Sustainability Management Plan: Rio 2016™ Olympic and Paralympic Games

March 2013 - version 1

Sustainability Management Plan: Rio 2016™ Olympic and Paralympic Games

1 Introduction

In 2016, the biggest sporting event in the world will take place in South America for the first time. The city of Rio de Janeiro will have the honour of hosting the Olympic and Paralympic Games. During four weeks of competition, athletes will compete for Olympic and Paralympic medals in more than 300 events, which will be watched around the world.

The infrastructure required for the Games is impressive in every way. There will be over 100,000 people directly involved in delivering the Games, including 70,000 volunteers, and millions will be directly or indirectly involved in the city, around the country and across the continent. More than 15,000 athletes from some 205 nations are expected to participate, plus thousands of support personnel, media professionals, sports fans and tourists from the four corners of the globe.

The Games will be held in four competition zones across the city — Barra da Tijuca, Copacabana, Maracanã and Deodoro — a strategy that is aligned with the city's wider development plan. Indeed, the Games have been a catalyst for the realisation of numerous urban improvements in Rio de Janeiro.

The goal of the Rio 2016™ Organising Committee for the Olympic and Paralympic Games (Rio 2016™) is to deliver technically excellent Games with memorable celebrations that will promote the image of Brazil worldwide. The project is a driving force for sustainable social and urban transformations and promises to contribute to the growth of the Olympic and Paralympic Movements.

To achieve these sustainable transformations, the organisers of the Games are committed to making sustainability criteria an integral part of the management cycle of the Games, from design and planning through to implementation, review and post-event activities. The principles that guide this integration are: responsibility, inclusion, integrity and transparency.

Thus, the goal is not only to reach levels of excellence in our deliveries, but also to show leadership by setting new standards for sustainable management at events throughout the country and the region.

Moreover, because it deals with the sustainability of an area where there is constant evolution as new technologies and working methods are developed, Rio 2016™ has made a commitment to continuous improvement, which includes compliance with applicable Brazilian legislation and international conventions. Updated versions of this document will be published whenever necessary.

Comments and suggestions from all interested parties are welcome and can be sent to: sustentabilidade@rio2016.com

2 Vision, mission, values and principles

The vision and mission of the Rio 2016™ Games were inspired by the global planning strategy of the city and country in the long-term. They are also based on the motivation behind Rio's bid to host the Games: "*the desire to combine the power of Olympic and Paralympic sports with the enthusiasm and festive spirit of the residents of Rio – Cariocas – to bring sustainable advantages to Brazil and the city of Rio de Janeiro.*"[1]

VISION

All Brazilians uniting to deliver the greatest festival in the world, proudly advancing through sport, our national promise of progress.

MISSION

To deliver excellent Games, with memorable celebrations, that will enhance the global image of Brazil and promote sustainable social and urban transformations through sport, contributing to the growth of the Olympic and Paralympic Movements.

VALUES

Celebration: the passion, spontaneity and youthful spirit which Rio is known for will permeate through all the activities, involving all participants and spectators in festive, high-energy celebrations.

Ability to deliver: through organisation, innovation and positivity, we will work to create a lasting legacy that will bring positive changes and tangible benefits to all involved with the Games.

Participation: teamwork, solidarity, integration and hospitality are guidelines for the delivery of inclusive Games that will celebrate diversity and accessibility.

1 Rio 2016 Candidature File, volume 1, page 18.

The Rio 2016™ Games embrace the values of the Olympic and Paralympic Movements. The Olympic values are **friendship**, **respect** and **excellence**. The Paralympic values are **courage**, **determination**, **inspiration** and **equality**.

PRINCIPLES

The Rio 2016™ Olympic and Paralympic Games are governed by the principles defined in the Brazilian regulation ABNT NBR ISO 20121 for the sustainability management systems for events. These are:

Responsibility: we will take care to conduct all of our social, environmental and economic activities responsibly. We will seek a balance between economic considerations, a reduced negative environmental impact and the promotion of social benefit in everything we do.

Inclusion: we will strive for a respectful relationship with all interested parties, regardless of race, sex, age, colour, religion, sexual orientation, culture, national origin, income, or mental, intellectual, sensory or physical impairment, or any other possible grounds for potential discrimination.

Integrity: we will base our actions on ethical principles, consistent with international standards of behaviour.

Transparency: we will communicate in a clear, accurate, timely and honest manner about our activities that affect society, the economy and the environment, regularly publishing the results of the decisions taken and their impacts.

3 Organising the Games

Organising the Olympic and Paralympic Games is a complex operation involving a number of private, public, international and domestic institutions. At the core of the organisation of the Games are:

International Olympic Committee (IOC): a private sector organisation, the supreme authority of the Olympic Movement. Every four years it selects the city that will host the Games.

International Paralympic Committee (IPC): a private sector organisation, responsible for the Paralympic Movement.

Rio 2016™ Organising Committee for the Olympic and Paralympic Games (Rio 2016™): A Brazilian private, non-profit sports association created solely to plan, promote and stage the 2016 Olympic and Paralympic Games. Coordinates all those who work for the Games: paid staff, volunteers and suppliers.

Federal, state and municipal governments: responsible for infrastructure works and public services.

Olympic Public Authority (OPA): a public entity created specifically to coordinate and integrate the work of the three levels of government in the provision and operation of the infrastructure needed for the Games.

In a simple analogy, if the Games were a stage play, Rio 2016™ would be responsible for the production and staging of the play, and the governments and the APO would be responsible for building the theatre, while the IOC and IPC would be the authors of the screenplay.

The life cycle of the organising process of the Games is composed of three main phases:

Preparation phase: includes the construction of permanent infrastructure, venues and facilities; detailed operational planning; renovation of existing venues and facilities; construction of temporary venues and facilities; human resources development; legacy planning.

Operational phase: starts a few months before the Olympic Games. Along with the Olympic and Paralympic competitions themselves, includes cultural and educational activities; test events; the opening and closing ceremonies; disassembly of the venues and facilities.

Legacy phase: after the Games, the work continues to ensure lasting positive transformations that maximise the social, economic, environmental and sporting benefits of hosting the Games.

4 Scope

4.1 SCOPE OF THE SUSTAINABILITY MANAGEMENT PLAN

The 2016 Games were planned from the beginning to give impetus to the realisation of the long-term aspirations of Rio de Janeiro of improving the social, physical and environmental fabric of the city, and to establish new milestones for large events in South America.

The Rio de Janeiro bid committee studied the improvements that have benefited other host cities and committed itself to organising Games that would leave a sustainable legacy.

In 2008, the Special Committee on the Environment was formed with representatives of the federal, state and municipal levels of government, the Brazilian Olympic Committee and representatives of civil society [2]. The work of this committee resulted in an agenda structured around nine issues that were incorporated into a specific chapter on the environment in the Candidature File[3]:

1. Water treatment and conservation
2. Environmental awareness
3. Use and management of renewable energy
4. Games neutral in carbon, air quality and transport
5. Protection of soils and ecosystems
6. Sustainable design and construction
7. Reforestation, biodiversity and culture
8. Shopping and ecological certification
9. Solid waste management

2 The Special Committee on the Environment is composed of: federal government: the Ministries of the Environment, Sport and Cities. State government: State Secrtetariat of the Environment, the State Environmental Institute, the State Water and Sewage Company, the State Sectetariat of Tourism and Transport. Municipal government: the Pereira Passos Institute, the Municipal Secretariat of the Environment, the Cabinet of Mayor Eduardo Paes, the Municipal Urban Cleaning (trash) Company, the Municipal Urbanisation Secretariat. The Federal University of Rio de Janeiro (COPPE/CentroClima). The Federal University of São Carlos (INOVA). ICLEI. PNUMA. Manglares. Lagoa Viva. Fundação Clinton. Ecologus. Green Building Council Brasil.

3 Rio 2016 Candidature File, volume 1, page 92.

In addition to this nine-point environmental agenda, various other commitments to the social and economic dimensions of sustainability were included in other chapters and volumes throughout the Candidature File and documents that followed in the form of proposed actions and commitments such as the Host City Agreement (HCA).

The Candidature File determined that a subsequent Sustainability Management Plan (SMP) would be prepared that discussed the issues in greater detail, proposed actions and commitments by governments in the form of action plans and the articulation of an integrated plan of work.

This technical document, already anticipated in the candidacy, lays the foundation for the integration of principles, actions and projects related to sustainability in the planning and operation of the Rio 2016™ Games.

This plan was based on the original action plans and commitments established in the Candidature File and it continually incorporates and builds on these as, not just the projects and programmes of Olympic and Paralympic Games, but also sustainability as a theme itself, evolve to include new practices, technologies, international standards and legislation at the federal, state and local levels.

Presented below are the specific themes of the strategic objectives. These are in turn linked to actions, projects or action plans. Milestones are also selected for each specific goal.

The three strategic objectives correspond to those proposed in the application and correspond to the principles of sustainable development ratified by the United Nations Conference on the Environment and Development Rio 1992. These are:

- **Planet:** reducing the environmental impact of the projects relating to the 2016 Games, leaving a smaller environmental footprint.
- **People:** planning and delivery of the 2016 Games in an inclusive manner, offering access to everyone.
- **Prosperity:** contributing to the economic development of the state and city of Rio de Janeiro and planning, generating and reporting on projects related to the 2016 Games responsibly and transparently.

The three strategic objectives are broken down into nine themes, grouped by similarity and complementarity with the infrastructure programmes that are the responsibility of the governments and the operating projects that are the of the Rio 2016™ Organising Committee. Table 1 shows the nine themes and their correspondence with the three strategic objectives[4].

TABLE 1: THE APPLICATION OF THE PRINCIPLE OF MATERIALITY

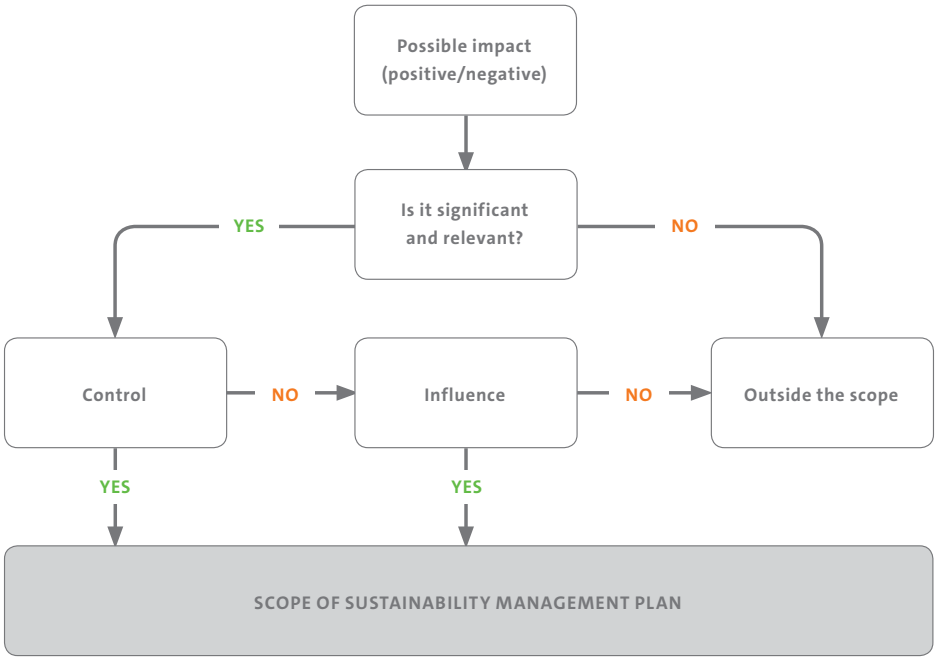
STRATEGIC OBJECTIVE	Theme
1. Planet: Reduced environmental footprint	1.1 Transport and logistics
	1.2 Sustainable design and construction
	1.3 Environmental conservation/clean-up
	1.4 Waste management
2. People: Games for all	2.1 Involvement and awareness
	2.2 Universal access
	2.3 Diversity and inclusion
3. Prosperity: Responsible and transparent management	3.1 Sustainable supply chain
	3.2 Management and reporting

4 Appendix 1 shows the correspondence between the nine issues from the Candidature File and the nine themes in the Sustainability Management Plan.

THE APPLICATION OF THE PRINCIPLE OF MATERIALITY

The materiality principle was used in the determination of the scope of the Sustainability Management Plan. In other words, the relevant issues under the control or influence of the Rio 2016™ Organising Committee, as well as the government agencies directly involved in its organisation, according to the organisation chart shown below (figure 2), were included.

FIGURE 2 - ANALYSIS OF MATERIALITY



Issues of greater relevance have the potential to have a high impact (positive or negative), caused by the organisation and delivery of the Games, and may cause harm or benefit on a significant scale.

A survey of the initial set of impacts to be evaluated was based on the following:

- The Rio 2016™ Candidature File
- The sustainability management plans of previous Olympic and Paralympic Games organising committees
- National and international sustainability norms and standards (ABNT NBR ISO 20121 for sustainability management at events and the GRI Global Reporting Initiative, Event Organisers Supplement)
- National, state and local regulations relating to the environment and sustainability
- Emerging issues in social networks and in the press related to the Games
- Consultations with different operational areas of Rio 2016™
- Consultations with managers of public agencies involved in the organisation of the Games
- Consultations with other clients[5] of the Games

5 The clients of the Games are the parties directly interested in the holding of the Games. These are: 1) athletes; 2) National Olympic and Paralympic Committees; 3) the Olympic and Paralympic family; 4) the media; 5)broadcasters; 6) spectators; 7) commercial partners; 8) workforce; 9) International Sports Federations.

4.2 SCOPE OF THIS DOCUMENT

The Sustainability Management Plan (SMP) is a live document that will be continually updated, taking into account the development of projects and programmes, as well as comments and suggestions received from stakeholders. Updated versions will be posted as necessary.

This first version of the SMP establishes the first step towards integrating sustainability throughout the stages of preparation, operation and legacy of the Games, including what has been agreed so far between the parties.

For each of the nine thematic objectives, specific programmes, projects, activities and progress indicators will be specified and listed and monitored throughout the process.

In the spirit of honest communication, this paper presents openly the main constraints (limitations and restrictions) to consider:

- The installed capacity of the market and the infrastructure. Although the Games represent an opportunity to develop and improve the market and the infrastructure, this development should take into consideration post-games demand;
- The stage of maturity of new technologies, products and services. The Games can act as a catalyst for the adoption of innovations, but they must be robust enough to cope with the scale and inflexibility of deadlines, as well as to adapt to the requirements of security and athletic performance at the event;
- Respect for budgets. Respecting the budget does not mean cutting sustainability requirements to lower costs, it only means that economic viability (based primarily on total acquisition cost[6]) is considered an integral part of the sustainability equation;
- Ability to control versus influence. The commitment of the organisers to the projects and programmes listed here is sufficient to ensure the success of a significant portion of these commitments. However, many of the goals established in this SMP depend on decisions of others, changes in behaviour or other factors beyond the control of the entities directly involved in the organisation of the Games. In these cases, the potential for inspiration and the power of attraction of the Games will be mobilised to influence and encourage change.

A later version of this plan is scheduled for the first quarter of 2014.

In summary, for the preparation of this SMP, the mapping, assessment and alignment of all the commitments made so far was carried out and integrated into a feasible and realistic, but ambitious plan with concrete actions outlined for all planned activities.

The results obtained along the journey towards the Games will be communicated periodically in two ways:

- Twice-a-year sustainability reporting, according to the standards of the GRI (Global Reporting Initiative, Event Organisers Supplement)
- Report on the Impact of the Olympic Games (OGI), with medium/long-term milestones

6 The total costs of acquisition, installation, use, maintenance, modification and disposal of a product or service during its life-cycle.

© Riotur / Alexandre Macieira

5 Planet: reduced environmental footprint

One of the strategic objectives of the SMP is to lessen the environmental impact of projects related to the 2016 Games, leaving a smaller environmental footprint from their preparations and operations.

Implicit in the organisation of an event of the size and complexity of the Olympic and Paralympic Games is a concentrated mobilisation in time (a few weeks), space (the host city) and financial resources. The Games also exert unprecedented pressure on the inventory of accommodation, public cleaning systems, energy demands, water consumption, public safety and the public transport network of the host city.

The Games represent a unique opportunity to accelerate much needed infrastructure investments in the city, which in the absence of the Games, would only be realised over a much longer term. However, investments in infrastructure can often bring about negative environmental impacts. Nonetheless, there are many opportunities for the Games to lead and function as a powerful example, promoting the adoption of new patterns of production and consumption that are less harmful to the environment. The Games must demonstrate that new standards of sustainability can be successfully adopted.

The 2016 Games are committed to reducing the environmental footprint left by the preparation and operation of the event, leaving behind a living example of more sustainable practices in transport and logistics, construction and urban improvement, conservation and environmental restoration and waste management.

Table 2 lists the four thematic areas related to strategic objective 'Planet' and their specific goals.

