



Tokyo 2020 Olympic and Paralympic Games

Sustainability Plan

Version 1

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Tokyo Organising Committee of the Olympic and Paralympic Games

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1. Introduction

(1) Introduction

The Olympic and Paralympic Games are the world's largest sports events, and the delivery of the Games has more wide-ranging impacts than we could imagine, not on the field of sports alone, but also on society, the economy and other fields. The Games' influence will go beyond the Host City, extending across Japan and the world. Given the growing momentum for efforts to protect the global environment, it is vital that these concerns are fully addressed in preparations for the delivery of the Olympic and Paralympic Games.

In response to this trend, the International Olympic Committee (hereinafter referred to as the "IOC") declared, in 1994, that concern for the environment became the third pillar of Olympism in addition to sport and culture. Furthermore, Olympic Agenda 2020, which was adopted in December 2014, specifies measures to be taken by the IOC in terms of sustainability, clarifying the focus on sustainability at the Olympic Games and emphasising the importance of delivering sustainable Games.

Sustainability has been a major focus of attention in recent the Games, and the approach being taken for the Tokyo 2020 Olympic and Paralympic Games (hereinafter referred to as the "Tokyo 2020 Games") is attracting increasing attention. In order to give the fullest consideration to sustainability within a limited timeframe and budget constraints for Games preparations, it is vital that we tap into various sources of expertise in the field, explore feasible approaches from multiple angles, and implement them.

Accordingly, the Tokyo Organising Committee of the Olympic and Paralympic Games (hereinafter referred to as "Tokyo 2020") will develop the Sustainability Plan (hereinafter referred to as the "Plan") to deliver sustainable Tokyo 2020 Games. The Plan will set out principles that will guide sustainable Games preparations and operations and serve as a basis for those involved in the Games. To concretise and continuously improve the Plan, we will gain insights from third-party experts. We will also offer cooperation platforms to hold discussions with our delivery partners* and incorporate a variety of perspectives into the Plan. Within this framework, we will monitor and follow up on the implementation of the Plan after it is developed.

In addition, we will prepare a sustainability report on a regular basis to brief the public on the implementation of sustainability efforts.

* The Government of Japan, regional/local governments and private entities that provide financial and other support for the development of the Plan and the delivery of the Games.

(2) Importance of the Concept of “Sustainability” for the Tokyo 2020 Games

(2)-1. World’s trends regarding sustainability

“Sustainable development” is a concept covered as a predominant philosophy in a report, *Our Common Future*, issued in 1987 by the World Commission on Environment and Development, also known as the Brundtland Commission, which was established in the United Nations based on Japan’s proposal. In this report, sustainable development is defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs,” based on the belief that the environment and development are not contradictory but can coexist. This represents the idea that it is essential for development to be achieved in a sustainable and moderate manner.

Subsequently, in response to increasingly severe global environmental issues, the United Nations Conference on Environment & Development (the Earth Summit), which was held in Rio de Janeiro in 1992, adopted the Rio Declaration on Environment and Development, the main theme of which is the concept of sustainable development. One year later, in 1993, the Basic Environment Law was established in Japan. Since then, measures to address global environmental issues have been encouraged. For the Olympic Games, the IOC declared, in 1990, that concern for the environment became the third pillar in addition to sport and culture. At the Centennial Olympic Congress held in Paris in 1994, an item regarding the environment was introduced in the Olympic Charter. As a consequence of these developments, environmental considerations have been given to Games delivery, as shown by the Lillehammer 1994 Games delivered under the slogan of the Green Games.

The world’s average temperatures, however, have been increasing, and severe weather phenomena have come to occur frequently around the world. According to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) issued in 2007, it is extremely likely that most of the observed increase in global average surface temperature after the mid-20th century was caused by the anthropogenic increase in GHG concentrations. Anthropogenic forcings have likely made a substantial contribution to surface temperature increases since the mid-20th century over every continental region except Antarctica. Even now, damage is being caused by droughts, heavy rains, large hurricanes and other severe weather phenomena all around the world, including Japan. Thus, international cooperative approaches in terms of resource cycles, biodiversity and other fields are required. As seen above, making sustainability efforts is a significant global challenge.

