



Cape Town_South Africa

African Green City Index

Background indicators

| | |
|---|-------|
| Total population (million) | 3.7 |
| Administrative area (km ²) | 2,500 |
| Population density (persons/km ²) | 1,500 |

Cape Town is the second most populous city in South Africa behind Johannesburg. Its 3.7 million inhabitants occupy a metropolitan area of just below 2,500 square kilometres, which is the second largest area in the African Green City Index behind Lagos. Aside from Pretoria, Cape Town is the least densely populated city in the Index. Located at the northern end of the Cape Peninsula and with a mild climate, it is one of the most popular tourist destinations in Africa. The city is also a base for IT and manufacturing companies, and has undergone a recent construction boom largely due to the 2010 World Cup. The legislative capital of South Africa, Cape Town is also home to the country's parliament.

Cape Town ranks above average overall in

the Index. The city has some of the most robust environmental policies among Index cities in most categories, which bolsters its strong performance. In some categories – such as energy and CO₂, and waste – Cape Town does not perform well on quantifiable metrics, yet scores very well on policy. Its best category performance is in land use, where it is the only city that places well above average. In this category strong policies go hand in hand with abundant green spaces and a relatively low percentage of people living in informal settlements. Underpinning much of Cape Town's policy efforts is the city's Energy and Climate Change Action Plan, which has set multiple targets and recommended various initiatives to improve green performance.

Energy and CO₂: Below average

Cape Town is marked down for having the highest CO₂ emissions per capita from electricity consumption in the Index, producing an estimated 4,099 kg, around four times the Index average of 984 kg. The city relies heavily on electricity produced from coal, which accounts for 93% of total supply. Only 2% of electricity production is generated by renewable sources. Electricity consumption is also relatively high, at an estimated 13.9 gigajoules per capita, compared with the average of 6.4 gigajoules. This is in part due to high consumption in wealthier households and cheap residential electricity prices in recent years that have not encouraged conservation. An estimated 90% of households have access to electricity, compared with the

Index average of 84%. Although Cape Town is marked down for its CO₂ emissions and electricity consumption, the city has the most robust clean energy policies in the Index, including its Energy and Climate Change Action Plan (see "green initiatives" below). It is also making efforts to source more renewable energy, including wind power.

Green initiatives: City officials have drafted a comprehensive Energy and Climate Change Action Plan, which identifies 11 key objectives. While the plan covers a broad range of sectors, including transport and education, the first objective calls for a 10% reduction in electricity use city-wide by 2012; in the second objective the city aims to source 10% of its energy from renewable sources by 2020; and the third mandates a 10% reduction in energy consumption from council operations by 2012. Already 130 projects are under way across the city as a result of the plan. Programmes to achieve its goals include installing 300,000 solar water heaters across the city by 2015 and retrofitting public buildings with energy efficient lights.

Land use: Well above average

With just 1,500 people per square kilometre, versus an overall average of 4,600, Cape Town has the second lowest population density in the Index. It has grown rapidly over the past decade and faces the challenge familiar to other African cities of finding the right balance between environmental sustainability and economic necessity. The city has approached this dilemma proactively, implementing measures to contain urban sprawl that are currently being updated (see "green initiatives"). Home to multiple nature reserves containing some of the world's rarest plant species, Cape Town has the most green

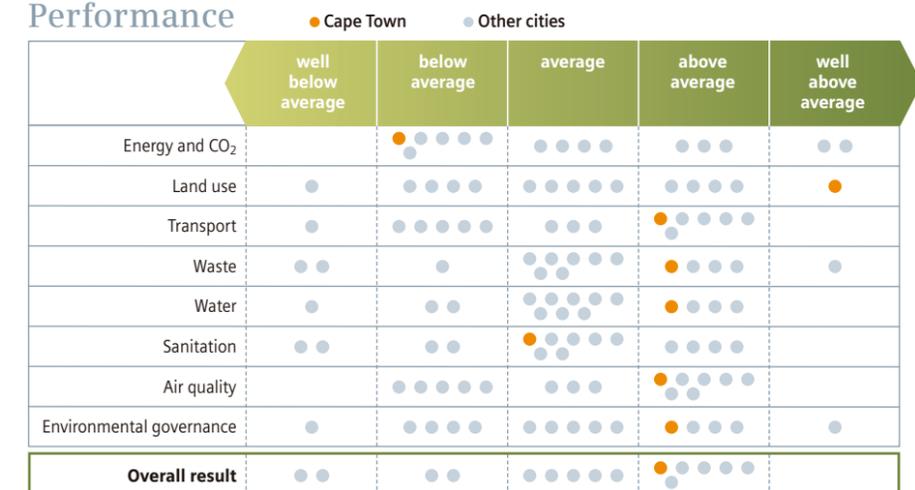
space in the Index. The city boasts an estimated 289 square metres of green space per person, about four times the Index average of 74 square metres. A local environmental resource management department oversees Cape Town's green spaces and environmentally sensitive areas. The city also has a robust set of policies to protect these areas. Furthermore it has the second lowest share of its population living in informal settlements, at an estimated 17% compared with the Index average of 38%.

