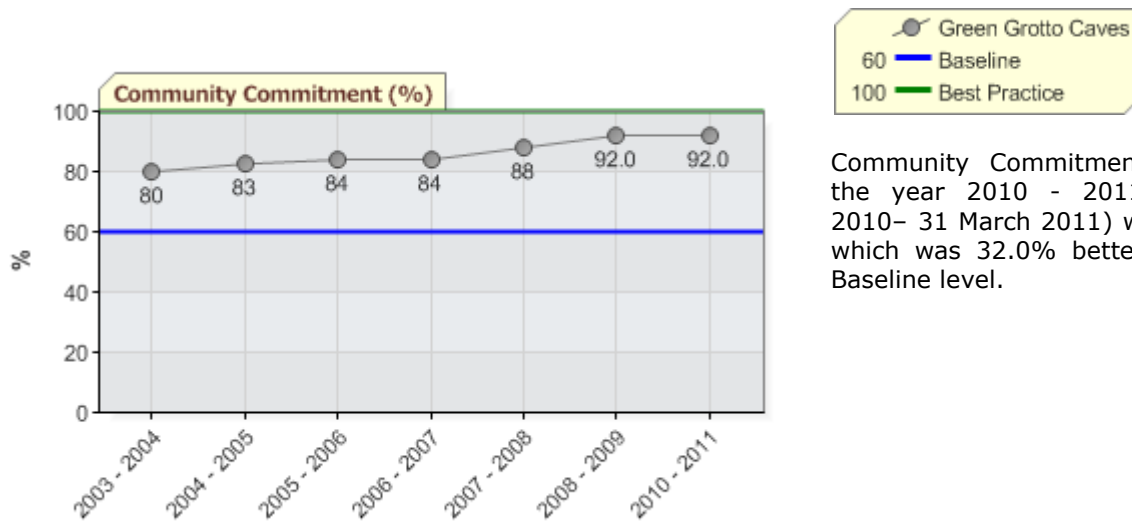


Waste Recycling Rating (Points) for the year 2010 - 2011 (1 April 2010- 31 March 2011) was 90.7 Points, which was 10.7 Points better than the Best Practice level.

Waste Recycling Measures	Frequency / Percentage Rating	Waste Recycling Rating (Points)
Glass	100%	100.0 Points
Paper/card	60-79%	73.9 Points
Iron & steel (ferrous metals)	Not Relevant / Not Available	-
Other metals (non-ferrous)	Not Relevant / Not Available	-
Plastics	80-99%	88.9 Points
Rubber	Not Relevant / Not Available	-
Green waste	100%	100.0 Points
	<b>Overall Rating:</b>	<b>90.7 Points</b>

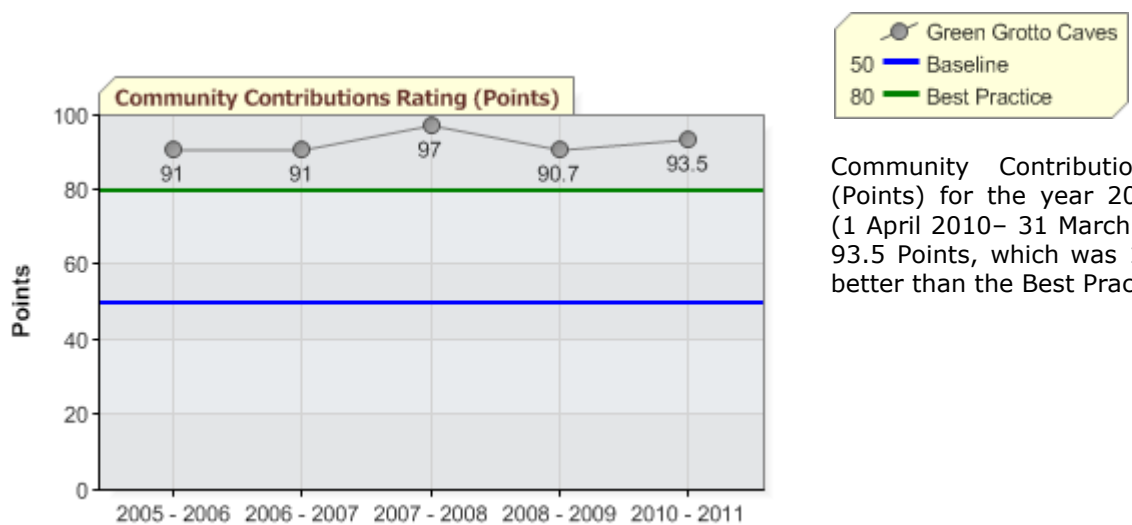
## 5. Community

### Community Commitment (%) ✓



Community Commitment (%) for the year 2010 - 2011 (1 April 2010- 31 March 2011) was 92.0%, which was 32.0% better than the Baseline level.