(2)-2. Olympic and Paralympic Games' trends

Given this background, approaches on sustainability were specified in the London 2012 Games vision. Under the theme of "One Planet Living," efforts for securing sustainability were made, including reducing greenhouse gas (GHG) emissions, zero waste direct to landfill and sustainable procurement, throughout the whole process, ranging from construction and other preparations for the Games to Games operations, by considering sustainability one of the important pillars of the Games. As a result, the London 2012 Games are known as the first summer Olympic Games to embed sustainability incorporating the environment and other fields. For subsequent Olympic and Paralympic Games as well, sustainability has come to be accepted as an important theme.

Olympic Agenda 2020, which was adopted by the IOC in December 2014, outlines the IOC's approach to sustainability in "Recommendation 4: Include sustainability in all aspects of the Olympic Games" and "Recommendation 5: Include sustainability within the Olympic Movement's daily operations," further clarifying the focus on sustainability of the Olympic Games.

Today, the concept of "sustainability" is attracting widespread interest, and covers not only environmental matters, such as minimal environmental impact and symbiosis with nature, but also consideration of human rights, working conditions and management of supply chains.

The 2030 Agenda for Sustainable Development, which was adopted at the United Nations General Assembly in September 2015, provides 17 Sustainable Development Goals (SDGs) and 169 targets. These goals and targets are inseparably integrated, allowing the three aspects of sustainable development, economic, social and environmental aspects, to be harmonized. The range covered by these goals and targets is very wide: poverty, hunger, well-being, education, gender, water, energy, employment, infrastructure, inequality, human settlements, consumption and production, climate change, oceans, biodiversity, justice, and global partnerships.

Accordingly, for the Tokyo 2020 Games as well, a wide-ranging approach to sustainability, which incorporates not only environmental but also social and economic aspects, is required.

To enable the Tokyo 2020 Games to advance along a more sustainable path, the framework of ISO 20121, the international standard for the Event Sustainability Management System (ESMS) developed to help events be sustainable, has been adopted. Under these

circumstances, preparations are being made to establish and operate the ESMS in Tokyo 2020.

(3) Relationship between Sustainability and the Tokyo 2020 Games Vision

The Games vision that underpins the Tokyo 2020 Games has been determined as shown below (released in February 2015).

Sport has the power to change the world and our future.
The Tokyo 1964 Games completely transformed Japan. The Tokyo 2020 Games, as the most innovative in history, will bring positive reform to the world by building on three core concepts:
“Striving for your personal best (Achieving Personal Best)”
“Accepting one another (Unity in Diversity)”
“Passing on a Legacy for the future (Connecting to Tomorrow)”

On the basis of this Games vision, Tokyo 2020 will strive to build a consensus on approaches on sustainability, through discussions on environmental, social and economic aspects with various related parties (**Unity in Diversity**). Through these discussions as well as the optimum use of Japan’s leading-edge technologies and ingenuity, everyone involved will seek to realise sustainable Games operations by achieving their personal best in their own way in the Tokyo 2020 Games (**Achieving Personal Best**). Through such sustainable Games operations, we will share the concept and ideas of “sustainability” with people in Tokyo and the world, and encourage them to act responsibly (**Connecting to Tomorrow**).

(4) Sustainability Approach for the Tokyo 2020 Games

In our preparations for the Tokyo 2020 Games, we will facilitate a wide variety of approaches on sustainability, incorporating environmental as well as social and economic aspects.