TABLE 2 - REDUCED ENVIRONMENTAL FOOTPRINT

THEMES	Specific objectives
Transport and logistics	Provide public transport for spectators and the labour force
	Implement actions to reduce pollution, including greenhouse gas (GHG) emissions in public transport systems
	Operate the Olympic and Paralympic fleet using cleaner fuels
	Rationalise and optimise logistics operations in the transportation of materials and equipment
Sustainable construction and urban improvement	Implement criteria for the rational use of resources, efficiency and minimisation of environmental impacts in the design and construction of all facilities
	Meet international and national environmental planning standards for development and construction of the entire Games infrastructure
	Encourage the growth of economic activity and improvements in the quality of life in the various Olympic Zones
Environmental conservation and clean-up	Minimise the impact on the existing ecosystems at the Olympic and Paralympic facilities and their immediate surroundings
	Promote the environmental clean-up of bodies of water in the regions of the Games
	Strengthen and accelerate environmental protection, conservation, restoration and rehabilitation programmes
	Expand monitoring of air and water quality in the Games regions
Waste management	Decommission and commence environmental clean-up of landfills and implement integrated solid waste treatment
	Align and implement management plans for all construction waste, ensuring appropriate management and final treatment
	Management and responsible treatment of the solid waste operations of the Games
	Management and responsible treatment of corporate solid waste

5.1 TRANSPORT AND LOGISTICS

5.1.1 Public transport for spectators and workforce

The transport strategy of the 2016 Games has been developed to ensure safe, fast and reliable public transport for 100 per cent of spectators and the Games workforce.

The concept of transporting spectators and the labour force via public transport is based on the acceleration of existing projects, creating a 'High-Performance Transport Ring', including a fully renovated train system, an expanded metro/subway system and four new Bus Rapid Transit (BRT) lines. This network will be integrated at several stations, and will link all four Games zones with key areas of the city, transforming the urban environment and leaving a legacy of significant social impact.

As it was designed to make maximum use of existing projects, the 'High-Performance Transport Ring' will expand and improve the city's transport network, helping to provide Rio de Janeiro with a mass transit system compatible with the city's future needs.

By 2016, the use of public high-capacity (train and metro/subway) transport systems is projected to increase from 12 per cent of total trips estimated at present to an estimated 60 per cent (including train, metro/subway, BRT and LRT transport).

Besides the legacy for the city, eliminating the need to use private cars to reach the competition sites will have the added benefit of reducing emissions of carbon dioxide and other particles harmful to health, and reducing the negative impact on city traffic.

A brief description of the main transport infrastructure projects to be implemented follows below.

BUS RAPID TRANSIT (BRT)

Responsibility: municipal government

Segregated from daily traffic, articulated buses each with a carrying capacity of 160 passengers or more will use express and local routes, according to the number of stops on the way. The vehicles have air conditioning, doors on the left side and a raised platform 90cm from ground level and aligned with the stations for easy access.

The four lines will be:

BRT Transoeste: will link Santa Cruz and Campo Grande to Barra da Tijuca, a distance of 56km, with 53 stations. It will meet a current demand of 220,000 passengers per day. The project extends from the Jardim Oceânico Station of the Subway/Metro Line 4 – Barra da Tijuca to Guaratiba, where it continues either to Campo Grande or Santa Cruz. It will be integrated with two other BRT lines: the Transcarioca at Alvorada station and the Transolímpica at the intersection of the Avenida das Américas with Avenida Salvador Allende. The expectation is that this will reduce the average travel time between the districts, all in the West Zone of Rio, by half. About 50km are already operational.

BRT Transolímpica: with a total length of 26km, Transolímpica will extend from Deodoro station to Avenida das Américas, in Barra. It will serve a current demand of 100,000 passengers per day. Between Estrada dos Bandeirantes (Jacarepaguá) and Avenida Brasil (Magalhães Bastos) a toll road will be built, 13km long and three lanes in each direction, with the lanes along the middle of the highway reserved for the BRT. Between Avenida das Américas and Estrada dos Bandeirantes, and along Avenida Salvador Allende, there will be a stretch of 7km. The stretch connecting the Magalhães Bastos and Terminal Deodoro stations will link the system with Transbrasil and the SuperVia (suburban rail), extending 3km. The Transolímpica will create new highways through the neighbourhoods of Barra da Tijuca, Recreio dos Bandeirantes, Camorim, Curicica, Taquara, Jardim Sulacap, Magalhães Bastos, Vila Militar and Deodoro, providing a direct benefit to more than 400,000 residents of the region and representing an option to reach Linha Amarela for those who live in the Baixada Fluminense district and close to Avenida Brasil. With the work already underway, the municipal government expects that all of the projects will be ready in 2015.

BRT Transbrasil: an express corridor for articulated buses along Avenida Brasil from Deodoro to the Santos Dumont domestic airport. Comprising 28 stations, four terminals and 15 walkways, it will run for 32km and have an estimated capacity of 900,000 passengers per day. The Transbrasil will link the system to very high demand corridors. The system will have connections with the Transcarioca (Barra da Tijuca-International Airport) and Transolímpica (Barra-Deodoro). Passengers can also transfer to the metro/subway and train. The project is underway.

BRT Transcarioca: will extend from Barra da Tijuca to Ilha do Governador (via Penha), 39km long, using the existing highways in the neighbourhoods served, operating in segregated lanes. The system will serve an estimated demand of 400,000 passengers per day. It will be integrated with the rail system (Madureira and Olaria), the metro/subway (Vicente de Carvalho) and the International Airport, designed to increased mobility for the 2016 Games and the 2014 Fifa World Cup. It will be integrated with the other BRT lines. Work on the project began in March 2011 and is scheduled for completion in December 2013.

LIGHT RAIL TRANSIT (LRT) AT PORTO MARAVILHA

Responsibility: municipal government

A new LRT system will be installed in the Centro (city centre) and Porto (port) districts of Rio, with 28km of operating track (with 42 stations), plus a 2km line to its Integrated Operations and Maintenance Centre (CIOM) and 4km of track to its maintenance and storage yard.

This new system will transform the urban landscape and upgrade the infrastructure of the Centro and Porto districts. Moreover, it will integrate the main modes of transport near the port area and increase the supply of medium-capacity public transport in a sustainable manner, by using a means of transport with cleaner energy.

Work on this project will commence in 2013 and be completed in 2015.

MODERNISATION OF THE INTELLIGENT TRANSPORT SYSTEM (ITS)

Responsibility: municipal government

The expansion and modernisation of the Traffic Control System of the City of Rio de Janeiro (CTA) began in 1996. Several further upgrades are planned as follows:

- Expanding the use of intelligent 'PTZ' cameras and the electronic traffic flow control system with managed intersections and electronic counters (traffic loops used to

detect speed and traffic count)
- Deployment of automatic number plate recognition (OCR) equipment
- Modernisation of traffic signals and traffic signal controls at the intersections of main streets
- Installation of variable message boards (VMBs)

Implementation has already commenced, with the first phase completed in 2009 and Phase 2 scheduled for completion in 2015.

EXPANSION AND RENOVATION OF THE SUBWAY/METRO

Responsibility: state government

Entities involved: State Chief of Staff's office, SETRANS, Rio Trilhos, Consórcio Line 4, Consórcio Bar-Rio, Metro Rio.

The following upgrades are planned for the metro:

Line 4: expansion of the subway network to connect Barra da Tijuca with Zona Sul (the southern part of the city, including Copacabana, Ipanema and Leblon); construction of stations: Jardim Oceânico, São Conrado, Gávea, Antero de Quental, Jardim de Allah and Nossa Senhora da Paz; expansion of General Osório station; acquisition of rolling stock. In progress.

Line 1: expansion of General Osório station (Ipanema), construction of Uruguai station (Tijuca); modifications for accessibility in existing stations; improvement in energy and operating signals. In progress.

Line 2: interconnection between Lines 1 and 2 (São Cristóvão/ Central); construction of Cidade Nova station; modifications for accessibility in existing stations; improvement in energy and operating signals. In progress.

Acquisition of rolling stock: new trains for Line 4 and installation of new operating, control and signal systems. Acquisition of 114 air-conditioned carriages for Lines 1 and 2 and the construction of train garages in Central. In progress.

Performance indicators: km deployed, number of passengers per day, number of trips, tonnes of CO2 avoided.

REFURBISHMENT OF THE TRAIN SYSTEM (SUPERVIA)

Responsibility: state government

Entities involved: State Chief of Staff's office, SETRANS, Central, SuperVia.

The following works are being implemented on the SuperVia suburban rail system:

Deodoro branch line: modernisation and modification for universal accessibility in all stations; construction of Maracanã, Mangueira and São Cristóvão stations; renovation of Olympic Deodoro, Madureira, Engenho de Dentro and Central do Brasil stations. In progress.

Santa Cruz branch line: modernisation and modification for universal accessibility in all stations; construction of Vila Militar and Magalhães Bastos stations; renovation of Santa Cruz Olympic station. In progress.

Saracuruna branch line: modernisation and modification for universal accessibility in all stations; renovation of Olaria Olympic station. Conclusion of works scheduled for December 2015.

Belford Roxo branch line: modernisation and modification for universal accessibility in all stations. Conclusion of works scheduled for December 2015.

Acquisition of rolling stock: acquisition of 120 new trains for the entire railway system. In progress.

Infrastructure for extensions: reform of existing rolling stock; restoration and modification of rail lines; modification of overhead traction system (electric systems) and communication system for the entire railway system. In progress.

Branch line supplementing: modernisation of São Diogo and Deodoro workshops; installation of new automatic train protection (ATP) signal system; reform of operating command centre (OCC). In progress.

Key Performance Indicators (KPIs)

Key Performance Indicators will be used for all transport expansions and upgrades to assist the organising committee in assessing achievements and shortcomings. This information will form the basis of annual reporting and will contribute to a long-term impact evaluation of the Games, giving a full picture of the environmental, social and economic outcomes.

KPIs for each planned transport project:

- Km improved/constructed
- Number of passengers per day
- Number of trips
- Tonnes of CO2 avoided

5.1.2 Action to reduce pollution including greenhouse gas (GHG) emissions by public transport systems

The city of Rio de Janeiro voluntarily established the goal of guaranteeing, by 2020, a reduction of 2.3 million tonnes of greenhouse gas (GHG) emissions – equivalent to 20 per cent of emissions in the municipality in 2005.

An inventory of greenhouse gas emissions, conducted in 2005, showed that motor vehicle use was responsible for 37 per cent of GHG emissions in the city, giving rise to reduction policies that are already being implemented, such as doubling the network of bike lanes in the city, increasing the numbers of vehicles in the bus fleet that operate with cleaner fuels and launching the operation of four exclusive transport corridors for the Bus Rapid Transit (BRT) system.

EXPANDING NETWORK OF BIKE LANES

Responsible: municipal government

With the ambitious goal of increasing the city's bike lane network to 450km by 2016, the '*Rio: Biking Capital*' programme promotes the use of bicycles, helping to reduce air pollution levels and improving quality of life.

Included in the city's strategic plan and Rio 2016's Candidature File, the programme builds on the growing strength of bicycle use in the city over the past 20 years. Currently, about four per cent of short and medium distance travel – almost one million trips per day – are made using bikes, more than the total number of train and ferry commuters.

Begun in 2009, from a starting point of 150km of bike paths, bike lanes and shared lanes, the programme aims to add an additional 300km by the end of 2016. The bike path network will integrate with other modes of transport, linking the Games zones and, inside each zone, their facilities. The programme also includes the installation of bicycle rental docking stations at various points around the city, and the promotion of the culture of cycling.

Key performance indicators: Km of bike lanes created, Number of trips, Tonnes of CO2 avoided

EXPANSION OF THE MUNICIPAL BUS FLEET WITH CLEANER FUELS

Responsible: municipal government

Rio de Janeiro's city bus fleet currently in commercial operation consists mostly of diesel engine buses, which meet emissions standards at or prior to Brazil's Vehicle Emissions Control Programme (PROCONVE) Phase 5 - P5. Additionally, according to data from the Rio de Janeiro State Federation of Passenger Transport Companies (FETRANSPOR), approximately 60 per cent of city buses in the fleet are classified as Type I (front-engine vehicles).

According to Resolution No. 403, of 11 November 2008, published by Brazil's National Environmental Council (CONAMA), as of January 2012, all manufacturers of vehicles and engines operating in Brazil are obliged to produce and equip their vehicles with engines that meet EURO V emission standards (PROCONVE Phase 7 - P7), which means a gradual modification of the Rio de Janeiro bus fleet to meet these requirements to ensure a significant reduction in emissions of pollutants.

The municipal transport system operates as a private sector concession, under the administration of the municipal government.

Concessionaires have agreed to annually modify 20 per cent of buses in the city fleet, commencing in 2012. Accordingly, the expectation is that the entire municipal fleet of Rio de Janeiro will be overhauled and adapted to the new standards by 2016.

Key performance indicators: Percentage of the fleet modified to P7 standards

5.1.3 Cleaner fuel for Olympic and Paralympic fleet

Responsible: Rio 2016™

Brazil plays a leading role in the global clean energy sector, with 45.3 per cent of its energy coming from renewable resources, such as hydro power, biomass and ethanol. Almost 90 per cent of the vehicles purchased in Brazil now come, as a standard, with flex technology, which enables them to operate on either ethanol or gasoline/petrol. The majority of taxis in Rio de Janeiro run on natural gas.

Based on this, Rio2016™ is committed to operating its fleet of light vehicles and buses with cleaner fuels from renewable sources.

The goal is to have at least 75 per cent of light vehicles operating on ethanol or electricity, and all of the buses operating with the highest percentage of biodiesel commercially available at the time of the Games. The exact amounts will be determined by the end of 2013 based on discussions already underway with commercial and governmental partners.

Rio 2016™ has also begun studies to define carbon emission standards for the entire fleet and to model the potential emission standards for passenger vehicles, trucks and buses.

The principles adopted by Rio 2016™ for reducing carbon emissions from transport operations are based on internationally recognised principles – reduce, replace and compensate.

- **Reduce**: decrease emissions at the source, lowering total fuel consumption through measures such as giving priority to fuel efficient vehicles, using tires with proper rolling resistance and providing driver training in techniques of economic vehicle operation.
- **Replace**: use low-carbon fuels, such as ethanol, biodiesel and electricity.
- **Compensate**: after exhausting reduction and replacement alternatives, use carbon offset projects as a final option.

Key performance indicators: Total CO2 emissions, Reduction in CO2 emissions obtained, Reduction in NOx, SOx and other significant contributors to air pollution

5.1.4 Rationalisation and optimisation of logistics operations in the transportation of materials and equipment

PREPARATION STAGE

Responsible: municipal and state governments

Governments are adopting high standards of environmental protection in their projects, including the pursuit of environmental certifications that encourage, among other practices, the optimisation of logistics in the transportation of materials. For example, Parque Madureira received AQUA environmental certification and all permanent Rio 2016™ venues and facilities that are the responsibility of the municipal government will receive Leadership in Energy and Environmental Design (LEED) certification.

Key performance indicators: Number of certifications (type and level)

OPERATIONAL PHASE

Responsible: Rio 2016™

Due to the high volume of material and equipment to be transported to and between venues and facilities during the Games, logistics initiatives have been built into the Rio 2016™ Sustainable Supply Chain Guide[7].

Rationalising and optimising logistics operations are essential both in reducing carbon emissions and minimising waste generation through integrated management.

The organising committee is in discussion with business partners, suppliers and licensees on how to integrate initiatives that will rationalise and optimise logistics operations, measure results and estimate reductions in waste generation and carbon emissions. This will be a big challenge for industry in Brazil and is an area where the 2016 Games may bring significant behavioral change.

Key performance indicators: Reduction of CO2 emissions achieved, Number of suppliers that have implemented logistics rationalisation and optimisation plans

7 The Rio 2016™ Sustainable Supply Chain Guide may be ordered by sending an email to sustentabilidade.suprimentos@rio2016.com

5.2 SUSTAINABLE CONSTRUCTION AND URBAN IMPROVEMENTS

5.2.1 Rational use of resources, efficiency and minimisation of environmental impact in venue design and construction

Some of the biggest challenges and opportunities for sustainability are directly related to the venues – their location, architectural design features, construction, operations during the Games and their post-Games use and maintenance.

Maximising the use of existing venues together with detailed design and construction planning for new venues, and adhering to high environmental standards, will ensure that the 2016 Games infrastructure has a minimal impact on the environment.

All decisions regarding whether or not to build new venues have been guided by proven post-event demand criteria, as well as by environmental and financial criteria of permanent buildings compared to temporary buildings. The aim has been to avoid the construction of underutilised and high maintenance cost facilities.

Thus, among the 36 venues to be used during the 2016 Games, 16 already exist (half of these will be renovated), nine will be temporary and 11 new, permanent venues will be constructed.

The temporary venues will be based on the concept of nomadic architecture, with modular buildings that can be disassembled and reused, processed and moved around, so as not to go to waste after the Games.

Guidelines for sustainable design and construction of permanent venues, and temporary overlay (temporary facilities) were established, beginning with the Candidature File, to:

- Encourage more compact designs and obtain better performance from energy and materials
- ·Prolong the useful life of materials and structures
- ·Reuse, whenever possible, existing materials at construction sites and, wherever possible, use recycled or renewable sources
- ·Replace materials harmful to health
- ·Reduce carbon emissions embedded in buildings
- ·Adopt technologies that enable the efficient and rational use of water
- ·Use passive bioclimatic systems, improve energy efficiency, provide greater thermal/acoustic/lighting comfort and create healthier indoor environments that emit fewer pollutants

- Maximise the use of renewable energy
- Reduce the need for replacement and maintenance over the lifetime of the facilities
- Minimise earth-moving activity

Specific goals, taking into account the life-cycle of each type of venue, are being discussed by the Rio 2016™ Games Sustainability Working Group and will be published in the next version of the SMP.