### Community Contributions Rating (Points) ★

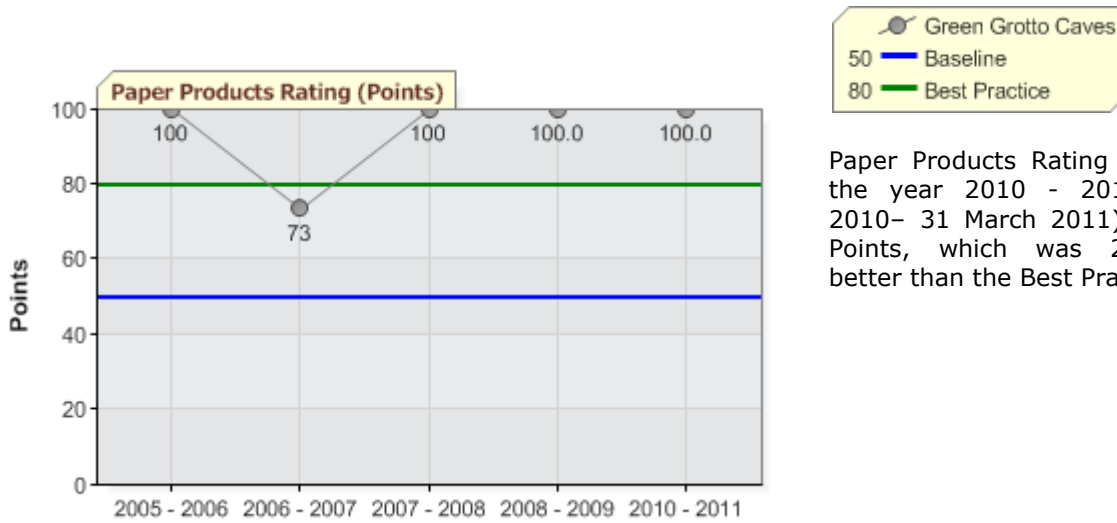


Community Contributions Rating (Points) for the year 2010 - 2011 (1 April 2010- 31 March 2011) was 93.5 Points, which was 13.5 Points better than the Best Practice level.

Community Contributions Measures	Frequency / Percentage Rating	Community Contributions Rating (Points)
Net income spent on sustainability programs	6.0% - 7.9%	73.9 Points
Perishable purchased goods that are of local origin	100%	100.0 Points
Service contracts given to local contractors	100%	100.0 Points
Staff received training on sustainability issues	100%	100.0 Points
	<b>Overall Rating:</b>	<b>93.5 Points</b>