Green initiatives: As part of the Climate Change Action Plan, the city has updated its development guidelines, which address urban sprawl, among many other issues. The new plan, currently with the Western Cape provincial government for approval, also promotes sustainable building design, construction and renovation. The city is looking to adopt urban planning principles that encourage non-motorised transport and create more open spaces that can be used for recreation.

Transport: Above average

Cape Town has invested US\$5.8 billion over the last six years in developing a new bus rapid transit (BRT) network (see "green initiatives"). As a result, it is among the top cities in the Index for the length of superior forms of transport, such as metro, tram or BRT lines. The city's superior public transport system measures 0.11 km per square kilometre, compared with the Index average of 0.07 km. Transport, however, is still dominated by private vehicles, taxis and minibuses, and congestion remains a challenge. While there is an extensive network of suburban rail lines, these are not adequately maintained and rapidly growing areas in the west of the city are poorly served. New investment in this network

Performance



The order of the dots within the performance bands has no bearing on the cities' results.

has been announced, although it will be driven by the national government. The city's performance in this category is bolstered by policies aimed at encouraging commuters to take greener forms of transport and by the existence of dedicated mass transport lanes.

Green initiatives: In 2009, ahead of the World Cup, the city launched the first phase of its new BRT network, known as MyCiti. The first phase included an inner city loop, a commuter service route serving the West Coast, and links to the airport. By 2012 a network of nine permanent BRT bus routes is expected to be launched in the central city. By 2013 it is hoped that an express service between the townships of Mitchells Plain and Khayelitsha on the Cape Flats will link to the central business district.

Waste: Above average

Waste generation in Cape Town on a per capita basis is the second highest in the Index, at 573 kg, compared with the Index average of 408 kg. Despite this, the city's good performance in this category is due to strong policies relative to the other 14 cities in the Index. Cape Town monitors and enforces standards for industries to properly dispose of hazardous waste, for example. In addition, a number of schemes are in place to reduce waste generation (see "green initiatives"). Recycling facilities are widely available, with on-site and central collection points, including several community drop-off facilities for large items, construction rubble and recyclables. Nevertheless, population growth is putting pressure on waste management and the city is rapidly running out of land-fill space at its three main sites.

Green initiatives: The city has a number of ongoing initiatives and plans to reduce waste generation. It is running a pilot scheme in some suburbs to have residents separate waste from recyclables before collection. There is also an Integrated Waste Exchange website, which allows businesses and the public to exchange potentially useful waste materials. Furthermore, under Cape Town's Extended Producer Responsibility policy, city procurement guidelines favour companies that operate take-back programmes for items they sell, such as used printer cartridges and glass bottles. In addition, the city has published a detailed Smart Living Handbook encouraging residents to reduce, reuse and recycle waste.

Water: Above average

Cape Town performs very well for its policies related to water quality and sustainability. A code is in place to monitor and sustain surface

water quality, and industrial water pollution standards are enforced. The 2011 Water Services Development Plan sets a target to provide water to all residents by financial year 2015/2016. However, with an estimated 91% of residents having access to potable water (which is on par with the Index average), Cape Town will need to make considerable progress in this area in the coming years. While the city consumes 225 litres of water per capita each day, compared with the Index average of 187 litres, it aims to reduce water consumption to 180 litres per capita per day by 2014. To this effect, the city is targeting water leakages. Although it already has the lowest leakage rate in the Index, losing 10% of volume, compared with the Index average of 30%, Cape Town is nonetheless try-



access figures are lower, especially in informal settlements. When it comes to wastewater treatment, rapidly developing commercial and residential areas have placed a strain on many dated treatment facilities. The city has acknowledged the issue and steps are being taken to upgrade facilities (see "green initiatives" below). Already, Cape Town is one of six cities in the Index that has a policy aimed at setting standards for treatment and monitoring of wastewater.

Green initiatives: The city has a rolling ten-year programme to upgrade its wastewater treatment facilities by 2014. Its goal is to bring all wastewater treatment facilities close to national wastewater management standards. Some progress has already been made and in

tor is a meteorological condition known as low-level temperature inversion, whereby cooler air just above the ground becomes trapped under a layer of warm air and cannot rise until the wind blows. During winter, when the region is less windy, brown-coloured smog hovers over the city. Cape Town has announced a goal of becoming the African city with the cleanest air and is aware that implementation of current policies will help it achieve this vision.