These goals will be achievable from a technical and cost standpoint. The challenges will be to move towards more innovative and sustainable construction, with low environmental impacts, that raise the standards of construction in Brazil. It should be noted that the establishment of quantitative targets is not a trivial issue and cannot be the result of simple estimation. Rather, it should be the result of studies that show current practices and the realistic potential for improvements, as sustainability in construction presents great complexity and diversity in the function of materials and construction methods with regional variations and climate considerations.

Key performance indicators: Percentage of recycled materials used, Energy consumption, Energy savings as a result of conservation and efficiency improvements, Total water use by source, Percentage and total volume of water recycled and reused, Total direct and indirect emissions of greenhouse gases, Reduction of greenhouse gases, Water disposal, Number and volume of significant spills, Nature, scope and effectiveness of practices that assess and manage the impacts of operations in vicinities, including entrances, operations and exits during construction.

NEW VENUES AND RENOVATION OF EXISTING VENUES

Responsible: federal, state and municipal governments

All tenders for bids on projects and construction issued by all levels of government will include sustainability principles. The new sports facilities will have permanent environmental certifications that induce the adoption of measures to reduce environmental impacts, with objective parameters to be followed.

TEMPORARY VENUES AND OVERLAYS

Responsible: Rio 2016™

The integration of sustainability criteria in the design and construction of temporary venues and overlays is a great challenge. Besides the lack of benchmarks for project assembly and/or disassembly processes, experience with the integration of sustainability criteria on the part of materials/commodities suppliers for Games-related events (fencing, tents, seats, etc.) is still quite new.

Thus, Rio 2016™ is developing a sustainability strategy to be used for all temporary venues and overlay operations. The strategy is focused on four areas:

- Design and construction (assembly and disassembly)
- Licensing
- Supplies
- Operations

Work has begun on a technical manual providing benchmarks and this will be a legacy for Brazil's events sector. The Olympic and Paralympic transition and decommissioning phases also contain specific strategies, which provide plans for dismantling and disposal, and/or reuse of temporary equipment, avoiding wastes or added costs. This initiative is linked to the definition of legacy and will be implemented during planning and design phases.

A team of architects and supply analysts are working with the supplier market to improve their understanding of systems and materials on offer, identifying possibilities for the integration of sustainability strategies into the supply chain, conducting risk assessments during the contracting process and assisting potential suppliers to create more sustainable materials and/or commodities.

5.2.2 International and national environmental planning standards for Games infrastructure

Responsible: federal, state and municipal governments and Rio 2016™

All permanent venues built by the municipal government will receive Leadership in Energy and Environmental Design (LEED) certification and the energy economy seal from Brazil's National Electrical Energy Conservation Programme (PROCEL). All permanent venues constructed by the state government will receive internationally recognised environmental certifications applicable in Brazil, in addition to the PROCEL energy ecomomy seal.

The federal, state and local levels of government, competent authorities and involved businesses will provide assurances that all construction projects for the organisation of the 2016 Games will be made in accordance with local, state and federal environmental protection regulations.

Specifically, construction projects will be subject to the resolutions of the Brazil's National Environmental Council (CONAMA) and the Environmental Institute of the State of Rio de Janeiro (INEA), construction code and zoning laws of the city of Rio de Janeiro, as well as the rules of the Brazilian Association of Technical Standards (ABNT) and the National Institute of Metrology (INMETRO). International conventions, such as the Montreal Protocol, Basel Convention, Stockholm Convention and the Convention on Biological Diversity, will also be respected.

Key performance indicators: Number (and type) of LEED, AQUA or equivalent certified venues, Number of facilities with certified as PROCEL 'A' Buildings, Monetary value of fines for non-compliance with laws and regulations, Total number of cases of non-compliance with regulations and codes

5.2.3 Growth of economic activity and quality of life improvements

Responsible: federal, state and municipal governments and Rio 2016™

The 2016 Games will act as an accelerator or catalyst in a broad-ranging process of infrastructure modernisation and urban renewal in the city of Rio de Janeiro. Encouraging new economic activities and improving the quality of life in several areas of the city are at the heart of the sustainable transformation proposed by the 2016 Games.

Directed by the municipal and state governments of Rio de Janeiro, the projects are being funded with resources from the Brazilian Federal Government, decentralised through the Ministry of Cities through voluntary transfers via intermediation from Caixa Economica Federal (CAIXA), under the aegis of the PAC (see box 2).

Shown below is a summary of agreed programmes and projects that are, at minimum, as of the date of this plan, in the basic design set-up phase. The next version of the SMP will detail the progress of the projects, along with the presentation of a complete portfolio.

Key performance indicators: Social and economic cost-benefit indicators for the regions where the principal projects are located (Olympic Games Impact Study - OGI)

RENEWAL OF THE PORT DISTRICT OF RIO DE JANEIRO

Responsible: municipal government

Urban development of the port district through the expansion and rehabilitation of public spaces to improve the quality of life of current and future residents, enhance the socioeconomic and environmental sustainability of the region and integrate the area with the Centro (city centre) area and surrounding neighbourhoods.

During the 2016 Games, the port district will play an important role. New constructions will include accommodation villages and operations and technology centres (projects which were selected from a national public competition for architects). The district will also host cruise ships for additional accommodation.

With this renewal and based on similar international experiences, Rio's port district will become an attractive shopping, cultural and entertainment centre, serving to reconnect the city with its port.

Work on the first phase of the project will include the revitalisation of Praça Maua and infrastructure improvements (new water, sewage, electricity and telecommunications networks), sidewalks, street lighting, drainage and landscaping around the areas of several streets and avenues, including Barão de Tefé, Camerino, Venezuela, Rodrigues Alves and Sacadura

Cabral. The project also includes the redevelopment of Morro da Conceicao, local streets, underground power lines and restoring some of the city's cultural landmarks – Jardim do Valongo, Cais do Valongo, Cais da Imperatriz and Pedra do Sal.

The second stage will be realised through the port district's Urban Operations Consortium, which has been set up by the public authorities, as stipulated by Supplementary Law 101/2009 and other relevant legislation. It addresses all controls inherent in public administration activities and provides, among others, the following tools:

- The establishment of partnerships between the government and the private sector
- Public consortia
- Use of capital market instruments
- Urban policy instruments under statutes of the city and the 'Ten-Year Plan for the City of Rio de Janeiro'
- Construction of a new road system to integrate the area with the Centro (city centre) area and surrounding neighborhoods

The Basic Interventions Programme to be implemented is shown in Appendix II of Complementary Law No. 101 (Article 10, Section II, Chapter III).

Complementary Law No. 101 of 23 November 2009, which established the Urban Operations Consortium of the Port District of Rio de Janeiro, also establishes an obligation that new constructions in the district shall follow sustainability criteria.

Construction activities began in 2010, with completion scheduled for June 2016.

PARQUE CARIOCA

Responsible: municipal government

The project includes the urban infrastructure for Parque Carioca, a condominium to be built for the relocation of families from Vila Autódromo, to allow the area to be cleared for construction of additional lanes on Avenida Abelardo Bueno, the removal of occupants from the protected area bordering the Jacarepaguá Lagoon and for making available the area required for the Barra Olympic Park operations.

Clearing of the areas referenced above is subject to the construction of new, higher quality homes for the current residents of Vila Autódromo on land that is located 1km from the expropriated area.

This project is in its preparatory phase, with the start of construction planned for the first half of 2013.

URBAN REDEVELOPMENT OF THE AREA SURROUNDING JOÃO HAVELANGE OLYMPIC STADIUM

Responsible: municipal government

Urban improvements and infrastructure around the stadium, including:

- Urbanisation of the immediate surrounding streets
- Improving the drainage system
- Relocation of the power substation serving the rail system
- Community redevelopment of the Belém-Belém neighbourhood
- Creation of access road from Linha Amarela (north) to the stadium, passing through the planned warm-up area
- Making the area suitable for the installation of the TV compound

The urban renewal project is a joint, long-term effort by the city, state and federal governments to reclassify the area surrounding the stadium and to improve accessibility and the existing road system.

The redevelopment of the Belém-Belém neighbourhood is designed to enable the construction of a new access road between Linha Amarela, a major road to the north, through a connection with Rua José dos Reis and Rua das Oficinas, to the Olympic venue. Local families will be resettled to an area with better living conditions, improving their quality of life. Project managers will meet with residents to discuss various forms of resettlement, which will take place following the registration of families and development of a diagnostic profile of residents.

The new access road from Linha Amarela (north) to the stadium, passing through the area reserved for warm-ups, will be used to reach the stadium by the Olympic family coming from Linha Amarela and the athletes coming and going from the warm-up area.

The design also includes an improved drainage system to eliminate the accumulation of pools of water in the area. This includes carrying rain water through closed rectangular storm drains along Rua José dos Reis to the Rio Faria (Faria River). This will greatly benefit the following streets:

- Arquias Cordeiro
- Rua das Oficinas
- Dr. Padilha
- José dos Reis
- Rua da Abolição
- Benício de Abreu
- General Clarindo
- Bento Gonçalves
- Dona Eugênia

According to the project, the water collected will flow into the Faria River, which will relieve the Rio dos Frangos and keep the water body closest to the stadium from overflowing. The waters drained from Rua Dr. Padilha will be carried into the Rio Meier and then into the Rio Faria.

The project to rehabilitate sidewalks and walkways that make up the ring road surrounding João Havelange Stadium affects the Rua das Oficinas, Rua Dr. Padilha, Rua José dos Reis and Rua Arquias Cordeiro.

These activities began in 2011 and are scheduled for completion in July 2015.

URBAN IMPROVEMENTS AROUND THE MARACANÃ STADIUM

Responsible: municipal government

For the 2016 Games, the area adjacent to the Maracanã Stadium will require large-scale urban renewal. The redesign of nearby roads will facilitate access to the stadium, as well as its connection to the São Cristóvão neighborhood and Avenida Brasil.

The project consists of urban renewal, with the construction of housing units and community facilities in the Mangueira Complex, Favela do Metro and surrounding areas. The project includes the relocation of Favela do Metro, located on Avenida Radial Oeste, which consists of 728 households and 119 businesses, with a reorganisation of the road system in the remaining area as a consequence, as well as the construction

of a commercial and automotive repair area to re-establish the commerce that currently takes place at this site. It also includes the recovery of two buildings located on Rua Visconde de Niterói (previously used by the Brazilian Institute of Geography and Statistics-IBGE) to establish a 'Knowledge Square' for the dissemination of digital knowledge (comprising a library, a cinema module and digital inclusion classrooms for professional training in computer technology and photography, and a video library) and a multipurpose building for activities to generate employment and income (through various partnerships, professional training courses, technical training courses, and courses on entrepreneurship will be held, as well as the creation of 'incubator projects'). The project also includes the construction of a linear park, with an automotive complex and tree-shaded and multipurpose leisure areas.

The project will provide a social legacy for the Mangueira community, with improvements in the areas of infrastructure and urban zoning that will help the region economically, providing great potential for tourism (e.g. Mangueira samba school) and logistics (close to Rio's city centre). It will provide the region with a better transport system and connections to public transport services. It will offer the population an opportunity to reside in a well-located area.

The project is in the basic design phase, with projects planned to begin in April 2013 and be completed in April 2014.

PASSEIO OLÍMPICO

Responsible: municipal government

The region where the Olympic Park will be located in Barra da Tijuca will play, not only during games, but also after their completion, a key role in integrating the surrounding areas, which at present are quite fragmented and unconnected.

This is a characteristic of the Barra da Tijuca urban plan, where there is little or no integration between its parts. Each acts as if it were autonomous and independent of the other, forcing the use of cars to get from one place to another and increasing the sense of a lack of security in public areas, streets and parks. In this context, existing sidewalks are not maintained or are narrow, and walking is not encouraged.

The ‘Last Mile of the Olympic Park’ project – or Passeio Olímpico – is designed to promote interaction through the integration of transport corridors, landscape and spatial integration, appreciation of local nature, and restoration of the landscape.

Project area: 400,000m2

Construction is scheduled to commence in the second half of 2013.

PARQUE MADUREIRA

Responsible: municipal government

Parque Madureira is located in the neighborhood of the same name in the north of the city. With an area of 93,553.79m², in an intervention area of 108,870.32m², it is the third largest urban park in the city and the first public park in Brazil to have its project content and design awarded the AQUA Seal for Sustainable Construction.

The area is almost 60m wide and 1,350m in length, squeezed in between a section of land where power transmission lines (owned by the Light electric company) are located along a 50m strip alongside the SuperVia railway.

The park is divided into five major sectors that offer a variety of entertainment, sports and cultural activities, such as the Praça do Samba (Samba Square); Nave do Conhecimento, a quiet place space with ponds, sensory and botanical gardens; a gazebo; an environmental education and administration centre; a skateboard ramp; athletic courts; and the Arena Carioca. The park also houses the Inspetoria da Guarda Municipal (Inspectorate of the Municipal Guard) and a sewage treatment plant. The park can be accessed via local streets that feed the Transcarioca.

The park opened in September 2012.

ACCELERATED GROWTH PROGRAMME 1 AND 2

The Accelerated Growth Programme 1 and 2 (PAC is the acronym in Portuguese) are Brazilian Federal Government initiatives that assure resources for sanitation and social development infrastructure projects throughout the city of Rio de Janeiro and its metropolitan area. Among these are projects that will be a part of the responsibility matrix of the Rio 2016™ Games, which will be carried out by the State and City of Rio de Janeiro.

Created in 2007, PAC was designed as a strategic plan to restore planning and recover investments in Brazil's infrastructure sector. Since then it has contributed decisively to an increase in job opportunities and income generation. During its first four years, PAC has doubled public investment in Brazil (1.62 per cent of GDP in 2006 to 3.27 per cent in 2010), helping the Brazilian economy to remain active during the global financial crisis of 2008 and 2009.

In 2011, PAC entered its second phase, providing additional resources for the implementation of structural projects to improve the quality of life in Brazilian cities.

The subjects of contracts with municipalities in the metropolitan region of Rio de Janeiro cover projects such as:

- Sustainable urban drainage
- Municipal solid waste
- Urban environmental sanitation
- Social housing
- Urbanisation, standardisation and integration of marginal communities
- Strengthening urban management
- Rehabilitation of urban centres
- Revitalisation of national heritage assets
- Urban transport
- Urban rail systems

5.3 ENVIRONMENTAL CONSERVATION AND CLEAN-UP

5.3.1 Minimise the impact on existing ecosystems at Olympic and Paralympic venues and their immediate surroundings

In the general plan for each region of the Rio 2016™ Games, sustainability plans are being developed, which provide for each area to have measures that are appropriate and relevant to their specific environmental contexts. Thus, while it is not possible to draw a parallel between all projects, there are general guidelines that apply to all projects and large-scale programmes dedicated to the two principal areas of the Games, which are highlighted below.

General guidelines

For the 2016 Games, the new sports venue construction projects are not subject to the requirement to carry out a prior environmental impact study (per CONAMA Resolution No. 001 of January 23, 1986), with environmental licensing from the City of Rio de Janeiro's Department of the Environment (SMAC) being sufficient.

However, studies to minimise environmental impacts were conducted for all new facilities. These include a soil contamination assessment, species (fauna and flora) inventory, as well as hydro-geological and water quality and contamination studies.

All projects had as a premise the aim of maximum preservation of existing patches of vegetation, minimising removal and transplantation, as well as the use of the species inventory, such that it could be used as a reference source for landscaping projects. The cultivation of native species will be the basis of landscape projects to environmentally restore stretches of land that are currently degraded and/or deteriorated.

BARRA ZONE (BARRA OLYMPIC PARK)

Responsible: municipal government

- Mangrove reforestation of the strip around the lagoon
- Establishing ecological support by using native species in landscaping
- Maintenance of remaining natural landmarks

- Ecological and functional recovery of the Jacarepaguá lagoon system
- Ecosystem integration and the creation of an ecological corridor between the Tijuca National Park and the Pedra Branca State Park conservation areas

DEODORO ZONE (DEODORO OLYMPIC PARK)

- Reforestation of degraded areas
- Environmental sanitation projects, including storm drainage, expansion of water supply and sewage collection networks
- Implementation of roadside reforestation and native species landscaping, integrating the area of the Games with its surroundings

Key performance indicators: Location and size of areas that are owned, leased or managed in, or adjacent to, protected areas, and high biodiversity index areas that are outside of protected areas

Number of species on the Red List of Threatened Species, compiled by the International Union for Conservation of Nature (IUCN), and national conservation lists with habitats in areas affected by operations, broken down by their risk of extinction

5.3.2 Environmental clean-up of the bodies of water in the Games zones

The 2016 Games will accelerate the installation and, in some cases, the introduction of important environmental recovery projects, with emphasis on the water quality of the city's rivers, lakes and beaches in ecologically sensitive areas.

Among these were projects to reduce the pollution of Guanabara Bay and the Jacarepaguá lagoon system, commitments that were assumed by the federal, state and city governments for the 2016 Olympic and Paralympic Games.

Performance indicators: Litres of sewage treated, Indicies of water quality for bathing

BAÍA DE GUANABARA (GUANABARA BAY) CLEAN-UP PROGRAMME

Responsible: State Government of Rio de Janeiro, State of Rio de Janeiro Water and Sewage Company (CEDAE), Rio de Janeiro State Secretariat for the Environment (SEA)

The Guanabara Bay Clean-Up Programme (PDBG) was created in the early 1990s by the state government with the aim of planning and coordinating a set of activities to clean up the waters of Guanabara Bay.