## 6. Paper

### Paper Products Rating (Points) ★

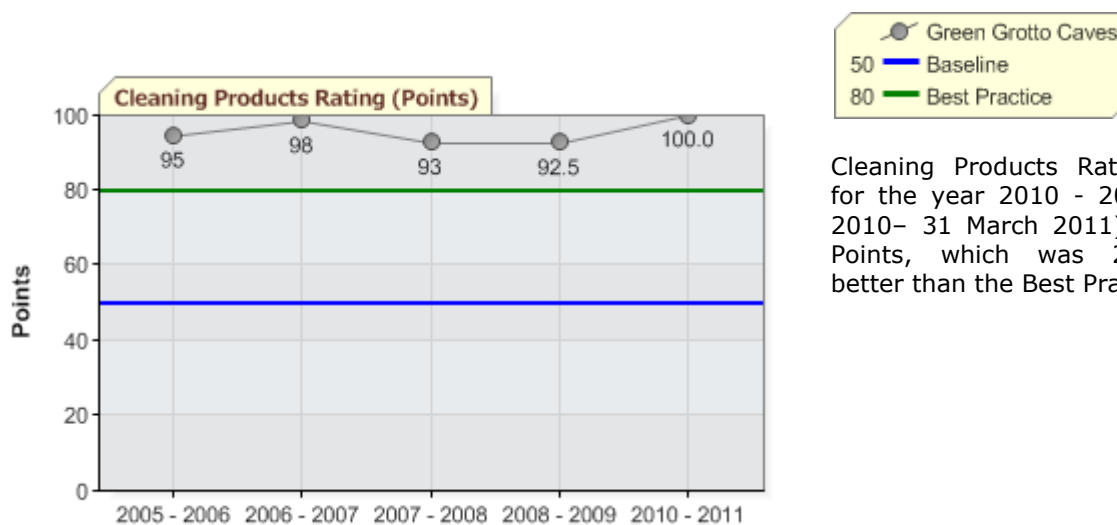


Paper Products Rating (Points) for the year 2010 - 2011 (1 April 2010- 31 March 2011) was 100.0 Points, which was 20.0 Points better than the Best Practice level.

Paper Products Measures	Frequency / Percentage Rating	Paper Products Rating (Points)
Office paper	100%	100.0 Points
Serviettes	100%	100.0 Points
Tissues	100%	100.0 Points
Toilet tissue	100%	100.0 Points
Paper towels	100%	100.0 Points
	<b>Overall Rating:</b>	<b>100.0 Points</b>

## 7. Cleaning

### Cleaning Products Rating (Points) ★

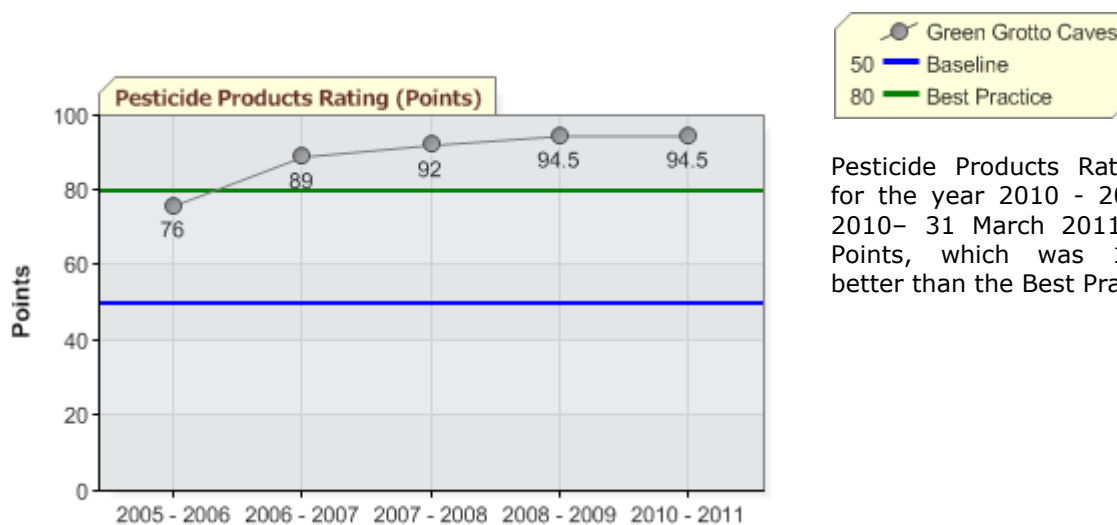


Cleaning Products Rating (Points) for the year 2010 - 2011 (1 April 2010- 31 March 2011) was 100.0 Points, which was 20.0 Points better than the Best Practice level.

Cleaning Products Measures	Frequency / Percentage Rating	Cleaning Products Rating (Points)
Hard floor cleaners	100%	100.0 Points
Carpet cleaners	Not Relevant / Not Available	100.0 Points
Interior surface cleaners	100%	100.0 Points
External surface cleaners	100%	100.0 Points
Glass cleaners	100%	100.0 Points
Detergents	100%	100.0 Points
Personal hygiene	100%	100.0 Points
	<b>Overall Rating:</b>	<b>100.0 Points</b>