Green initiatives: The city's 2005 Air Quality Management Plan established 11 objectives to control air pollution. The plan includes increased monitoring, improving air quality, specifically in informal areas, stepping up enforcement of existing air quality legislation and limiting vehi-

ing to improve the efficiency of its water system (see "green initiatives" below).

Green initiatives: The city has an ongoing programme to help residents of poorer households reduce high water bills by fixing water leaks themselves. The city provides information booklets with practical information on how to fix leaks, as well as promotional flyers printed in English, Afrikaans and Xhosa, three of the country's 11 official languages. In addition, more than 45,000 water meters have been installed in houses since the end of 2010 to alert owners when water consumption has reached unaffordable levels.

Sanitation: Average

An estimated 94% of Cape Town's population has access to sanitation, according to government figures, which is above the Index average of 84%. However, some studies have suggested

2010, eight of Cape Town's 23 wastewater facilities were given the Department of Water and Forestry's "Green Drop" award for high standards in wastewater management.

Air quality: Above average

Cape Town has the most robust clean air policies in the Index, with ongoing air monitoring at 13 sites around the city and public information campaigns. Air quality checks are made at various locations throughout the city and most of the air pollutants highlighted in the Index, including sulphur dioxide, nitrogen dioxide, suspended particulate matter and carbon monoxide, are measured. Despite this, air pollution levels in Cape Town are high, especially in informal areas. Air pollution is caused by a number of factors, including vehicle emissions, smoke from wood or coal-burning fires, industrial processes and wind-blown dust. Another contributing fac-

cle emissions. A diesel vehicle testing programme is under way whereby traffic officials have the power to conduct spot checks. The council has also produced a booklet explaining what residents can do to reduce air pollution.

Environmental governance: Above average

The city has conducted an environmental baseline review for areas such as water and sanitation, waste, energy, and climate change within the last five years. Regular reports are also published on green performance and progress. Environmental policy is overseen by the city government. Its Environmental Resource Management (ERM) department is directly responsible and works in close collaboration with other core departments such as Electricity, Water and Sanitation, Transport, Solid Waste Management, and City Health. There are committees to address energy issues and climate change, and they often collaborate across departments under named remits such as "energy security" and "carbon mitigation".

Green initiatives: Cape Town runs environmental awareness trainings, including sessions for 23,000 city staff members on how to implement sustainability advice contained in the Smart Living Handbook. Officials have proposed building a Smart Living Centre that would include exhibits and educational activities for the public relating to sustainability. The proposal is still at the planning permission stage, but organisers have proposed several facilities within the centre, including an organic farmers' market and a recycling centre.

Quantitative indicators

| Category | Indicator | Average | Cape Town | Year* | Source |
|----------------------------|---|---------|----------------------|-------|---|
| ENERGY and CO ₂ | Proportion of households with access to electricity (%) | 84.2 | 89.7 ^e | 2009 | General Household Survey 2009 |
| | Electricity consumption per capita (GJ/inhabitant) | 6.4 | 13.9 ^e | 2009 | City of Cape Town, Electricity Department |
| | CO ₂ emissions from electricity consumption per person (kg/person) | 983.9 | 4,098.6 ^e | 2006 | State of Environment Report 2008 |
| LAND USE | Population density (persons/km ²) | 4,578.1 | 1,509.5 | 2009 | EIU calculation |
| | Population living in informal settlements (%) | 38.0 | 17.0 ^e | 2009 | City of Cape Town, Environmental Resource Management Department |
| | Green spaces per person (m ² /person) | 73.6 | 289.5 ^e | 2010 | City of Cape Town GIS data |
| TRANSPORT | Length of mass transport network (km/km ²) | 2.7 | 1.9 ^{1e} | 2010 | Golden Arrow Bus Company |
| | Superior public transport network (km/km ²) | 0.07 | 0.11 ² | 2010 | Cape MetroRail & MyCiti BRT |
| WASTE | Waste generated per person (kg/person/year) | 407.8 | 572.9 | 2010 | City of Cape Town Solid Waste Minimisation and Disposal Statistics Database |
| WATER | Population with access to potable water (%) | 91.2 | 91.4 ^e | 2009 | General Household Survey 2009 |
| | Water consumption per person (litres per person per day) | 187.2 | 225.2 | 2009 | City of Cape Town, Environmental Resource Management Department |
| | Water system leakages (%) | 30.5 | 10.0 ³ | 2009 | City of Cape Town, Environmental Resource Management Department |
| SANITATION | Population with access to sanitation (%) | 84.1 | 94.1 ^e | 2009 | General Household Survey 2009 |

All data applies to Cape Town unless stated otherwise below. * Where data from different years were used only the year of the main indicator is listed. e = EIU Estimate. 1) Number of bus routes (182) multiplied by average length of route (26.1 km). 2) There are no subway or tram lines. 3) Unaccounted for water = 24.5%