The programme was designed to improve environmental and sanitary conditions in the Rio de Janeiro metropolitan area, prevent the release of untreated sewage in the bay and improve the quality of life for local residents. In its initial phases, it provided only pre-treatment and primary treatment at sewage treatment stations, with a biological oxygen demand (BOD) reduction factor of 30 per cent.

In its current phase, secondary treatment at all sewage treatment plants is being added, raising the BOD reduction factor to 92 per cent.

Among the PDBG portfolio's main projects, which are now in the tender process for projects that are scheduled for completion by 2016, are:

- Expansion of secondary treatment (equipment purchase and installation) at the Alegria Sewage Treatment Plant
- Building a sewer collector trunk in the basins of the Mangue Canal and the Faria Timbó and Manguinhos rivers
- Basic sanitation for the Complexo da Maré
- Replacement of sewer networks

Erecting and reforming eco-barriers (physical barriers to contain garbage floating in bodies of water) and eco-points (points for receiving recyclable materials removed from the eco-barriers and/or donated by local residents) in rivers that flow into Guanabara Bay will also contribute to water quality restoration.

Further details can be obtained from www.cedae.com.br/raiz/002020.asp

ENVIRONMENTAL RECOVERY AT THE JACAREPAGUÁ LAGOON SYSTEM

Responsible: State Government of Rio de Janeiro (CEDAE and SEA) and Municipal Government of Rio de Janeiro

Environmental recovery activities for the Jacarepaguá lagoon system combine sanitation and desilting projects that are the responsibility of the state government, with macro basin drainage projects that are the responsibility of the municipal government.

The Jacarepaguá Basin Sanitation Programme is designed to install complete sanitation systems in Barra da Tijuca, Jacarepaguá and Recreio dos Bandeirantes, including the installation of collector trunks, laying repression lines, and the construction and refurbishment of sewage pumping stations. Further details can be obtained from: www.cedae.com.br/raiz/002022.asp

Desilting projects include dredging six million m3 from the Jacarepaguá lagoon complex (Jacarepaguá, Camorim, Tijuca and Marapendi lagoons), the 180m expansion of the breakwater at the Joatinga Channel, deployment and recovery of mangroves on the banks of these bodies of water and construction of an island in the Tijuca Lagoon using dredged sediments (packed in geotubes).

The macro-drainage projects in the Jacarepaguá Basin are designed to eliminate the risks of flooding and its consequences in the marshland area that will host the Games or where important access is needed for mobility during the Games. Corrective actions are planned for sections of the watercourses in the region and the adoption of compensatory measures to mitigate the effects of urbanisation on hydrological processes. Regarding waterborne diseases, by reducing flooding, controlling vectors and reducing effluent discharges into water courses (with a consequent impact on lagoon system quality), there will also be an improvement in the health and environmental conditions of the region. Activities to organise land use, preserving marginal areas for protection, will complement the programme.

RIVER TREATMENT UNITS (RTUS)

Responsible: State Government of Rio de Janeiro (INEA) and Municipal Government of Rio de Janeiro (Undersecretary for the Management of Hydrographic Basins-RIO-ÁGUAS)

The state government (through its State Department for the Environment and the State Environmental Institute - INEA), and the city government (through the Undersecretary for the Management of Hydrographic Basins - RIO-ÁGUAS), have been studying the placement of RTUs in Baía de Guanabara and the Jacarépaguá lagoon system.

The reason for this is because planned investments in sewage systems, both in collection and treatment, have been slow to mature, such that to achieve complete clean-up of Baía de Guanabara and the Jacarepaguá System, using the systems currently in place, will take one or two decades.

Studies of alternatives to significantly reduce pollution that flows into Baía de Guanabara and the Jacarepaguá lagoon system show that the best alternative to meet the commitment to clean up these waters in the short/medium term is to deploy:

- Eight river treatment units (RTUs) to clean up the bay. Guanabara Bay has a flow arrival rate of between 100 to 110m³ per second for all watercourses that flow into the bay. The proposal is to build RTUs with a total throughput of 42.65 m³ per second, in eight watercourses, which corresponds to between 80 and 85 per cent of the pollution that reaches
  the bay.
- Four RTUs for cleaning up the Barra da Tijuca lagoon system. The proposal calls for building RTUs with a total flow of 6.25 m³ per second, corresponding to 90 per cent of the pollution flowing into the system.

It is important to note that the possible deployment of RTUs is not a substitute for the continued implementation and expansion of sewage systems in the Municipality of Rio de Janeiro and other cities in the metropolitan area.

ENVIRONMENTAL UPGRADING OF THE RODRIGO DE FREITAS LAGOON

Responsible: state and municipal governments, private partnership

Over the past 30 years, the lack of sewage system investments has led to critical amounts of sewage flowing into the Rodrigo de Freitas Lagoon.

Since 2006, CEDAE has been carrying out interventions, providing improvements to the sewage system in the Rodrigo de Freitas Lagoon basin and at several beaches in Rio de Janeiro's Zona Sul section of the city, through the construction and/or replacement of sewage systems, pumping stations, sewage discharge lines (pipes that receive pressurised sewage from sewage pumping stations) and the identification and elimination of illegal connections.

In parallel, a project called 'Clean Lagoon' has been created and implemented in partnership with the state government (CEDAE, INEA, SEA) and the municipal government (SMAC, RIO-ÁGUAS, Municipal Urban Waste/Sanitation Company-COMLURB, Parks and Gardens Foundation), and a private sector company, the EBX Group. Although its primary focus is on the lagoon, the 'Clean Lagoon' project is a comprehensive initiative designed to implement activities that will result in improvements around the entire watershed. This includes the installation of structural activities for solid waste management, dredging at critical silting points, overhaul and modernisation of the sewage system, revitalisation of the Macacos and Cabeça rivers, identification and elimination of illegal connections, and water quality monitoring to verify results.

Environmental recovery achievements have already been realised. For example, a decline in fecal coliforms per milliliter of water (MPN/ml), which stood at approximately 16,000 mpn per ml in 2006 dropped to 1,300 mpn per ml in 2008 and 400 mpn per ml in 2009, which, according to CONAMA Resolution No. 357/2005, is a figure commensurate with secondary contact for Class 2 brackish water. Continuous monitoring data from 2011 and 2012 shows that water conditions suitable for secondary contact have stabilised.

OTHER ENVIRONMENTAL CLEAN-UP PROJECTS FOR BODIES OF WATER

Fundão Canal and its surroundings: this programme, now completed, was overseen by the state government, focused on the revitalisation of Ilha do Fundão (Fundão Island) and the recovery of the waters circulating in the Fundão and Cunha Channels through dredging to remove sediments; urbanisation and landscaping on Fundão Island; recovery of 165,000 m2 of mangroves; construction of sanitation and urbanisation projects in Ilha do Fundão's residential village; an increase in the depth of the Fundão Canal in those areas that are near the Cajú shipyards; an environmental education programme conducted in local communities; construction of a cable-stayed bridge linking Ilha do Fundão and Linha Vermelha; and the construction of an access road exit to the north of Ilha do Fundão.

Iguaçu River: flood control basins for the Iguaçu, Botas and Sarapuí rivers through environmental restoration; river dredging; urbanisation and resettlement of riverside families to new housing units. Meso dredging of 23 drainage ditches in the Baixada Fluminense and Bangu areas, and resettlement of families. Managed by the state government.

Marangá River: implementation of interventions by the municipal government in the Marangá River to protect the riverbed from erosion; staving off the acceleration of downstream flow; enhancing the waterway and its surroundings; and controlling floods in the region. Activities include urbanisation projects with the establishment of an approximately 500m-long recreation area (Parque Linear). In the basic design phase, these projects should be completed by the start of the 2016 Games.

Praça da Bandeira: this area is strategically important for the Games because it is a major link to the existing facilities in Maracanã. The project, which is the responsibility of the municipal government, is designed to control flooding and improve drainage and sewer systems in the region of Avenida Maracanã and around the stadium, Praça da Bandeira and Avenida Paulo de Frontin. It is anticipated that the project will construct four reservoirs to absorb flooding, as well as re-route and stabilise the course of the Joana River to reduce its flow, for a 25-year period, to 100m³ per second, which will mitigate significant flooding in the watershed in general, not just in Praça da Bandeira. The initiative also includes the

construction of a rectangular gallery along Rua Felipe Camarão; the construction of a reinforcement gallery for the Rio Joana, between Praça Niterói and Praça Emílio Garrastazu Médici; deployment of a channel to protect the Trapicheiros River, between the bed of the Supervia and its flow into the Maracanã River; and deployment of a run-off channel directly into the Baía de Guanabara. Initiated in May 2012, these projects should be completed by July 2014.

Expansion of the programme to encourage recycling of vegetable oils in Rio state (PROVE): managed by the state government. Most of the vegetable oil used in food preparation is incorrectly disposed of in sinks or drains, or discarded in vacant lots and landfills, causing serious problems for the sanitation system (clogged pipes and damaged equipment) and polluting rivers and lakes. Each liter of oil poured down a sink drain can pollute approximately a million gallons of water. Thus, increasing the collection of used vegetable oil that can be recycled (used for soap or biodiesel) adds to the recovery efforts for bodies of water.

Expansion of the deployment of eco-barriers: improper disposal of solid waste in the soil or directly into water bodies is a major factor in the environmental pollution of rivers. The state government has been investing in the removal of floating waste from bodies of water through the use of physical barriers/eco-barriers, which capture this type of waste.

5.3.3 Strengthening and accelerating environmental conservation and rehabilitation programmes

CLEAN GAMES PROGRAMME

Responsible: federal, state and city government, private and third-sector partners

Through the Clean Games Programme, the Games will function as a catalyst for significant conservation, environmental restoration and recovery projects. To integrate the work of various institutions at different levels of government, a sub-group has been created within the Sustainability Working Group.

The programme is an initiative of the state government, through the State Environmental Institute and the State

Department for the Environment, which have formed partnerships with the following entities:

- Brazilian Agricultural Research Corporation (EMBRAPA Agrobiology)
- Agricultural Research Company of the State of Rio de Janeiro (PESAGRO RIO)
- Rural Rio Programme of the Rio de Janeiro State Department of Agriculture and Livestock (SEAPAC)
- Rio de Janeiro State Department of Economic Development, Industry and Services (SEDEIS), through the Rio de Janeiro State Development Agency (RIO INVESTS)
- Project Management Office (EGP) in the Rio de Janeiro State Executive Office
- Chico Mendes Institute for the Preservation of Biodiversity (ICMBIO)
- Brazilian Army
- Golden Lion Tamarind Association
- SOS Atlantic Forest Foundation
- Earth Institute for Preservation of the Environment
- Santa Cabrini Foundation

Coordination of these efforts, through biweekly monitoring of the implementation schedule, is carried out by the Office of Project Management in the Rio de Janeiro State Executive Office.

Besides the principal objective of forest restoration in areas of the Atlantic Forest in Rio state, the programme is directly linked to sustainability activities of the Games, since these will be the main instrument for offsetting residual carbon emissions.

The first phase of the Clean Games initiative is already in place and includes preliminary steps for configuring and structuring the programme, among which are:

- Creating a consultation and deliberation council to monitor the project and promote an environment of cooperation and transparency between the different actors
- Providing preliminary estimates of carbon emissions resulting from the Olympic and Paralympic Games
- Creating a database of areas suitable for forest restoration
- Conducting a survey of technical and financial partners
- Standardisation of restoration activities
- Survey of forest nurseries

The second phase, which will comprise the consolidation and implementation of projects, will be structured around the following:

- Support for forest nurseries
- Training of the labour force
- Production of seedlings
- Planting
- Monitoring cultivation

Anticipated results of the Clean Games Programme include:

- Conversion of ecosystems associated with the Atlantic Forest biome, which are being transformed, but are in the early stages of ecological regeneration
- Conservation of the Atlantic Forest biome
- Strengthening and increasing the production of native plants (development of 15 municipal nurseries in the north and northwest of Rio state, and other existing nurseries based on demands to ensure higher, advance production capabilities)
- Fostering cultivation of rubber (production of approximately 2.6 million rubber seedlings by December 2015)
- Promotion of sustainable production (encouraging intercropping planting with native species of commercial interest based on non-timber products)
- Identification of trees for seed supply (spatialisation and systematic recognition)
- Increasing economic productivity in rural areas (forest restoration using commercial species and reducing the costs of environmental compliance and property restoration)
- Establishing the environmental suitability of countless properties (mapping and support for a registry of legal reserves and permanent preservation areas by registering properties in their respective, general real estate records)
- Labour force training: at least 240 professionals will be trained in three modules of one-week each, totaling 96 hours, and covering:

    1. Procedures for identifying seed plants, collection, processing, drying and storage of tree seeds
    2. Production and distribution of forest species seedlings
    3. Landscape evaluation to define strategies for forest restoration and the development of executive projects

- Job creation: at least 2,000 direct jobs in clean-up activities and the delineation of areas for planting and tree-tagging to establish seed collection and processing matrixes, seedling production, planting, maintenance and monitoring of areas to be restored
- Protecting and maintaining sources of water (through the restoration of riparian vegetation)
- Minimisation of river silting processes (restoration of riparian vegetation)
- Landscape conservation (connecting isolated forest fragments)
- Maintaining biodiversity (enlargement of the areas around conservation units)
- Dissemination of best environmental practices (from countless training activities and technical advice)

RIO: GREEN CAPITAL PROGRAMME

Responsible: municipal government

This is an environmental recovery program for degraded areas through the contracting of specialised subcontractors to carry out reforestation programmes and through a community-based, collective effort, which involves groups organised by neighborhood associations to perform planting and maintenance activities under the guidance and control of public authorities.

Begun 25 years ago by the 'Mass Reforestation Initiative', the programme has promoted the reforestation of the city of Rio de Janeiro's hillsides. By the end of 2011, the programme had planted approximately 2,509 hectares through the planting of 5,250,000 seedlings.

To extend the goals of the programme, the 'Mass Reforestation Initiative' became part of a new programme called 'Rio: Green Capital', which added new areas of reforestation, by joint efforts, and through the hiring of specialised companies to implement reforestation objectives.

The reforestations of hillsides are using approximately 150 different species of trees, most of which are native to the Atlantic Forest. These seedlings are produced in five forest nurseries. Together, these units have a potential production of over one million seedlings per year. The Colônia Juliano Moreira nursery is in the construction stage.

The goal of the programme is the reforestation, by 2016, of 1,600 hectares.

Key performance indicators: Hectares planted per year

5.3.4 Increasing air and water quality monitoring in the Games zones

Responsible: state and municipal governments

To host the Rio 2016 Games, one of the commitments made by the federal, state and municipal governments was to improve air and water quality monitoring systems in the four Games zones.

Agreed actions to date include:

Under the auspices of the state government (INEA), to adapt and expand the air quality monitoring network, to continuously measure concentration levels of pollutants, especially those of inhalable particulates and ozone, as well as monitoring weather conditions in the Games zones.

Implementation of a noise monitoring network. The state government (INEA) will contract a third-party service to monitor noise in the coverage areas of the Olympic venues, the infrastructure projects and from existing traffic patterns, which connect the Games locations.

Monitoring water quality and implementing oceanographic monitoring of the coastal range. The state government (INEA) is responsible for the modernisation and expansion of monitoring system along the beaches in the areas of Zona Sul and Zona Oeste in the city of Rio de Janeiro, with an emphasis on the beaches of Copacabana, Leme and Flamengo, where Olympic competitions will be held. The Olympic Public Authority (APO) will sign an agreement with the Brazilian Navy to monitor oceanographic data for the 2016 Games.

The municipal government will carry out continuous monitoring of the water quality of the Rodrigo de Freitas Lagoon at five sampling stations and in the canals and rivers connected to the lagoon.

Key performance indicators: Number and location of new monitoring units installed

5.4 WASTE MANAGEMENT

5.4.1 Environmental clean-up of large dump sites and setting up an integrated solid waste treatment system

Responsible: state and municipal governments

The National Solid Waste Policy, the subject of Federal Law 12.305 of August 2010, calls for the shutting down of all large untreated dump sites in Brazil by 2014 and substituting them with sanitary landfills. The same law makes it mandatory for all municipalities to prepare a solid waste management plan that includes waste treatment and recycling.

The new Rio de Janeiro Waste Treatment Centre (CTR), located in Seropédica, is under the responsibility of the municipal government and has been built pursuant to modern sanitary and environmental engineering technologies (see box 3). It began operations in April 2011. In June 2012, upon the shutdown of the Gramacho and Gericinó dump sites, the CTR began receiving 100 per cent of the solid waste generated in the city of Rio de Janeiro — some 9,000 tonnes per day. By 2016, the CTR will be supplemented with seven transfer stations, of which four (Jacarepaguá, Caju, Marechal Hermes and Santa Cruz) are already in operation.

The environmental clean-up of Gramacho, which is the responsibility of the municipal government, is based on a system that will recover and process biogas, an initiative that was previously untried in Brazil; this involves purifying the biogas, bringing it up to the calorie level of natural gas, thus permitting its sale to Petrobras, to be used as process gas in the Duque de Caxias refinery. This project is part of the Clean Development Mechanism established by the Kyoto Protocol, permitting the sale of carbon credits, with revenues to be shared between the concessionaire, COMLURB, and a growth fund for the Jardim Gramacho neighbourhood. Over the 15-year term of the landfill exploitation concession contract, the concessionaire shall be responsible for maintaining the safety of the area; geotechnical and environmental monitoring; control of soil stability; guarding against leakage into adjacent, underground water tables; establishing embankments; and planting vegetation to cover the entire surface area.