For these approaches, it is important to underline the unique features of Tokyo and Japan, for example, urban infrastructure and safety, which are among the best in the world, by:

- emphasising Japanese values and aesthetics, such as Japanese *omotenashi* (spirit of selfless hospitality,) the Japanese concept of *mottainai* (sense of avoiding waste), *taru wo shiru* (what you have is all you need), and *wa o motte totooshi to nasu* (harmony is the ultimate value);
- communicating *edomae* (the traditional Tokyo style) and the view of nature having roots in socio-ecological production landscapes to the world; and
- using cutting-edge technologies (advanced energy saving, renewable energies, recycling, other green technologies, etc.) and incorporating these into social systems.

On the occasion of our preparations for and operations of sustainable Games, Tokyo 2020 advocates the following four principles:

- responsibility for sustainability (Stewardship)
- involvement of all interested parties (Inclusivity)
- adherence to ethical principles (Integrity)
- openness about decisions and activities (Transparency)

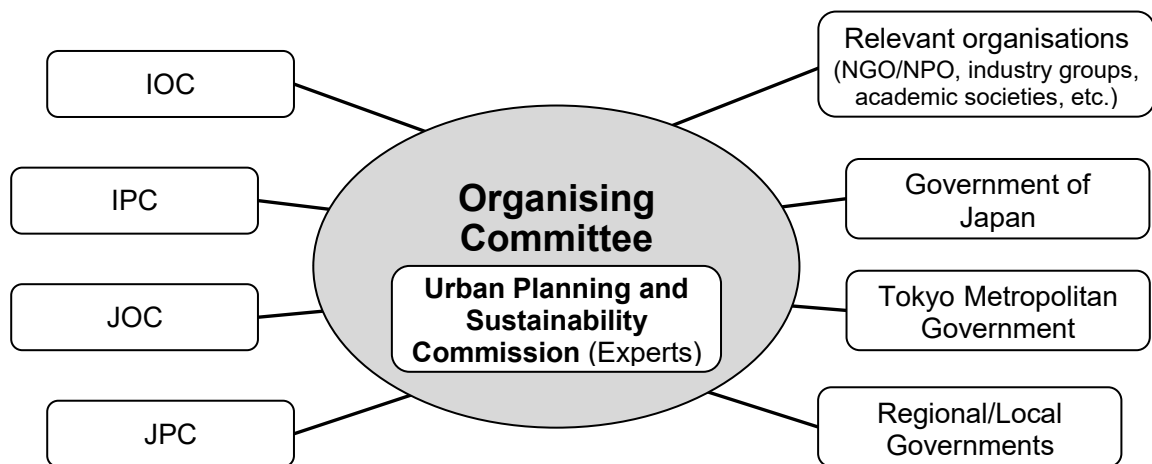
These principles conform to ISO 20121, *Event sustainability management systems – Requirements with guidance for use*.

(5) Outline of the Plan

To secure sustainability throughout the Games, it is necessary not only for Tokyo 2020 but also all parties involved in the Games to enhance efforts for securing sustainability. Therefore, the Plan covers preparations for and operations of the Tokyo 2020 Games, providing guidelines on preparations for and operations of sustainable Games. The Plan will serve as a basis for those involved in the Games to realise the delivery of sustainable Games. The Plan specifies detailed policies, goals and measures regarding how Tokyo 2020 intends to realise sustainable Games in cooperation with various delivery partners. In addition to Tokyo 2020, the Tokyo Metropolitan Government, the Government of Japan, and other delivery partners will conduct preparations for and operations of sustainable Games by making efforts according to their own role with due respect for the Plan.

(6) Organisations Concerned

Tokyo 2020 has developed the Plan in cooperation with major organisations and groups as shown in the figure below.



IOC: International Olympic Committee

IPC: International Paralympic Committee

JOC: Japanese Olympic Committee

JPC: Japanese Paralympic Committee

Based on the results of a review of assignment of roles in the Tokyo 2020 Games as a whole, Tokyo 2020 will clarify roles in the field of sustainability assigned to each organisation involved, and cooperate with these organisations to achieve sustainable Games.