## 8. Pesticides

### Pesticide Products Rating (Points) ★

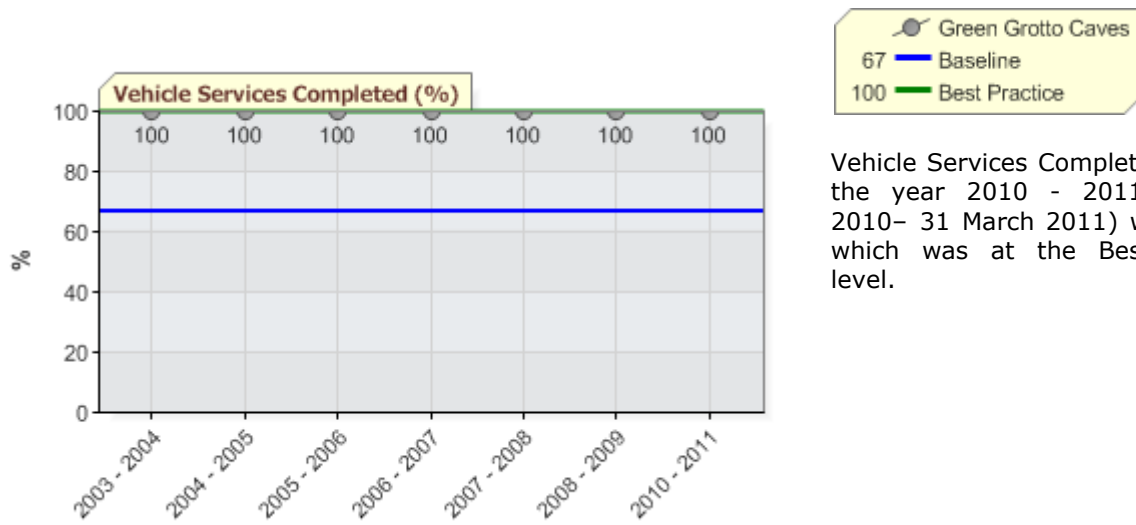


Pesticide Products Rating (Points) for the year 2010 - 2011 (1 April 2010- 31 March 2011) was 94.5 Points, which was 14.5 Points better than the Best Practice level.

Pesticide Products Measures	Frequency / Percentage Rating	Pesticide Products Rating (Points)
Weed killers	80-99%	88.9 Points
Fungal killers	100%	100.0 Points
Rodent killers	80-99%	88.9 Points
Insect killers	100%	100.0 Points
	<b>Overall Rating:</b>	<b>94.5 Points</b>

## 9. Sector Specific

### Vehicle Services Completed (%) ★



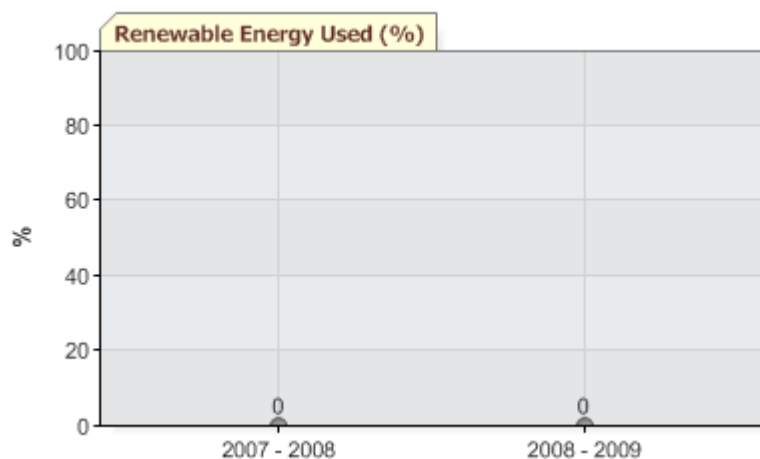
Vehicle Services Completed (%) for the year 2010 - 2011 (1 April 2010- 31 March 2011) was 100%, which was at the Best Practice level.

# HISTORIC BENCHMARKING INDICATORS

## 1. Renewable Energy

Renewable Energy % is no longer a supplementary indicator; it is included here for historical reference.

### Renewable Energy Used (%)



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*The supplied data has been compiled by **Green Grotto Caves** in the prescribed manner, authorised by a senior executive of the company and submitted for an annual assessment.*

## CONCLUSION AND RECOMMENDATIONS

Congratulations, **Green Grotto Caves** has passed the requirements to be recognised as an EarthCheck Benchmarking Attraction.