The shutdown of the operations at the Gramacho landfill represented an end to the only source of income for an estimated population of 1,700 waste pickers, who, over

many years, had scavenged materials on the site that represented subsistence for them and their families. With the decommissioning of Gramacho, COMLURB deposited a single payment into a Waste Pickers Fund, which was scheduled for disbursement over a period of 15 years, distributed equally among the group of waste pickers registered on a list that was certified by their leaders.

The environmental clean-up of 75 clandestine dumps located in the vicinity of Gramacho is the responsibility of the state government, as is the environmental clean-up of a mangrove swamp in the neighborhood, the construction of a security fence in the mangrove area and an asphalted bicycle path next to the fence.

Key performance indicators: Percentage of the city's solid waste adequately disposed of (pursuant to the National Solid Waste Policy)

SEROPÉDICA CTR technologies used

Among the main technologies employed by the Seropédica CTR is waterproofing of the ground using a triple layer of reinforced high-density polyethylene sheets (PEAD) with sensors that feed data to software programs that issue alerts indicating soil abnormalities. Moreover, at the site, slurry — the liquid that results from waste decomposition — will be treated and transformed into reusable water, while biogas will be transformed into energy through a project that conforms to the Clean Development Mechanism's guidelines, also making it possible to obtain carbon credits.

BIOGAS

Comprised of about 50 per cent methane, biogas is one of the main pollutants generated by waste decomposition, which contributes to the greenhouse gas effect. At the CTR, this environmental liability will be transformed into an economic asset. The biogas can be sent to a power generation facility or treated and purified, giving it properties similar to natural gas, available for sale to the market.

For power purposes, the gas that is captured in the landfill is of a highly inflammable quality and, therefore, can be used as fuel for electricity generation equipment. The bioenergetic use designated in the CTR project enables the generation of 30 MW of power when operating at full capacity, enough to supply a city of 200,000 inhabitants.

FROM SLURRY TO REUSABLE WATER

The treatment of the slurry, one of the main environmental liabilities stemming from the poor management of sanitary landfills, will also be the object of innovative technology through the implementation of the CTR project, transforming the toxic liquid into reusable water.

5.4.2 Alignment and implementation of waste management plans of all construction projects, ensuring appropriate final treatment

Responsibility: state and municipal governments, Rio 2016™

In the project's demolition and construction phases, the following waste management guidelines shall be adopted:

- Recovery of demolition materials for reuse and/or recycling
- Use of recycled materials and/or secondary aggregates for building large parking lots and infrastructure
- Contractual guarantees for the recovery of materials stemming from the take down of provisional structures during transition and post-Games periods

All construction plans deriving from the Rio 2016™ Olympic and Paralympic project shall be approved and monitored through environmental licensing procedures, pursuant to federal and municipal legislation, designed to achieve adequate waste reductions, reuse, recycling and final disposal.

Key performance indicators: Total weight of waste, by disposal type and method, Weight of waste transported, exported or treated that is considered to be dangerous under the Basle Convention — Appendices I, II, III and VIII, The percentage of shipments of waste transported internationally

5.4.3 Responsible management and treatment of solid waste from the Games

Responsible: Rio 2016™

Waste management is, without a doubt, one of the most visible elements of a sustainability programme. Rio 2016™ recognises the potential of the Games in demonstrating that appropriate waste management, from planning to legacy, generates concrete benefits, both financial as well as environmental.

An event as large as the Games, especially one with such enormous repercussions, represents a unique opportunity to implement systems, improve infrastructure and establish operating standards that make it possible to reduce the quantity of waste generated and maximise reutilisation and recycling techniques.

Another priority is to use educational, cultural and communication opportunities with the public to foster lifestyles that generate low waste production, offering incentives for the adoption of selective waste collection and recycling procedures.

The following hierarchy, organised by order of environmental preference, is an assumption for waste management at the Games:

- Reduce
- Reutilise
- Recycle and/or earmark for composting, creating opportunities to generate income for waste pickers
- Use new energy recovery techniques
- Send to a waste treatment facility
- Conventional incineration

To guarantee the success of the implementation of these assumptions, minimisation, reuse and recycling criteria have been defined by Rio 2016™, as of the initial moments of planning, for the acquisition of the waste generating areas. For example, packaging and utensils used for meal services will be based on defined criteria that facilitate waste generation reduction and recycling. The Games' 'look and feel' materials portfolio will also be in line with recycling and reutilisation principles.

Rio 2016™ is preparing a waste management model plan that will establish the strategies for the segregation, management and logistics involved in the transportation of waste from the Olympic and Paralympic venues. This document will serve as the basis for the preparation of individual plans per venue. Measurable reuse and recycling targets shall be established and widely disseminated upon the publication of the next version of this Sustainability Management Plan.

Key performance indicators: Total weight of waste, by disposal type and method, Weight of waste transported, exported or treated considered to be dangerous under the Basle Convention — Appendices I, II, III and VIII, Percentage of shipments of waste transported internationally

5.4.4 Responsible management and treatment of solid corporate office waste

Responsible: Rio 2016™

Rio 2016™ uses the same waste reduction, reuse and recycling assumptions for its offices as established for overall Games operations. The waste management programme for the Rio 2016™ headquarters conforms to current environmental legislation and seeks to apply the best alternatives for disposing of waste based on NBR 10004.

Performance indicators: Total weight of waste, by disposal type and method, Weight of waste transported, exported or treated considered to be dangerous under the Basle Convention — Appendices I, II, III and VIII, Percentage of shipments of waste transported internationally

© Erik de Barros Pinto

People

6 People: Games for everybody

One of the strategic objectives of this SMP is to organise an all-inclusive Games, leaving the city's population with a positive social balance.

More than anything else, the Olympic and Paralympic Games are a celebration for the athletes. However, the power to inspire and the capacity of the Games to enthrall and mobilise make them a truly powerful instrument for the integration of individuals and groups.

The 2016 Games will integrate the Brazilian and Carioca (Rio de Janeiro) societies through programmes encompassing educational and cultural elements, job creation, volunteer opportunities, training and professional recycling activities, as well as projects seeking to inspire young people from underprivileged communities and integrate them with wider society.

Social transformation through sports is a theme that is at the heart of the Rio 2016 Games. The Games can be a positive factor for social change, for example by bringing about important improvements in security in the city, with a sustained decline in crime rates and the creation of new systems and new skills for supporting public safety.

One of the priorities, essential to the strategies of the Rio 2016 Games, is to reach out to the youth of not just the city of Rio de Janeriro, but to all of South America and the world, seeking to foster their identification with Olympic and Paralympic values before, during and after the Games.

There is little doubt the Paralympic Games will be an important milestone for the celebration of harmonious diversity, contributing to changes in the perception of people with a physical disability and highlighting the skills and aptitudes of such individuals. This will also be a unique opportunity for Rio de Janeiro to promote a significant improvement in the

quality of accessibility in the city, becoming a living example of the potential of people with a disability, as well as the elderly and those with young children – awakening awareness that accessibility is so important to so many.

Table 3 below lists the broad topics regarding the strategic objectives for people and the respective, specific goals.

TABLE 3 - PEOPLE: GAMES FOR EVERYBODY

BASIC THEMES	Specific objectives
Involvement and awareness	Involve clients of the Games and stakeholders in adjusting and implementing the Sustainability Management Plan
	Develop educational activities for sustainability
	Develop a sustainability training and qualification programme for employees, volunteers and contractors
Universal accessibility	Ensure universal accessibility at all Olympic and Paralympic venues, including the surrounding areas, pursuant to Brazilian legislation and regulations, and the IPC's guidelines, obeying the most comprehensive set of rules
	Ensure accessible and inclusive transport, according to the principles of universality
	Ensure accessible accommodation, according to the IPC standards for the Paralympic family
Diversity and inclusion	Recruit a diversified labour force and foster its inclusion
	Align services provided to athletes with their cultural diversity

6.1 INVOLVEMENT AND RAISING AWARENESS

6.1.1 Involve Games clients and stakeholders in the review and implementation of the SMP

Responsible: Rio 2016™

A fundamental aspect of the 'Games for Everybody' agenda is the development of the Rio 2016™ Organising Committee's relationships with all stakeholders, involving them in the adjustment and implementation of the SMP, thereby meeting the commitment to maintain an open and constructive dialogue with the various parties, so that different points of view can be taken under consideration.

In view of the wide range of basic topics and audiences directly or indirectly involved in the Games, Rio 2016™ undertook a detailed review of its stakeholders (see summary in figure 3). This evaluation made it possible to prepare an engagement strategy based on two main approaches:

Reactive approach – creation of a communication channel to deal with questions and concerns related to sustainability issues.

Proactive approach – mechanisms to facilitate a dialogue of engagement with stakeholders and to involve them in the delivery of sustainable Games. Encompasses both general initiatives, as well as those for specific stakeholder groups.

Rio 2016™ recognises the need for a wide-ranging stakeholder relationship programme and is working with partners, such as the United Nations Environment Programme (UNEP), to prepare the engagement package, which includes the creation of working groups and panels of specialists.

Key performance indicators: meetings and forums, open surveys and hearings, working groups and panels of specialists, percentage of questions and concerns fielded/answered

6.1.2 Sustainability education activities

The power of the Games to inspire and their capacity to enthral and mobilise different members of the public represents a unique platform for the dissemination of sustainability values and messages, helping to inform and influence a vast audience. The Games also function as a major showcase to demonstrate the importance of sustainability.

Therefore, a series of formal and informal educational actions about varying topics related to the sustainability agenda will be developed throughout the period of preparation, as well as during the Games themselves. More specifically, activities will be carried out to publicise and promote the following subjects that were designated priorities in Rio's bid to host the Games:

- Waste recycling and management
- Water resources
- Universal access
- The social inclusion of people with disabilities

DISSEMINATION AND AWARENESS

Responsibility: Rio 2016™

To help inspire change in the way sustainability is perceived, Rio 2016™ will increasingly include more components of sustainability in its internal and external communications, as well as its educational and cultural activities.

At the same time, supplemental awareness building and responsible behaviour campaigns will be run together with commercial partners, international organisations and other stakeholders.

Different channels will be used to promote, display and report on the Rio 2016™ sustainability agenda, as well as encourage changes in the behaviour of spectators, athletes, delegations,

suppliers and the work force. Specific objectives in the field of accessibility and inclusion are:

- To combat stereotypes
- To raise the self-esteem of people with a disability
- To supply spectators and other clients of the Games with information about accessibility within the venues
- To create awareness about the skills, needs, rights and capacities of people with a disability

Key performance indicators: Type, number and impact of, and results achieved by initiatives for raising awareness, sharing knowledge and changing behaviour

EDUCATION FOR SUSTAINABILITY

Responsibility: federal and state governments and Olympic Public Authority (APO)

The Ministry of Education (MEC) and APO are coordinating a consortium of public education and research institutions, focusing their efforts on the educational legacy of the Rio 2016™ Games.

The Rio 2016™ Games will be focused on sustainability and the environment and this will be reflected at a number of different levels, including in the content of the institutions' curricula, through to training courses aimed at preparing professionals for the work place and, specifically, the demands of the services generated for the correct and sustainable delivery of the Games.

As an example of a specific development project, there has already been integration with the universities of ICMBIO and EMBRAPA to develop native tree seedlings. This has been coupled with specific training of specialised individuals for the reforestation anticipated under the commitments made by the Rio 2016™ Games.

The state government is also developing the *Programa Olimpíada Agenda Agua na Escola*, a programme designed to develop the commitment of young students in 24 schools located around the Olympic zones (six per zone), preferentially near rivers and creeks, involving actions focused on the environmental management of water.

Key performance indicators: Type and number of projects, impacts and results achieved

NATIONAL ENVIRONMENTAL EDUCATION POLICY

Brazil has a National Environmental Education Policy, created by federal law 9.795, dating from 1999. Environmental education is understood to be the processes through which an individual or group builds social values, knowledge, skills, attitudes and competences aimed at conserving the environment, as well as for the common use of the people, essential to a healthy quality of life and sustainability. As part of the wider educational process, everybody has the right to environmental education, and it is up to government under the terms of articles 205 and 225 of the Federal Constitution to define public policies that incorporate the environmental dimension, promote environmental education at all teaching levels and the engagement of society, and the conservation, recovery and improvement of the environment.

The basic principles of environmental education are:

- A humanistic, holistic, democratic and participative focus
- A conception of the environment in its totality, taking into consideration the interdependency between the natural, socio-economic and cultural nature environments, from a sustainability viewpoint
- Pluralism of pedagogical ideas and concepts, within an inter, multi and trans-disciplinary perspective
- Linkage between ethics, education and work and social practices
- The guarantee of the continuity and permanence of the educational process
- Permanent critical evaluation of the educational process
- An articulated approach to local, regional, national and global environmental issues
- Recognition and respect for plurality and individual and cultural diversity

6.1.3 Sustainability training programme for workforce

Responsibility: Rio 2016™

The Games workforce — composed of paid Rio 2016™ employees, volunteers and employees of contracted companies — has a fundamental role in achieving the sustainability objectives. Overall, there will be more than 100,000 people involved in delivering the largest sporting event in the world during the months of August and September 2016.

Rio 2016™ will merge sustainability and accessibility content in the basic training and orientation programme of the entire Games workforce.

Specific training modules will be developed, such as:

- Waste management
- Assistance for people with a disability and limited mobility
- Taking care regarding native fauna during the sports competitions held in natural venues
- Sustainability management in events pursuant to ABNT NBR ISO 20121 rules

The training programmes, both live classes and using e-learning platforms, are scheduled to begin in 2014.

Key performance indicators: Training hours per year, per job category

6.2 UNIVERSAL ACCESSIBILITY

6.2.1 Guaranteeing universal accessibility in and around all venues, pursuant to Brazilian legislation and IPC guidelines

One of the legacies with widespread social outreach will be the improvement of accessibility in the city of Rio de Janeiro, which will become a model to be followed by other cities in Brazil and around the continent. This work will not only include the venue facilities during the Games, but will go over and above this, encompassing the public transport system, the city's hotels and main tourist attractions.

The federal government has consolidated inclusive public policies for mobility and universal accessibility. Since 2000,

a number of laws dealing with the subject have led to a configuration of a substantial legal framework capable of fostering a continuous process of the adaptation of Brazilian cities to the principles of universal accessibility (see Annex III).

Among the main initiatives taken to meet the objective of providing Games that are accessible to everybody, independent of any physical disability or type of mobility limitation, are the following projects:

RIO 2016™ ACCESSIBILITY TECHNICAL GUIDELINES MANUAL

Responsibility: Rio 2016™

Rio 2016™ has prepared a technical manual with the specifications to be adopted for construction projects of all permanent, temporary and overlay facilities. Based on a comparison between federal, state and municipal legislation, including criteria established by the International Paralympic Committee (IPC), and always opting for the most comprehensive rules, the notebook presents simple, direct and illustrated technical specifications for:

- Access and circulation
- Sporting arenas
- Accommodation
- Transport
- Publications/communication

All tenders for projects and construction works undertaken by government entities will include accessibility principles, referring to this technical manual as a basic reference.

ACCESSIBILITY DUE DILIGENCE AT ALL VENUES

Responsibility: Rio 2016™

The Rio 2016™ venues are being planned to be fully accessible, both for the Olympic and Paralympic Games, offering athletes, managers, coaches, judges, journalists, spectators and workforce the opportunity to participate in the Games independent of any disability or restricted mobility issues.

The integration of accessibility requirements will take place during the conceptual, basic and execution projects for all permanent, temporary and overlay venues.

During the construction period of the projects, careful due diligence shall be carried out in a manner to guarantee that the accessibility requirements of the project will be executed correctly.

Moreover, since most of the projects will be built with federal government funds from the General Budget, or funds managed by federal institutions, such as FGTS and FAT, these funds will only be liberated upon compliance with accessibility legislation.

Once all equipment and furnishings have been installed, operational due diligence will be carried out to ensure that all accessible routes are unobstructed.

CALÇADAS CARIOCAS (PAVEMENTS IN RIO)

Responsibility: municipal government

A manual will be prepared containing technical guidelines for accessibility in the creation of public spaces, including a compilation of the pertinent legislation and best practices.

ACCESSIBLE RIO

Responsibility: municipal government

This project involves the revitalisation of 700,000m2 of pavements and 5,000 ramps between 2013 and 2016.

Actions include:

- Repairs to pavements and walkways, removing obstacles and adding concrete ramps, level crossings, construction of tactile (touch sensitive) flooring, smooth lanes for wheelchair users and curb corrections.
- Regular training of all architects and coordinators of construction/conservation sites working for the various construction and conservation and public services secretariats regarding accessibility standards to be followed in city construction projects.

GAMES MOBILITY SERVICES

Responsibility: Rio 2016™

During the Olympic and Paralympic Games in 2016, mobility equipment, such as manual and motorised wheelchairs and the services of adapted minibuses, will be available between public transport stops and main entrances, and made available to people with disabilities and reduced mobility.

Rio 2016™ is analysing the mobility needs per venue, taking into account the distances to be covered and inclines, to be able to project the amount of equipment needed and communicate in advance to possible suppliers what are the requirements. A protocol establishing criteria for the planning and operation of the services will be left as a legacy for future events.