(6)-1. Study framework

To discuss issues associated with sustainability, Tokyo 2020 has established the Urban Planning and Sustainability Commission (hereinafter referred to as the “Commission”), consisting of academics and experts from NGOs. Tokyo 2020 has also set up the following two groups as affiliated organisations: the Sustainability Discussion Group (hereinafter referred to as the “DG”) to study specific issues and monitor the progress of sustainability efforts, and the Working Group (hereinafter referred to as the “WG”) to study issues from a more technical viewpoint.

For these meeting boards, officials from the Tokyo Metropolitan Government and the Government of Japan participated in discussions from the study stage as members or observers to make the Plan effective in terms of the future direction and concrete measures of each theme.

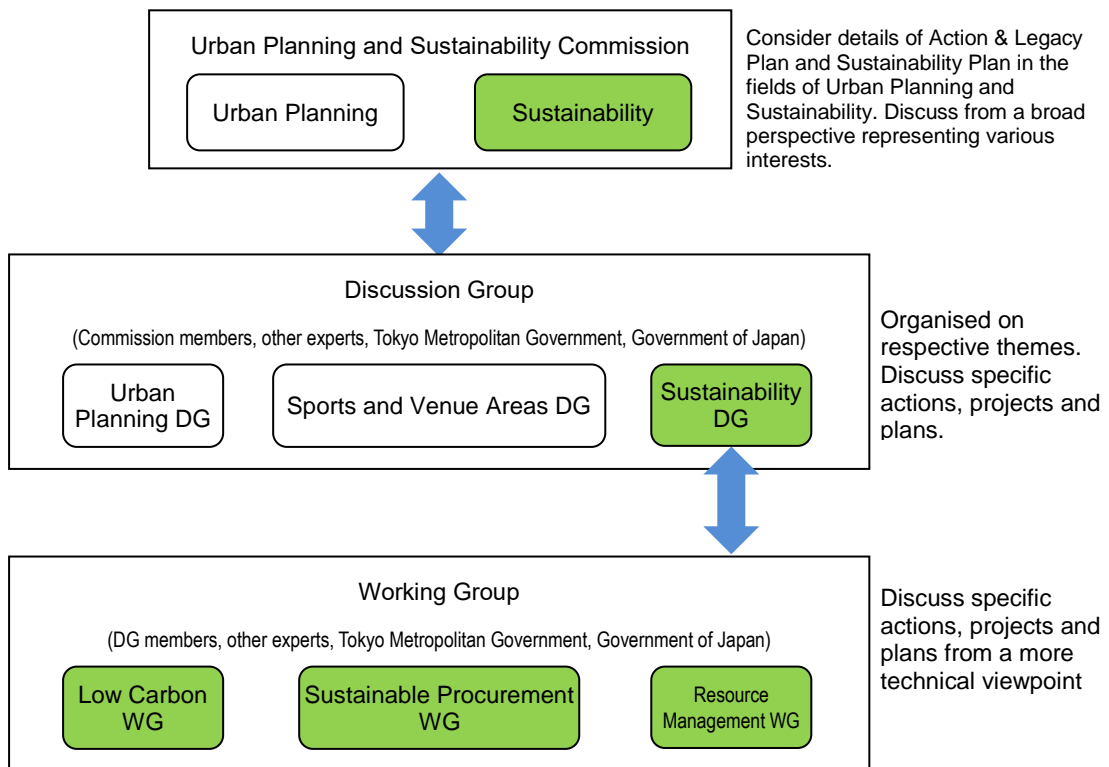


Fig.: Study Framework

(6)-2. Opinion platforms for NGOs/NPOs, industry groups and other organisations

Tokyo 2020 collected a wide variety of proposals through the Internet at the study stage to obtain proposals and advice from NGOs/NPOs with particular expertise in various fields from the perspective of sustainability. Proposals were also collected at DG meetings and, when necessary, individually from DG members.