In addition to having a Sustainability Policy in place, twelve of the assessed EarthCheck indicators are at or above the Baseline level. From the benchmarking data provided, nine indicators, *Energy Consumption, Water Savings Rating, Waste Sent to Landfill, Waste Recycling Rating, Community Contributions Rating, Paper Products Rating, Cleaning Products Rating, Pesticide Products Rating* and *Vehicle Services Completed*, are at or above the Best Practice level, which is an achievement to be very highly commended.

Improvements in all the EarthCheck indicators will not only help the environment, but can also help reduce operational costs. Due to the positive commitment that **Green Grotto Caves** has demonstrated to the environment, the assessors are confident that they can maintain or improve performance, where appropriate and practical, in all indicators. In line with EarthCheck Policy this would enable the **Green Grotto Caves** to continue to meet the benchmarking requirements of the EarthCheck program.

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## APPENDIX

### BENCHMARKING POLICY

**A member benchmarking for the 7th time (and subsequent assessments) is not permitted to fail any EarthCheck™ indicators (excluding supplementary EarthCheck™ indicators).**

### RECYCLED / CAPTURED WATER (SUPPLEMENTARY)

The Benchmarking Assessors have noted that no data was submitted for the indicator *Recycled / Captured Water (Supplementary)*. **Green Grotto Caves** are encouraged to implement measures to collect data and to submit data for all indicators in future assessments.



EARTHCHECK

**Benchmarks Assessed by EarthCheck**

# SUMMARY OF SUPPLIED BENCHMARKING DATA

## Activity Measures

Total Customers 27656

## Supplied Benchmarking Data

### Energy

#### Energy Consumption (MJ / Customer)

Supplied 207161.5 MJ  
 Calculated 7.5 MJ / Customer  
 Baseline 30 MJ / Customer  
 Best Practice 21 MJ / Customer  
 Difference 64.3% better than the Best Practice level

#### Green Power (%)

Supplied 0%  
 Calculated 0%

#### Greenhouse Gas Emissions (Scope 1 and Scope 2) (kg CO<sub>2</sub>-e / Customer)

Supplied 36408.3 kg CO<sub>2</sub>-e  
 Calculated 1.3 kg CO<sub>2</sub>-e / Customer  
 Baseline 1.8 kg CO<sub>2</sub>-e / Customer  
 Best Practice 1.3 kg CO<sub>2</sub>-e / Customer  
 Difference At Best Practice level.

#### Direct Emissions (Scope 1) (kg CO<sub>2</sub>-e / Customer)

Supplied 2735.3 kg CO<sub>2</sub>-e  
 Calculated 0.1 kg CO<sub>2</sub>-e / Customer

#### Indirect Emissions (Scope 2) (kg CO<sub>2</sub>-e / Customer)

Supplied 33673.0 kg CO<sub>2</sub>-e  
 Calculated 1.2 kg CO<sub>2</sub>-e / Customer

### Water

#### Potable Water Consumption (L / Customer)

Supplied 917000.0 L  
 Calculated 33.2 L / Customer  
 Baseline 40 L / Customer  
 Best Practice 28 L / Customer  
 Difference 17.1% better than the Baseline level

#### Water Savings Rating (Points)

Supplied 85.1 Points  
 Calculated 85.1 Points  
 Baseline 50 Points  
 Best Practice 80 Points  
 Difference 5.1 Points better than the Best Practice level

#### Recycled / Captured Water (%)

Supplied  
 Calculated

### Waste

#### Waste Sent to Landfill (L / Customer)

Supplied 49696.1 L  
 Calculated 1.8 L / Customer  
 Baseline 3 L / Customer  
 Best Practice 2.1 L / Customer  
 Difference 14.4% better than the Best Practice level

#### Waste Recycling Rating (Points)

Supplied 90.7 Points  
 Calculated 90.7 Points  
 Baseline 50 Points  
 Best Practice 80 Points  
 Difference 10.7 Points better than the Best Practice level

#### Recycled / Reused / Composted Waste (%)

Supplied 50.0%  
 Calculated 50.0%

### Community

#### Community Commitment (%)

Supplied 92.0%  
 Calculated 92.0%  
 Baseline 60 %  
 Best Practice 100 %  
 Difference 32.0% better than the Baseline level