6.2.2 Accessible transport and principles of universal design

ACCESSIBILITY TO PUBLIC TRANSPORT

Responsibility: municipal government

The Municipal Transport Secretariat anticipates that the entire city bus fleet, under concession, will be accessible by 2014. Bus drivers are receiving accessibility training — not only knowledge about the subject but also being made aware of the need for inclusive behaviour.

The new Bus Rapid Transit (BRT) services feature a special fleet of vehicles equipped with lowered floorboards that are level with station platforms. The entire system, including the station platforms, the area surrounding the stations and vehicles incorporate universal accessibility standards.

Key performance indicators: Percentage of the city's bus fleet and BRTs that is accessible

ACCESSIBILITY OF THE OLYMPIC AND PARALYMPIC FLEET

Responsibility: Rio 2016™

The Rio 2016™ transport strategy seeks to provide safe, reliable, inclusive and accessible transport services to all Olympic and Paralympic Games clients. The Paralympic Games Master Plan is based on the same principles, systems and operating plans as the Olympic Games Master Plan.

Therefore, the entire Olympic and Paralympic fleet of cars and buses will be accessible, both for passengers as well as drivers, following the municipal, state and federal laws, and the Rio 2016™ and IPC requirements and, finally, incorporating the standards of universal accessibility.

Key performance indicators: User satisfaction regarding accessibility of fleet

ACCESSIBILITY AT AIRPORTS

The existing airport infrastructure also is being evaluated and planned for in terms of the Rio Games. Compliance with accessibility requirements is within the scope of the adaptations and reforms considered to be necessary. All of the projects under development by Infraero take into account the facilities and requirements defined in ANAC No. 09/2007.

The main points to be highlighted are:

- Creation of accessible routes
- Boarding points with appropriate inclines
- Family bathrooms and adult nappy changing rooms in restricted areas as well as public halls
- Accessible furnishings (information counters, check-in areas, BVRI, federal police offices, etc.)
- Alert and directional touch signage
- Accessible information counters staffed by attendants who have been trained in special needs services
- Exclusive seating for people with disabilities and reduced mobility
- Acquisition of lifting equipment (ambulift) that makes it possible to access airplanes in remote/distant positions
- Buses with a ‘kneeling’ system making vehicles more accessible

Infraero has implemented a specific training programme for the airport community to provide services to people with a disability. Initiatives to stimulate partnerships with transport companies to provide adapted taxis for people with a disability and/or reduced mobility have also begun.

6.2.3 Accessible accommodation, pursuant to IPC standards, for Olympic and Paralympic family

Responsibility: Rio 2016™

The Olympic and Paralympic Village is being designed to incorporate the principles of universal design. All of the buildings to be used for the Paralympic Games will have rooms and bathrooms that are accessible on the first six floors, without the need for transitional construction work between the two events.

Accessibility will be taken into consideration in planning the locations of these accommodation sites, which includes the preparation of accessible disembarkation and parking areas, venues and amenities for the public.

Rio 2016™ also will assist the city's hotel sector, supplying the technical parameters to promote the adjustments needed in the hotels for the Games, preparing them for a significant increase in demand for accessibility at the time of the Paralympic Games. Activities to support the hotel sector include:

- Dissemination of a manual containing the technical specifications for accessibility together with a specific checklist for accommodation
- Offering the opportunity for establishments to obtain a free diagnosis of the accessibility requirements for their facilities
- Offering technical support in construction projects for interested establishments
- Formation of a team of trainees from architecture and engineering courses to assist hotel establishments
- Encourage the certification of accessibility to obtain a seal of approval to be issued by the federal government

Key performance indicators: Percentage of accessible rooms in the city

6.3 DIVERSITY AND INCLUSION

6.3.1 Recruiting a diverse labour force and promoting inclusion

Responsibility: Rio 2016™

The Rio 2016™ Games will foster harmonious diversity through the promotion of the principles of respect, union, equality and a youthful spirit:

- Respect for differences, recognising each individual's worth and investing in the sum total of the talent pool for the common good, accommodating all and stimulating inclusion
- Equal opportunities for all people, independent of their race, gender, disability, faith or belief, sexual orientation, age or stage of life
- Unity of ideas, races, peoples and cultures in a harmonious melting pot of different influences and origins
- Youthful spirit, expressed by the joyous exuberance of Cariocas (residents of Rio de Janeiro) for life, always with the aggregating viewpoint and spirit of youth, full of energy and enthusiasm, an invitation to join together and be a part of something

This celebration begins with the recruitment of a diverse workforce and in the creation of an organisational culture that is inclusive, through a conscious effort to anticipate and break down barriers that individuals may confront and to facilitate their participation in the Games.

The principle of non-discrimination and equal opportunity applies to the recruitment of the entire workforce: employees, volunteers and contractors. Different strategies are being created to make these recruiting opportunities possible, both regarding the traditionally non-favoured portions of Brazilian society as well as people with different experiences and perspectives on life. However, Rio 2016™ does not adopt quota hiring policies.

Among the activities that have already begun are: the organisation of awareness raising workshops and dialogues about diversity with all employees; training and building awareness among recruiters and managers of departments to identify and eliminate barriers for the hiring of a diversified workforce; the organisation of a workshop with representatives of the third sector to identify strategies to strengthen the hiring of people with disabilities; the hiring of specialised consultants for recruiting people with an impairment; investment in accessibility at the Rio 2016™ headquarters.

BRAZILIAN AGENDA FOR DIVERSITY AND INCLUSION

Brazil is a country that has accepted the fact that its population is a result of a "mixture of races". This mix is sustained, according to Darcy Ribeiro, by four underpinnings, which are: the matrixes that make up our people, the proportions of this mix in our country, the environmental conditions in which it occurred, and the living and production objectives assumed by each one of these matrixes.

Thus, the Brazilian focus is not to assure the cultural diversity of ethnic groups, but rather to consolidate equality of rights and guarantee the social and economic processes that foster a reversal of the traditional situation of discrimination. We can include in this scope the Racial Equality Statute and the National Plan of Policies for Women, which must be reflected in all of the major events held in Brazil.

The objective of the Racial Equality Statute, instituted by law 12.288 of 2003, is to guarantee for the black population effective equality of opportunities, the defence of individual, collective and diffused ethnic rights and the combat of discrimination and other forms of intolerance. It also calls for affirmative actions, programmes and special measures to be adopted by the government and private initiatives regarding education, culture, sports and leisure, health, safety, housing, means of mass communication, public financing, access to land, justice, and others.

The National Plan of Policies for Women, published in 2005 by the Special Women's Policy Secretariat of the Office of the President of the Republic, is guided by the following fundamental points: women and men have equal rights; the promotion of equality implies respect for cultural, ethnic, racial, social, economic and regional diversity, as well as the different moments in the lives of women; all persons must be guaranteed equal opportunities, obeying the universal rights and the specific issues of women; the power to make decisions about their lives and bodies must be assured to women, as well as the conditions that influence occurrences in their community and country; public policies for women must be formulated and implemented independent of religious principles; public policies must guarantee all women, upon implementation, full access to social, political, economic, cultural and environmental rights.

Key performance Indicators: Total number of workers per type of job, work contract and region, Total number and rate of job rotation by age bracket, gender and region, Make-up of groups responsible for corporate governance and employees by category, according to gender, age bracket, minorities and other diversity indicators, Ratio of base wage between men and women, by job category, Type and impact of initiatives to create a socially inclusive environment, Total number of cases of discrimination and measures taken

6.3.2 Align services for athletes with their cultural diversity

Responsibility: Rio 2016™

Alignment with cultural diversity is an aspect that will be offered as part of the services provided to the athletes, when relevant. This includes, for example, providing food according to the culture of each country, offering space for religious practices (e.g. pointing to the direction of Mecca, providing kosher and halal food for Jews and Muslims, respectively).

Key performance indicators: Number and impact of measures taken

7 Prosperity: responsibility and transparency

The transmission of marvellous and breathtaking images will give a lasting push to tourism in Rio and Brazil, strengthening the reputation of the country as being a passionate destination, a good place to live, do business and a great place to visit.

The Rio 2016™ Games will also directly affect the inhabitants of the city, who will benefit from the training programmes, the creation of temporary and permanent jobs and new business opportunities in the fields of sports management, tourism, venue operations, construction and commerce.

The sheer scale of the Games and the growing importance and visibility of sustainability require a transparent approach and responsible management of sustainability, which includes adopting certification schemes and the regular issuing of reports, containing impartial measurements of the performance targets related to each one of the declared objectives.

In order to comply with this credibility requirement, besides the correct monitoring of performance, it is also necessary that there is transparency regarding the effects of the activities, both with regard to the impacts as well as their legacies. Therefore, a series of environmental, social and economic indicators will be monitored, covering a period of 12 years.

The following table lists the main subjects regarding the strategic objectives of prosperity, with the respective specific objectives.

TABLE 4 – PROSPERITY: RESPONSIBLE AND TRANSPARENT MANAGEMENT

BASIC THEMES	Specific objectives
Sustainable supply chain	Implement a programme for a sustainable chain of supplies
	Disseminate and support new sustainability standards in the Brazilian event sector
Management and transparency	Develop a Sustainability Management Plan (SMP)
	Coordinate and guarantee the correct implementation of the SMP
	Respect requirements of IOC's technical manual on Protection of the Environment and Sustainability
	Certification of the Rio 2016TM Olympic and Paralympic Games Organising Committee regarding ABNT rule NBR ISO 20121
	Use internationally recognised methodologies to provide transparency to the process for implementation of the SMP
	Adopt efficient management and operational processes in terms of water and energy use in sporting and non-sporting venues

7.1 SUSTAINABLE SUPPLY CHAIN

7.1.1 Sustainable supply chain programme

Responsibility: Rio 2016™

The Rio 2016™ Organising Committee is responsible for what is purchased, how it is purchased and who makes the purchase. Therefore, it takes into account environmental, social, ethical and economic aspects involved throughout the life-cycle of the products and services that are the subject of the acquisition and licensing processes, integrating them into its business practices.

Thus, sustainability constitutes one of the criteria that are considered in all of the decision-making processes, together with other fundamental aspects, such as total cost, quality, deadlines and risks. The principal used is to work in a manner that insures that Rio 2016™ is always able to supply the product or service that adds the greatest value.

For Rio 2016™, implementing a sustainable supply chain also means that the acquisitions and contracting of services are converted into a tool that is capable of promoting and encouraging the use of sustainable technologies, products, processes and services, thereby contributing to the development of the supplier market and strengthening the Games' legacy.

The Rio 2016™ sustainable supply chain is structured into five stages:

Establishment of the requirements
- Identification of the strategic purchase categories from the accessibility and sustainability point of view
- Definition of the sustainability requirements and parameters for the strategic categories
- Assessment of the weight of the requirements and parameters for evaluating global cost

Development and training of suppliers and licensees
- Assessment of the capacity of the market to meet the sustainability and accessibility requirements
- Assessment of the capacity of the market to meet the demand for products with accessibility (universal design) and sustainability (seals of approval and certification) credentials
- Advance and large-scale communication of the needs until 2016, together with the requirements
- Workshops and training sessions for suppliers and licensees, notably for sectors identified as being critical

Contracting
- Review of the RFPs to ensure inclusion of sustainability and stability requirements
- Analyses of the total acquisition cost

Management/monitoring of the contracts for compliance of suppliers and licensees
- Inclusion of sustainability aspects in registry management
- Audits and reports
- Application of corrective measures

Dissolution/or final disposal of products
- Full logistical planning of final disposal of all of the products, packaging and waste
- Control of the final disposal of all products, packaging and waste

The general requirements of the Rio 2016™ Sustainable Supply Chain Guide are applicable to all of the purchases, sponsoring, donation and licensing categories of Rio 2016™. See Annex III for a full copy of the guide.

Key performance indicators: policies, practices and proportion of expenses with local suppliers in important operating units; type and performance of sustainability initiatives in supply chain; percentage of companies contracted that were submitted to the assessments referring to human rights; operations identified as a significant risk for the occurrence of child labour or forced labour and the measures taken to avoid/reduce these risks.

FEDERAL GOVERNMENT SUSTAINABLE SUPPLIES GUIDELINES

The federal government, through inter-ministerial actions and agreements, has incorporated the sustainability dimension into a number of different directions that the topic encompasses. In the case of large events, the infrastructure, services and operations planned by the governments can assume a political posture in terms of sustainability, for purchases and signing of public contracts. The new legal basis establishes criteria, practices and guidelines for new committed posture towards the sustainable development of the country.

DECREE 7.746, OF 5 JUNE 2012, establishes criteria, practices and guidelines for the promotion of national sustainable development in contracts signed by the direct federal administration, authorities, foundations and dependent state companies.

Thus, the government and the dependent state companies can acquire goods and higher services and projects taking into consideration the sustainability criteria and practices objectively defined in the convoking instrument. Among others, the following are understood to be sustainability guidelines:

I – Lower impact on natural resources such as flora, fauna, air, ground and water
II – Preference for materials, technologies and raw materials of local origin
III – Greater efficiency in using natural resources such as water and energy
IV – Greater generation of jobs, preferably local manpower
V – Longer working life and lower maintenance costs for assets and projects
VI – Use of innovations that reduce pressure on natural resources
VII – Environmentally correct use of natural resources used for goods, services and construction projects

The scope of the law is broad and even includes the creation of a Public Administration Inter-Ministerial Sustainability Commission (CISAP), a permanent advisory body linked to the Secretariat for Logistics and Information Technology, designed to propose and implement sustainable logistical criteria, practices and actions at the direct federal public administration, authorities, foundations and dependent state company level.

7.1.2 Disseminating and supporting new standards of sustainability in the Brazilian events sector

Responsibility: Rio 2016™

The Games have a high potential for influencing the behaviour of other companies, especially in the events sector, by disseminating and supporting new sustainability standards.

There are three areas in particular where Rio 2016™ could leave a substantial legacy:

- Encouraging the adoption of the NBR ISO 20121 sustainability standard for events, which was launched in June 2012. Besides providing an example by seeking its own certification and widely publicising this, Rio 2016™ will make training materials about the standard available to various suppliers and partners in the events sector (hotels, production and catering companies).
- The development of a sustainable food and beverage strategy. Rio 2016™ will establish, consulting with stakeholders, the sustainability criteria and guidelines that will underpin the provision of sustainable and organic food during the Games, strengthening the development of this industry in Brazil at the same time.
- Demonstrating the economic feasibility of sustainability initiatives and events, contributing to debunk the myth that 'sustainability is expensive', through the clear evidencing of case studies based on quantifiable data.

Key performance indicators: percentage of food and beverages that satisfy the policies of the organisers or local, national or international regulations; direct economic impacts and value creation, resulting from sustainability initiatives.

7.2 MANAGEMENT AND TRANSPARENCY

7.2.1 Development of Sustainability Management Plan (SMP)

Responsibility: Sustainability Working Group and Rio 2016™

This objective deals with the preparation of this Sustainability Management Plan and its publication on the Rio 2016™ website, allowing anybody to consult it.

This SMP is a live document that will accompany the development of the programmes and projects related to the Games. As the projects and programmes mature, the objectives and action plans will be broken down into separate features, gaining greater detail. A subsequent version of this plan is scheduled for the last quarter of 2013.

Key performance indicators: Number of SMP downloads

7.2.2 Correct implementation of Sustainability Management Plan

Responsibility: Sustainability Working Group (WG)

The effective follow-up and verification of the implementation of the guidelines, objectives, programmes, standards and activities listed in this plan will be the responsibility of the Sustainability WG. The WG's mission is to promote the understanding and integration between the entities involved directly and indirectly in the Rio 2016™ Games, with the objective being to ensure compliance with the commitments that are established here.

Key performance indicators: number of objectives established in the SMP that are met.

7.2.3 IOC technical manual requirements on environmental protection and sustainability

Responsibility: Rio 2016™

Rio 2016™ monitors compliance with the sustainability, accessibility and legacy commitments that have been made to the IOC and IPC. Progress reports are presented each quarter during meetings with the IOC and IPC, and documents are shared that demonstrate the progress towards meeting the commitments.

Among the activities are:

- Continuous updating of the list of sustainability and accessibility commitments being handled by the respective WGs
- Validation of the legacy commitments that are the responsibility of the Rio 2016™ Organising Committee with the responsible functional areas
- Monitoring, on a quarterly basis, of the commitments included as milestones in the Games Master Schedule
- Twice yearly reviews to follow up and validate the commitments
- Reporting to the IOC and IPC, validating the status of each commitment

Key performance indicators: Number and type of non-compliances verified

7.2.4 Certification of Rio 2016™ for ABNT NBR ISO 20121

The certification of the Rio 2016™ Organising Committee for the ABNT NBR ISO 20121 standard is designed to give strength and credibility to the process of implementing sustainability criteria during the entire cycle of the Rio 2016™ Games, based on the adoption of the nationally and internationally recognised rules for the sustainable management of events.

A sustainability management system (SMS) will be created following the guidelines of ISO 20121, and shall be adopted by all Rio 2016™ functional areas. The SMS will also make it possible to follow up the progress obtained in the implementation of the organising committee's Sustainability Management Plan.