(7) Games-related Schedule (Outlines)

(7)-1. Overview of the Olympic Games schedule

Period: Friday, July 24 to Sunday, August 9, 2020

Number of sports: 33

(7)-2. Overview of the Paralympic Games schedule

Period: Tuesday, August 25 to Sunday, September 6, 2020

Number of sports: 22

2. Main Themes to Be Included in Sustainability Programme for the Tokyo 2020 Games

Taking into account discussions with experts and rising concerns regarding the global environment, including the Sustainable Development Goals (SDGs) adopted at the UN Summit in September 2015, the following five main themes will be included in our sustainability programme for the Tokyo 2020 Games: “Climate Change (Carbon Management),” “Resource Management,” “Natural Environment and Biodiversity,” “Consideration of Human Rights, Labour and Fair Business Practices” and “Involvement, Cooperation and Communications (Engagement).”

These five themes are complex and important long-term visions generated from the inter-relationships between human activities, social systems and the global environment, and cover all aspects of sustainability.

We discuss, in the chapters that follow, “Background,” “Principles, Strategies and Goals” and “Measures to Achieve the Goals” regarding each of the five themes.

For the Tokyo 2020 Games, 52 Functional Areas (FAs) necessary for the Games operations have been set up, and all FAs are working on their own tasks. To develop the Plan, it is necessary to give due consideration to each FA’s plan. Therefore, although the first version of the Plan is being developed, Tokyo 2020 will make revisions to the Plan by incorporating quantitative goals to make each FA’s activities specific and concrete. (planned for the end of March 2018)

2-1. Climate Change (Carbon Management)

(1) Background

The Paris Agreement, which serves as a fair and effective framework for all nations, was adopted at the 21st Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP21) in December 2015. The agreement sets a universal long-term temperature goal of holding global average temperature increase to well below 2°C, and pursuing efforts to limit this to 1.5°C above pre-industrial levels. In addition, the agreement requires each nation to formulate long-term low-GHG emissions development strategies. As seen above, an agreement for further enhancement of efforts against global warming was made. The IPCC Fifth Assessment Report shows that limiting temperature increase to below 2°C will likely require reducing GHG emissions to near or below zero by 2100.

In advance of the COP21, in July 2015, Japan submitted the *Japan's Intended Nationally Determined Contribution* (INDC), specifying that Japan will achieve the GHG emission reduction target of 26% by fiscal year (FY) 2030 compared to FY 2013 (25.4% reduction compared to FY 2005). Based on the INDC and the Paris Agreement, in May 2016, the Anti-global Warming Plan was approved by the Cabinet of Japan. This plan describes measures to be taken by respective parties and the policy of the National Government to achieve mid-term goals, as well as a long-term goal to reduce GHG emissions by 80% by 2050. In May 2016, the Act on Promotion of Global Warming Countermeasures (Act No. 117 of 1998) was revised in part. The Act deals with issues such as the radical reinforcement of countermeasure promotion to change individual citizen's awareness and lifestyle, the enhancement of global warming countermeasures through international cooperation, and the regional promotion of global warming countermeasures. Additionally, the Paris Agreement came into force in November in the same year, and Japan ratified it later. To deliver the Tokyo 2020 Games, further enhancement of countermeasures is expected.

In 2020, instead of the existing framework based on the Kyoto Protocol, a new international framework based on the Paris Agreement will begin. The Paris Agreement stipulates that nations are requested to submit or update their targets every five years. The agreement also requires nations to formulate long-term low-GHG emissions development strategies. By 2020, the year of the Tokyo Games, nations requested to submit or update their targets, as well as submit their long-term low-GHG emissions development strategies. Therefore, the year 2020, in which the new international framework is to be launched, will represent a landmark year to attract the world's attention also to the field of climate change.