## Community Contributions Rating (Points)

Supplied	93.5 Points
Calculated	93.5 Points
Baseline	50 Points
Best Practice	80 Points
Difference	13.5 Points better than the Best Practice level

## Paper

### Paper Products Rating (Points)

Supplied	100.0 Points
Calculated	100.0 Points
Baseline	50 Points
Best Practice	80 Points
Difference	20.0 Points better than the Best Practice level

## Cleaning

### Cleaning Products Rating (Points)

Supplied	100.0 Points
Calculated	100.0 Points
Baseline	50 Points
Best Practice	80 Points
Difference	20.0 Points better than the Best Practice level

## Pesticides

### Pesticide Products Rating (Points)

Supplied	94.5 Points
Calculated	94.5 Points
Baseline	50 Points
Best Practice	80 Points
Difference	14.5 Points better than the Best Practice level

## Sector Specific

### Vehicle Services Completed (%)

Supplied	100%
Calculated	100%
Baseline	67 %
Best Practice	100 %
Difference	at the Best Practice level

## DETERMINATION OF BASELINE AND BEST PRACTICE LEVELS

### General

The values for the Baseline and Best Practice levels for each indicator are derived from extensive worldwide research into available and appropriate case studies, industry surveys, engineering design handbooks, energy, water and waste audits, and climatic and geographic conditions.

National and regional data for per capita energy use, greenhouse gas and other emissions, wastes to landfill and water consumption, where available provide background data for normalisation of the expected performance values for per customer or employee, and/or overall performance of an enterprise being benchmarked. They are used to gauge the regional or national situation and environmental performances that an enterprise is based in, and hence what are reasonable levels to expect the enterprise to achieve.

A benchmarking result at, or above, the Baseline level demonstrates to all stakeholders that the enterprise is achieving above average performance. A result below the Baseline level indicates that an enterprise can and should carry out actions that will make beneficial improvements in performance.

### Consideration of Climate

A major determinant of energy consumption in some sectors, primarily those centred on buildings such as accommodation, visitor centres and administration offices will be the dominant climatic conditions in which the enterprise is located. In general, to maintain the same level of indoor comfort, enterprises operating in hot or cold climates will consume more energy than those in temperate climates.

Similarly, it is recognised that in certain sectors a major determinant of potable water consumption will be the climate in which an enterprise is located, in particular those with large grounds and/or significant water-based facilities or activities. That is, enterprises located in hot climates are more likely to consume more potable water than equivalent ones located in cooler climates. Factors that are likely to lead to a higher level of potable water consumption, for example in the accommodation sector, include increased evaporation rates of swimming pools, personal bathing and irrigation demands of grounds. In consideration of this factor, Baseline and Best Practice levels can vary in relation to country location.

### Waste Sent to Landfill

The benchmark indicator used for Waste Sent to Landfill is given in litres as waste bins are usually calibrated by volume, and it has been found that the majority of operations do not have access to the weight of material disposed of. However, if a weight is supplied, standard factors are used to convert from weight (e.g., kilograms (kg)) to volume (e.g., cubic metres (m<sup>3</sup>) or litres (L)). These are: 1 kg (uncompacted waste) = 0.00333333 m<sup>3</sup> or 3.33333 L and 1 kg (compacted waste) = 0.00153846 m<sup>3</sup> or 1.53846 L.

Operations should make note of the level of compaction when submitting data for assessment by EarthCheck.

### Review of Performance Levels

The Baseline and Best Practice performance levels for EarthCheck indicators are continuously reviewed and are likely to change over time. This review by a team of international experts, takes into account "business-as-usual" changes in practices, equipment and facilities, as well as regulations and general improvement trends in performance and procedures. This review is used to update the levels of Baseline and Best Practice, and provides useful feedback to the user of the indicators.

The list below summarises the basic generic rules used to determine Baseline and Best Practice levels for EarthCheck indicators.

- If relevant enterprise sector specific case studies are not available for a type of activity in a designated region, then national averages will be used to ascertain the Baseline level. In this case, the Best Practice level will be set at a minimum of 30% better performance than the Baseline.
- If case study or national data are not available for a specific indicator, then the first enterprise that benchmarks will have its results set as 15% better than Baseline (i.e., half way between Baseline and Best Practice).