Work plan:

- Train internal team about ISO 20121
- Create SMS and define OGI and GRI indicators (see item 7.2.5) to be incorporated into it
- Define timetable and work routines to obtain data for the indicators
- Define work process for implementing SMS
- Implement SMS
- Certification by an external entity

Key performance indicators: obtaining and retaining certification

7.2.5 Use of internationally recognised evaluation methodologies to provide transparency to implementation of the SMP

Hosting the world's largest sporting event responsibly presupposes reliable and coherent communication between the environmental, economic and social aspects of the Games organisation. It also presupposes the continuous monitoring of performance, to enable the identification of the strong and weak points and to adjust the direction towards more sustainable practices.

Therefore, the Rio 2016™ Organising Committee of the Olympic and Paralympic Games is committed to regular publication of information using internationally recognised standards of comparison and measurement.

Rio 2016™ uses three tools to provide transparency to the impacts caused by the Games and the performance of the committee in implementing this Sustainability Management Plan:

- Sustainability report using Global Reporting Initiative (GRI) methodology
- Olympic Games Impact (OGI) study
- Greenhouse gas (GHG) emissions management reports

SUSTAINABILITY REPORT FOLLOWING GRI METHODOLOGY

Responsibility: Rio 2016™

The Global Reporting Initiative (GRI) is the world's most disseminated and adopted methodology for sustainability reports, recognised for its scope and objectivity. In February 2012, and Event Organisers Supplement (GRI EOSS) was created, which includes specific indicators for the events sector.

GRI methodology has five steps:

- Prepare: creation of an action plan for the preparation of the report, including the construction of a timetable, the selection of the team and the organisation of the main report preparation phases.
- Engage: identification of the stakeholders, prioritising and establishing a method of communication and dialogue that will contribute to the preparation of the report.
- Define: selection of the subjects that will be in the report and the choice of performance indicators.

- Monitor: to guarantee the quality of the information, it is fundamental to collect and register precise information.
- Communicate: define how the report will be written and what are the disclosure mechanisms.

Reports following the EOSS model will use objective performance measures, which will make it possible to conduct an objective and professional assessment of the plan's actions and results.

Information about the ongoing work of the Rio 2016™ Organising Committee will be collected continuously and merged with the sustainability management system (SMS), which will become the basis for the periodic performance reports.

The sustainability reports in the GRI format will be published according to the following schedule:

- Base years 2012 and 2013: first half of 2014
- Base years 2014 and 2015: first half of 2016
- Base year 2016 (Games period): first half of 2017

Key performance indicators: Level of application of GRI in each report

OLYMPIC GAMES IMPACT (OGI) STUDY

Responsibility: Rio 2016™

The objective of the OGI study is to monitor tangible and intangible impacts stemming from the holding of the Rio 2016™ Games, using a system of social, environmental, economic and sports indicators integrated into a long-term perspective.

Produced for each edition of the Games, the OGI covers a period of two years before the choice of the city to host the Games until up to three years after the Games are held. In the case of Rio de Janeiro, this is from 2007 to 2019.

The OGI study is prepared by a university in a position to carry out independent work, free from political and commercial pressures, thus being qualified to conduct the study in an objective manner. In the case of 2016™, the study will be undertaken by UFRJ's COPPE (Federal University of Rio de Janeiro's Postgraduate Institute of Engineering Research).

The OGI programme comprises:

- Methodology report and data survey plan (August 2013)
- Initial situation, 2007 base (August 2013)
- Impact reports for the operational period, focused on the trends of the contextual indicators at the municipal and regional levels and case studies (August 2015 and August 2017)
- Final impact evaluation, three years after the Games (August 2019).

Key performance indicators: OGI reports published during the period

GREENHOUSE GAS (GHG) EMISSION REPORTS

Responsibility: Rio 2016™

Rio 2016™ will publish the following GHG emission reports (carbon footprint) for the 2016 Games:

- Baseline scenario, with calculation of potential emissions taking into account business as usual practices in the country
- Alternative scenarios for Rio 2016™ GHG emissions based on the potential adoption of different emission mitigation projects
- Proposals for compensation of residual commissions (those that cannot be mitigated)
- Final inventory of effective emissions of the Rio 2016™ Games (carbon footprint calculation)

The emissions will be calculated pursuant to the GHG Protocol international standard, adapted for the context of the London 2012 Organising Committee of the Olympic and Paralympic Games (LOCOG).

In essence, the GHG Protocol standard determines the responsibility for carbon emissions stemming from an activity in proportion to the contributions for its cost. However, this approach, which is appropriate for companies, does not capture the Games' public nature and potential influence. In order to reflect these indirect impacts, we will classify different degrees of control and responsibility following the model adopted for the London 20102 Games:

- Direct: activities entirely financed by the Games, as well as a part of the footprint of the jointly financed activities that are attributable to the Games.
- Shared: the footprint associated with contributions of partners to the co-financed activities (e.g. transport projects financed together, Olympic Village).
- Associated: activities that are associated with the Games, but not financed by the Games organisers, thus which the Games organisers could be capable of exercising some degree of influence over, but do not control, such as measurable activities related to Games client groups (e.g. sponsors, media and spectators).

Key performance indicators: all direct and indirect emissions of gases that cause greenhouse effects; initiatives to reduce greenhouse gas emissions and the reductions obtained.

7.2.6 Efficient management and operational processes regarding water and energy use at sports and non-sports venues

Responsibility: Rio 2016™

All of the sports and non-sports venues will be operated during the Games period using processes designed to increase water and energy use efficiency, achieving the low impact potential of the facilities.

To this end, operating, preventive maintenance and manpower training processes will be adopted. Savings criteria for water and energy use will be included in the operating plans of all venues (development of the plans foreseen for 2013).

Key performance indicators: amount of energy saved due to efficiency improvements; energy consumption by source; percentage and total volume of water used.

8 Final considerations

Because of the Games' ambitious goals, a sustainability programme with a very wide scope was developed whose initial definitions during the candidate stage have been broken down into various projects.

Although this is only the first version of the Sustainability Management Plan, considerable advances have already been achieved. Many of the actions and projects have been initiated and some have been completed, as the following table summarising the evaluation of project maturity shows.

TABLE 5 – MATURITY SUMMARY

PLANET		
THEME	**Specific objective**	**Maturity**
Transport and logistics	Offer public transport for spectators and workforce.	begun
	Implement actions to reduce emissions of pollutants, including greenhouse gases (GHG) in public transport systems.	begun
	Operate Olympic and Paralympic fleet with cleaner fuels.	begun
	Rationalise and optimise logistics operations in the transport of materials and objects.	begun
Sustainable construction and urban improvements	Implement criteria for rational use of resources, efficiency and minimisation of environmental impacts in the design and construction of all venues/facilities.	begun
	Meet international and national environmental standards in the planning, development and construction of the entire Games infrastructure.	begun
	Encourage economic development and improvements to the quality of life in the Games zones.	begun

PLANET (CONTINUED)		
THEME	Specific objective	Maturity
Environmental conservation and clean-up	Minimise impacts on the existing ecosystems at the Olympic and Paralympic venues and in their immediate surroundings.	begun
	Promoting environmental clean-up of bodies of water in the Games zones.	begun
	Strengthen/speed up environmental protection, conservation, restoration and rehabilitation programmes.	begun
	Expand monitoring of air and water quality in the Games zones.	begun
Waste management	Deactivate and begin environmental clean-up of landfills and implement integrated solid waste treatment.	completed
	Align and implement management plans for all construction waste, ensuring appropriate management and final treatment.	begun
	Management and responsible treatment of the Games' solid waste operations.	begun
	Management and responsible treatment of corporate solid waste.	begun

PEOPLE		
THEME	Specific objective	Maturity
Involvement and awareness	Involve Games clients and stakeholders in the adjustments to, and implementation of, the Sustainability Management Plan.	begun
	Develop sustainability education initiatives.	in planning phase
	Develop a sustainability training programme for employees, volunteers and contractors.	in planning phase
Universal accessibility	Ensure universal access to all Olympic and Paralympic venues including their surroundings, pursuant to Brazilian legislation and IPC standards and guidelines, adhering to the most comprehensive of them.	begun
	Ensure inclusive and accessible transport in accordance with the principles of universal design.	begun
	Ensure affordable accommodation, according to IPC standards, for the Paralympic family.	begun
Diversity and inclusion	Recruit a diversified workforce and promote their inclusion.	begun
	Align services for athletes with their cultural diversity.	in planning phase

PROSPERITY		
THEME	**Specific objective**	**Maturity**
Sustainable supply chain	Implement a sustainable supply chain programme.	begun
	Disseminate and support new sustainability standards for the Brazilian events industry.	in planning phase
Management and transparency	Develop Sustainability Management Plan (SMP)	concluído
	Coordinate and ensure proper implementation of the SMP	in planning phase
	Comply with the requirements of the IOC technical manual on environmental protection and sustainability.	begun
	Certification of the Rio 2016™ Organising Committee for the Olympic and Paralympic Games to the ABNT NBR ISO 20121 standard.	begun
	Use internationally recognised evaluation methodologies to bring transparency to the process of implementing the SMP.	begun
	Adopt efficient management and operating processes for water and energy use in sport and non-sport venues.	in planning phase

Annex I – Correspondence between Candidature File topics and Sustainability Management Plan themes

SMP THEMES	CANDIDATURE FILE TOPICS: Water	Environmental awareness	Renewable energy	Carbon emissions and air quality	Soils and ecosystems	Construction and design	Biodiversity	Purchases and ecological certificates	Solid waste management
Transport and logistics			■	■					
Sustainable design and construction	■		■			■		■	■
Environmental conservation and clean-up					■		■		
Waste management									■
Engagement and awareness raising		■							
Universal accessibility						■			
Diversity and inclusion									
Sustainable supply chain								■	
Management and reports	■	■	■	■	■	■	■	■	■

Annex II – Brazilian accessibility legislation

Federal law 10.048 of 8 november 2000

The law establishes priority service for people with a physical disability, the elderly (aged 65 or older), pregnant women, nursing mothers and those who are accompanied by infants. For these individuals, the law provides the following:

- To ensure that these persons are receiving special and immediate service, government offices and public service concessionaires are obliged to provide priority attention through individualised services.
- Public transport companies and mass transit concessionaires must have reserved seating, properly identified, for the elderly, pregnant women, nursing mothers, people with a disability and people accompanied by infants.
- To facilitate access to and the use of these sites by people with a disability, public spaces and public restrooms, as well as public buildings, will have construction standards set forth by proper authorities for the purpose of construction licensing.
- Mass transit vehicles produced as of 12 months following the publication of this law shall be designed to facilitate interior access by people with a disability.

Federal law 10.098 of 19 december 2000

This law establishes general standards and criteria for the promotion of accessibility for people with a disability or reduced mobility, and other measures, seeking the removal of barriers and obstacles on pathways and in public spaces, as well as in relation to urban furnishing, the construction and renovation of buildings and means of transport and communication.

Decree Law 5296 of 2 December 2004

This decree regulates Law No. 10.048 of 8 November 2000, which gives priority service to specified persons, and Law No. 10.098 of 19 December 2000, which sets forth general rules and criteria for the promotion of accessibility. Subject to compliance with the requirements of this decree are:

I. approval of architectural and urban design projects, as well as those related to communications and information, public transport, and the execution of any construction whose ultimate purpose is public;
II. grants of concessions, permits, authorisations or licenses of any kind;
III. approval of financing for projects that make use of public resources, including architectural and urban design projects, as well as those related to communications and information, and mass transport, via any instrument, such as covenants, agreements, adjustments, contracts or similar; and

IV. grants of approval from the Brazilian federal government to obtain international loans and financing by public or private entities.
The decree also sets forth that the National Council for the Rights of People with a Disability, along with state, municipal and Federal District councils, and the representative organisations of people with a disability, will be entitled to monitor and suggest measures to fulfil the requirements of this decree.

Decree Law 7823 of 9 October 2012

Created unique circumstances for the Rio 2016™ Olympic and Paralympic Games, setting a minimum threshold of seats reserved for people with a disability at one per cent. According to the decree, seats and spaces for people with a disability should be clearly marked as such and in locations that have good visibility.

Annex III – Rio 2016™ Sustainable Supply Chain Guide

VERSION 1.0 (JUNE 2012)

GOALS AND STRUCTURE

Introduction

The mission of the Rio 2016™ Organising Committee for the Olympic and Paralympic Games is to deliver excellent Games, with memorable celebrations, that will enhance the global image of Brazil and promote sustainable social and urban transformations through sport, contributing to the growth of the Olympic and Paralympic Movements.

Throughout the management life-cycle of the Games – from design and planning to implementation and post-event review – Rio 2016™ operates under sustainability criteria, notably through its adoption of the Sustainable Supply Chain Programme.

This guide defines the sustainability criteria that will be integrated into our procurement, trade, donations and licensing processes.

For whom is this guide intended?

This guide is intended for use by any person or organisation that is interested, in any way, in the processes for the procurement of goods and services for Rio 2016™.

Principally, these are:

- Employees and partners participating in the management or operation of the Rio 2016™ supply chain
- Suppliers
- Licensees
- Sponsors
- Organisations active in supplier development

Context

The International Olympic Committee (IOC) defines sustainability as an integral dimension of the Olympic Movement. Indeed, in recent years (especially since the 1992 United Nations Conference on Environment and Development, held in Rio de Janeiro), the Olympic Movement has been concerned about environmental issues and monitoring discussions on this subject.

The main landmark of this commitment was the 1994 amendment to the IOC's Olympic Charter, which added a paragraph on the environment and sustainable development. Another important milestone was the publication, in 1999, of the Olympic Movement's Agenda 21.

In general, sustainability initiatives have been increasing in importance since the 2000 Sydney Olympics. Nevertheless, it should be stressed that, as regards supply chain management, the 2010 Vancouver Olympics and the 2012 London Games are considered to be the benchmarks, since these were the first to implement supply chain-focused sustainability programmes.

To continue this trend, and in keeping with its mission to promote sustainable transformation through sport, Rio 2016™ has created its own Sustainable Supply Chain Programme.

Sustainability in the Rio 2016™ supply chain

For Rio 2016™, adoption of the programme signifies consideration of the environmental, social, ethical and economic aspects present throughout the life-cycle of products and services that are the object of acquisitions and licensing processes, and integrating this thinking into our business practices.

Sustainability is, therefore, one of the criteria to be formally considered in all of our decision-making processes, together with other considerations such as total cost, quality, scheduling/deadlines and risks. The idea is that Rio 2016™ will always work towards finding the product or service that adds maximum value.

For Rio 2016™, implementation of a sustainable supply chain also means converting our procurement and contracting services into a tool to promote and encourage the use of sustainable technologies, products, processes and services, thereby contributing to the development of a suppliers market and strengthening the legacy of the Rio 2016™ Games.

Steps in the Sustainable Supply Chain Programme

The programme consists of five steps:

- Establishment of requirements: defining and disseminating evaluation criteria and minimum requirements to be considered in supplier analyses.
- Development and certification of suppliers and licensees: this consists of prior and massive dissemination, through 2016, of the necessities, along with the requirements. Included here are workshops and training sessions for suppliers and licensees, especially those active in sectors identified as critical.
- Procurement: inclusion of sustainability requirements and evaluation criteria throughout the goods and services procurement process, notably in the analyses of total cost of acquisition and life-cycle.
- Contract management/supplier and licensee compliance monitoring: inclusion of sustainability aspects in supplier management mechanisms, such as record management, auditing, reporting and implementation of corrective actions. These activities shall be applied continuously upon the implementation of each contract.
- Dissolution/final disposal of products management: planning for and control of the final disposal of all products, packaging and waste, through comprehensive logistical planning.

Our pillars

The requirements contained in this guide are organised along the pillars of Planet, People and Prosperity. To ensure the achievement of these strategic guidelines, we define them as follows:

- Planet: the environmental impact of procured products and services, throughout their life-cycles, will be minimised and appropriately managed.
- People: procured products and services will be produced and marketed through ethical and responsible practices that lead to social gains for the whole population.
- Prosperity: procurement processes will contribute to perennial economic growth, by increasing the level of quality in the suppliers market, as well as the local and national workforce.

To which purchasing and licensing categories does this guide apply?

The general requirements of the guide are applicable to all purchasing, trade, donation and licensing categories for Rio 2016™.

Analyses of critical categories will be carried out to define specific requirements and evaluation criteria. New or specific requirements may be disclosed in future versions of this guide or in suppliers guides that address specific subjects, or through acquisition, licensing and sponsorship processes.

Updates and releases

Rio 2016™ is committed to the continuous improvement of this guide, which will be periodically reviewed. Updated versions will be published as deemed necessary. Comments and suggestions from all interested parties are welcome and may be sent via email to sustentabilidade.suprimentos@rio2016.com.

OUR REQUIREMENTS

GENERAL REQUIREMENTS

Management systems

Rio 2016™ believes that the adoption by suppliers, sponsors and licensees of management systems related to sustainability and certified by accredited bodies facilitates the adoption and maintenance of best business practices in everyday business.

Rio 2016™ encourages all its specialised, events sector suppliers to obtain ISO 20121 - Sustainability in Event Management certification.

For other suppliers, including small and medium-sized enterprises, Rio 2016™ encourages submission of the following certifications:

- ISO 9001 - Quality Management
- ISO 14001 - Environmental Management
- NBR 16001 or SA 8000 and/or proof of adoption of ISO 26000 guidelines - Social Responsibility Management
- OHSAS 18001 - Health and Safety Management

Rio 2016™ considers possession of the certifications mentioned above as a competitive advantage and this will be reflected in the evaluation process.

Analyses of critical categories shall be carried out to define which of the certifications will be mandatory. New or specific requirements and evaluation criteria for individual categories will be announced in future versions of this guide, through sections related to respective acquisition and licensing processes.

To ensure the participation of the largest possible number of companies capable of meeting its selection criteria during procurement processes, Rio 2016™ will widely disseminate, in advance, its demands and requirements.

Environmental and sustainability certifications

Apart from management systems, Rio 2016™ believes that products and services certified under sustainable criteria have a competitive advantage to be considered during the procurement process.

Thus, Rio 2016™ encourages suppliers, sponsors and licensees to offer products that have Type I Environmental Labelling (green seals, also known as eco-labels), per ISO 14024 and the membership criteria established by organisations affiliated with the Global Eco-Labelling Network (GEN), such as ABNT Environmental Quality (Brazil), China Environmental Label (China), Hong Kong Green Label (China), Green Seal (USA), Ecolabel (EU) and Eco Mark (Japan).

Suppliers of products and services for which the ABNT has already defined criteria for their environmental labelling should seek such certifications. The list of products and services with established environmental labelling criteria is available on the ABNT Certification website.

For relevant categories, Rio 2016™ also encourages the submission of other certifications, such as those managed by the Rainforest Alliance and Fairtrade International (FLO).

PLANET

Our vision

Vendors, sponsors and licensees must ensure that contracted products and services are produced and marketed in a manner that minimises impacts on the environment.

Emission of greenhouse gases

Rio 2016™ aims to minimise and offset emissions of carbon dioxide and other greenhouse gases (GHG). Accordingly, efficient emissions management by suppliers in their production and distribution operations will be an important competitive advantage, both technical and commercial, as emissions compensation costs will be incorporated into analyses of the total cost of purchasing products and/or services.

The criteria to be considered in the measurement of GHG, as well as the procurement categories for which such measurement will be mandatory, will be announced at a later date.

Hazardous materials

Suppliers should avoid the use or supply of products that require, in their production, distribution or disposal, the use of materials harmful to humans or the environment.

Rio 2016™ will disclose, in a timely fashion, a report regarding harmful materials and substances whose use is restricted or prohibited.

Packaging

Among its main objectives, Rio 2016™ is concerned with the treatment and recycling of waste generated during the preparation and operation of the Games, with the goal of reducing the amount of waste to be sent directly to sanitary landfills. To achieve this, it is essential to optimise the use of packaging.

The use of primary, secondary and tertiary packaging must comply with the guidelines set forth in the Brazilian National Policy on Solid Waste (PNRS), which establishes the following hierarchy of actions in the management of materials and packaging – avoid, reduce, reuse, recycle and, finally, treatment of solid wastes and appropriate final disposal of wastes.

The manufacture of packaging must strive to satisfy sustainable design (EcoDesign) guidelines, whose aim is to minimise the use of materials and their environmental impacts in distribution and disposal phases. It is preferred that all packaging be produced according to ISO 14062 (Integration of Environmental Aspects into Product Design and Development).

Packaging must be made from recyclable materials and, where possible, recycled materials. Adoption of Type II Environmental Labelling (self-declarations), in accordance with ISO 14021, is mandatory, such that the best way to deal with packaging after use will always be clearly displayed. Adoption of Type I Environmental Labelling (green seals) is preferred. Any exception to these rules must be justified, in advance, by the supplier or licensee, and approved by Rio 2016™.

Pursuant to the PNRS, suppliers must perform integrated waste management by means of reverse logistics. Thus, whenever requested by Rio 2016™, suppliers, sponsors and licensees must collect packaging for treatment and recycling, bearing all involved costs. Initially, Rio 2016™ intends to invoke this prerogative only for packaging not conforming to established norms or that require unconventional treatment for recycling.

Upon request, suppliers, sponsors and licensees must provide Rio 2016™ with all necessary information relating to primary, secondary or tertiary packaging used or supplied.

Rio 2016™ will release a guide specifically addressing packaging to guide suppliers in the adoption of the guidelines above.

Wood and pulp

All timber used in permanent or temporary constructions for Rio 2016™ must come from legal and responsible sources. Both forest management and chain of custody shall be certified by the Forest Stewardship Council (FSC) or the Brazilian Forest Certification Programme (INMETRO/CERFLOR) or the Programme for the Endorsement of Forest Certification (PEFC) system.

Upon request, timber suppliers shall send Rio 2016™ all information necessary to verify the legality of supplied timber, including operating authorisation (AUTEX), invoices, the entire chain of documents of forest origin (DOF) issued to demonstrate, from beginning to end, complete chain of custody tracking.

Where possible, paper products should be composed solely of recycled fibres, with the highest possible percentage of post-consumer scrap – reaching minimum levels defined in the ABNT NBR 15755:2009 standard. Every product with non-recycled paper or wood in its composition must have FSC or PEFC/CERFLOR certification.

For a better understanding of the procedures for obtaining FSC or CERFLOR (PEFC) sustainable management and chain of custody certification, we recommend reading the instructions and support material available on the websites of FSC Brasil and INMETRO.

Optimal use of materials

The Rio 2016™ Organising Committee for the Olympic and Paralympic Games encourages the responsible use of raw materials in the manufacture of products sold by or on behalf of Rio 2016™. Therefore, suppliers, sponsors and licensees should consider the ecological design (EcoDesign) guidelines established in ISO 14062 and the [Brazilian] National Policy on Solid Waste (PNRS) in the design and production of their products.

Vendors, sponsors and licensees must maximise the use of recycled materials in the composition of their products, as well as adopt Type II Environmental Labelling, stating the best way for supplied products to be handled in the post-consumption phase.

Upon request, suppliers, sponsors and licensees must provide Rio 2016™ with the necessary information relating to the composition or manufacturing process of their products.

Energy efficiency

Vendors, sponsors and licensees must seek to maximise energy efficiency in their supply chains, minimising the environmental impact of production and optimising energy-related costs.

Likewise, Rio 2016™ will make concerted efforts to only purchase products that have a high level of energy efficiency or to enable direct or indirect reductions in energy consumption.

For products that are part of the Brazilian Labelling Program (PBE), Rio 2016™ will select products with an 'A' rating in the National Energy Conservation Label (ENCE - INMETRO/PROCEL).

Water and wastewater treatment

Rio 216™ understands that water resources, vital to the existence of life on the planet, should be used rationally through the adoption of sustainable management plans by product suppliers and service providers, sponsors and licensees.

Ever mindful that water is a limited natural resource for common use and with economic value, contractors, sponsors and licensees must seek to maximise the efficiency of its use, both in their production processes and the daily administrative operations of their organisations.

In this context, waste generated in production processes, industrial or otherwise, must be properly disposed of and, whenever possible, treated for reuse.

PEOPLE

Our vision

Suppliers, sponsors and licensees must adopt ethical and responsible labour practices, within globally accepted standards, which contribute to positive social change.

Labour practices

Suppliers, sponsors and licensees must ensure that working conditions for all employees or subcontractors, working in different facilities used in the manufacture or supply of products and services, meet the minimum requirements set forth in the Base Code of the Ethical Trading Initiative (ETI), available on the ETI website:

- Employment is freely chosen
- Freedom of association and the right to collective bargaining are respected
- Working conditions are safe and hygienic
- Child labour shall not be used
- Living wages are paid
- Working hours are not excessive
- No discrimination is practised
- Regular employment is provided
- No harsh or inhumane treatment is allowed

ETI requirements should not be used as factors that limit what suppliers, sponsors and licensees can do for their employees beyond these standards. Companies that implement this guide must comply with the national laws of Brazil and other standards, and where the law and the base guide are addressing the same subject, those provisions that afford greater protection to employees should be followed.

Upon request from Rio 2016™ or one of its representatives or its auditor, suppliers, sponsors and licensees must provide all information related to their workplaces or working conditions, as well as ensure broad and transparent access to the same.

Non-discrimination and valuing diversity

The Rio 2016™ team includes people from a variety races, cultures, beliefs and backgrounds. It is this mix that propels Rio 2016™ toward a common goal and it is a harmonious diversity that we celebrate.

The Rio 2016™ Diversity Manifesto expresses the commitment of the Games to diversity and describes the values that we share with suppliers, sponsors and licensees. Rio 2016™ will soon disclose the details of the manifesto's goals to facilitate the integration of these into procurement and licensing processes.

Rio 2016™ encourages the adoption of practices that will broaden participation in its supply chain of micro, small and medium-sized enterprises from the most diverse sectors and social groups, as a way to ensure business opportunities for the greatest number of market participants.

PROSPERITY

Our vision

Rio 2016™ procurement and licensing processes are oriented to contribute directly to economic growth, while increasing the level of quality in the suppliers market, as well as the local and national workforce.

Development of the local and national suppliers market

Rio 2016™ considers the economic legacy of the Games to be of great importance and is committed to procuring goods and services in a manner that will maximise positive impacts on business development in the city and state of Rio de Janeiro, as well as throughout the Brazil.

Rio 2016™ hopes to contribute to the development and capabilities of the suppliers market through advance, mass communication of future needs and conducting workshops, publishing guides and manuals, and promotion of facilitated training. In turn, our suppliers, sponsors and licensees are partners in these initiatives, which extend into their own supply chains.

In parallel with development and training activities to be organised by Rio 2016™, we recommend that providers and licensees seek out sustainability and eco-efficiency training materials and programmes being provided by existing organisations, federations and specialised associations.

Reducing costs and increasing competitiveness

Rio 2016™ understands that the implementation of a well-structured sustainability programme on the part of suppliers can significantly minimise costs along their supply chains, with process optimisations, which could result in the reduction or reuse of materials and supplies. Likewise, products and services resulting from these processes add more value to customers, providing a competitive advantage for these suppliers.

The requirements set forth in this guide are intended to assist suppliers, sponsors and licensees to adopt improvements in their processes, ensuring a supply of more competitive and greater value-added products and services.

Development of the local workforce

Suppliers, sponsors and licensees are partners of Rio 2016™ in creating job opportunities and training programmes.

Suppliers, sponsors and licensees are encouraged to align their recruitment and training processes to the requirements of Rio 2016™ to ensure daily understanding and implementation of practices required by the organising committee.

Creating opportunities for micro, small and medium-sized enterprises

Rio 2016™ aims to foster the development of micro, small and medium-sized enterprises (SMEs) through mass communication of its demands and requirements, as well as working with different organisations in the training of suppliers.

Suppliers, sponsors and licensees must participate in this effort and seek to create opportunities for SMEs in their supply chains.

Micro, small and medium-sized enterprises should seek to actively participate in this initiative, seeking out training materials, such as the booklet 'Cleaner Production in Micro and Small Enterprises' published jointly by the Brazilian Micro and Small Business Support Service (SEBRAE) and the Brazilian Business Council for Sustainable Development (CEBDS), as well as other materials from SEBRAE and from other industry entities such as the National Confederation of Industry (CNI), National Industrial Apprenticeship Service (SENAI) and the Euvaldo Lodi Institute (IEL).

IMPLEMENTATION OF THE GUIDE

Adopting requirements of the procurements process

Sustainability requirements will be considered in all procurement processes for goods and services, suppliers, sponsors and licensees. Rio 2016™ will always provide information whenever a requirement that is not described in this guide as mandatory will be considered as such for any particular process.

Rio 2016™ encourages all potential suppliers, sponsors and licensees who have not yet done so, to start implementing the requirements described herein in their production processes and business practices. In this way, it will be possible to develop internal processes to become more efficient, competitive and able to add significantly to the Rio 2016™ value chain and the market as a whole, as well as become able to participate in the procurement process when such moments arise.

Questions regarding procurement processes may be answered through the Rio 2016™ Suppliers Manual or the rules set forth in the documents for the different procurement processes.

Certifications and evidence of meeting the requirements will be required and monitored at various moments.

Classification and monitoring

Rio 2016™ will examine the degree to which suppliers, sponsors and licensees are able to satisfy sustainability requirements through two types of classification:

- Selection of new suppliers, sponsors or licensees: sustainability criteria will be considered as one of the dimensions of the decision-making process, lending support to analyses of costs, impacts and benefits for each procurement. After such analysis, companies will be graded on a sustainability scale.
- Monitoring performance and development: contracted suppliers, sponsors and licensees must commit to a development plan with objective goals for constant progress in keeping with the Rio 2016™ sustainability scale.

Tools and systems

Satisfying the requirements set forth herein shall be initially assessed through an analysis of responses to the Request for Information sent out as part of a new procurement process or through an analysis of data from suppliers who registered on the pre-registration portal or the Rio 2016™ Suppliers Registry portal.

Selected suppliers, sponsors and licensees must complete and sign the Declaration of Sustainable Conduct, which establishes the minimum standards for being a supplier or provider of service that are based upon this guide and any specification(s) set forth in the procurement process. This declaration and the development plan mentioned above will form the basis for compliance management of businesses.

Indicators, parameters and certifications will be managed through the Rio 2016™ Suppliers Registry portal and periodically updated.

Other tools are being evaluated and may be integrated into the supplier management process.

Compliance monitoring and audits

The Organising Committee for the Olympic and Paralympic Games will continuously monitor information contained in the Rio 2016™ Suppliers Registry portal, as well as products and services delivered, for compliance.

Upon request, suppliers, sponsors and licensees must provide any other information demanded by Rio 2016™ to analyse environmental, social, ethical and economic aspects related to localities, labour practices and processes, management or operation, up to and inclusive of materials and inputs used in the production and distribution of goods or services.

Whenever Rio 2016™ believes an 'on the spot' check is necessary to assess the conformity of a factory or process, an outside auditor must be contracted to perform the audit and verify the corrective actions, and all costs involved in the process shall be borne by supplier or licensee without causing an impact on the contractual rights of Rio 2016™. In such cases, the auditors must be approved in advance by Rio 2016™.

To minimise costs for suppliers, sponsors and licensees, the Organising Committee of the Olympic and Paralympic Games will always assess the possibility of accepting an audit report that was carried out using a methodology approved by Rio 2016™ with the acceptance or not of this report at the sole discretion of Rio 2016™.

Rio 2016™ may also conduct inspections on the premises of suppliers or licensees, directly or through its representatives and auditors, without notice, at any hour the location is operational.

In cases of non-compliance, Rio 2016™ will monitor the development and implementation of a corrective action plan until issues in question have been eliminated.

Communication of assumed commitments

For as long as products and/or services are being supplied to Rio 2016™, suppliers and licensees shall post in each of the establishments involved with deliveries to the Organising Committee of the Olympic and Paralympic Games, in an easily accessible location for reading by all workers, a Rio 2016™ Suppliers and Licensees Commitment Letter, which contains a macro summary of this guide, plus a summary of the Base Code of the Ethical Trading Initiative (ETI) and contacts at Rio 2016™ to whom complaints and allegations may be directed.

At least two copies of the Commitment Letter shall be posted – one in the official language of the country and the second in English. Should it be necessary, Rio 2016™ may request that such communication is made available in other languages.

Sub-contracts and factory alterations

Subcontracting or alterations in factories and warehouses used for products and/or services contracted by Rio 2016™ may only occur if they are foreseen in a contract between the supplier or the licensee and Rio 2016™ or clearly authorised by Rio 2016™ in a subsequent agreement. In such cases, all projections, requirements and obligations contained in this guide will be extended to subcontractors and the factories responsible for the production of contracted goods and services.

For more information or to clarify any questions, please send an e-mail to: sustentabilidade.suprimentos@rio2016.com.

This document was produced by:

Rio 2016™ Organising Committee for the Olympic and Paralympic Games (Rio 2016™)
– Sustainability, Accessibility and Legacy Functional Area

Olympic Public Authority (APO)
– Sporting Infrastructure, Event and Environment Support Directorship

Rio de Janeiro State Government Project Management Office (EGP)

Municipal Olympic Company (EOM)
– Sustainability and Accessibility Functional Area

Rio 2016 Organising Committee for the Olympic and Paralympic Games

Published by the Communications Department in April 2013. | For further information please contact us: comunicacao@rio2016.com

PATROCINADORES OLÍMPICOS MUNDIAIS
WORLDWIDE OLYMPIC PARTNERS

Coca-Cola · Atos · DOW · GE · McDonald's · OMEGA · Panasonic · P&G · SAMSUNG · VISA

PATROCINADORES OFICIAIS
OFFICIAL SPONSORS

Bradesco · Bradesco Seguros · Embratel · Claro · NISSAN

APOIADORES OFICIAIS
OFFICIAL SUPPORTERS

EY · Sadia · Batavo · SKOL

FORNECEDOR OFICIAL
OFFICIAL SUPPLIER

Nike

PARCEIROS GOVERNAMENTAIS
GOVERNMENTAL PARTNERS

RIO Prefeitura · Governo do Rio de Janeiro · Governo Federal Brasil País rico é país sem pobreza

PATROCINADORES OFICIAIS
OFFICIAL SPONSORS

Atos · Bradesco · Bradesco Seguros · Embratel · Claro · NISSAN · OMEGA

APOIADOR OFICIAL
OFFICIAL SUPPORTER

Sadia

PARCEIROS GOVERNAMENTAIS
GOVERNMENTAL PARTNERS

RIO PREFEITURA · GOVERNO DO Rio de Janeiro · GOVERNO FEDERAL BRASIL PAÍS RICO É PAÍS SEM POBREZA

04.2013

imagem da capa: © Riotur / Alexandre Macieira

Rio 2016™ Organising Committee
for the Olympic and Paralympic Games

rio2016.com