Accordingly, in our preparations for the Tokyo 2020 Games, we will minimise CO₂ and

other GHG emissions related to the Games through sustainable venue design and construction by utilising leading-edge technologies, eco-friendly transport, and promotion of efforts by fostering close cooperation among the Tokyo Metropolitan Government, the Government of Japan, regional/local governments, private entities, citizens and other related parties. (Carbon Management).

(2) Principles, Strategies and Goals

The London 2012 Games, which incorporated sustainability in the Games vision for the first time, is considered the Game that proved that mature cities still had a significant positive impact on the world. In terms of global issues of common concern, or global warming issues, in particular, the London 2012 Games provided, through the World's largest sports event, the Olympic and Paralympic Games, a behavioural indicator for the development of a low-carbon society, the achievement of which requires the involvement of all nations of the world.

Specifically, to curb the impact of global warming caused by the delivery of the Games to the utmost extent, various measures to reduce CO₂ emissions were taken based on the calculation of the Games-related carbon footprint in advance. The carbon footprint was continuously calculated and reported from three years before the Games. After the Games, achievements during the period ranging from the Games planning stage to the operational stage (e.g. 0.4 million tonnes reduction from the reference footprint estimated in 2009 [approximately 11.8%]) were announced. (The final result was a carbon footprint reduction of 0.1 million tonnes in total) Furthermore, to deliver the Games in a low-carbon manner, ISO20121 (Event Sustainability Management Systems) was adopted for the first time. These sustainable approaches have been passed down to the subsequent Games as a legacy of the London 2012 Games.

The Tokyo 2020 Games are the first Games to inherit and implement the London Games legacy from the bid stage, resulting in attracting the world's attention. The calculation of CO₂ emissions from the delivery of the Tokyo 2020 Games has not been made yet. For the calculation, the London 2012 and Rio 2016 Games will serve as useful references. For both Games, the calculation was made by including a classification of carbon footprint as follows:

- owned: emissions due to activities wholly funded by the Organising Committee
- shared: emissions associated with the partner contributions to jointly funded activities
- associated: emissions due to activities clearly associated with the Games that are not funded by the Organising Committee but over which they may exert some influence

With even "associated" included in carbon footprint boundaries, the amount of CO₂ emissions at the planning stage of each Games was calculated to be around 3.5 million tonnes. For the calculation of the Tokyo 2020 Games carbon footprint, it is necessary to pay due attention to London's and Rio de Janeiro's perspectives. However, CO₂ reduction impact will become larger due to energy-saving technologies expected to be improved during the period between the London 2012 and Tokyo 2020 Games. In addition, the Tokyo 2020 Games are characterized by the utmost use of existing venues without constructing large venues, such as the Olympic Park built for the London 2012 Games. In consideration of these circumstances,

assuming that venues of the same level as those for the London 2012 and Rio 2016 Games are prepared, there is a prospect that CO₂ emissions will decrease by a certain amount compared to the past two Games.

For the Tokyo 2020 Games, in particular, we will aim to achieve the minimisation of environmental burden under the environmental principle “Tokyo 2020 Games with a top priority on the environment and sustainability.” We will give the utmost consideration to sustainability and reduce environmental burden from the planning stage. We will encourage CO₂ reduction as a nation with the world’s preeminent environmental technologies and as an environmentally advanced city, Tokyo.

For approaches, we will select appropriate countermeasures against possible CO₂ and other GHG emissions in the order of the avoidance, reduction, and offsetting of emissions. Aiming to achieve more CO₂ reduction at the operational stage than the former Games, we will implement the “Plan, Do, Check, Action(PDCA)” cycle in a proper manner to secure the effectiveness of the Plan.

In preparations for the Tokyo 2020 Games, in particular, with regard to the avoidance of emissions, we will make sure to steadily procure raw materials, goods, products, and services that contribute to the reduction of environmental loads (green procurement) according to the Act on Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities (Act No.100 of 2000). With regard to the reduction of emissions, we will minimise Games-related GHG emissions through full-scale energy-saving measures by utilising advanced environmental technologies, the enhancement of renewable energy adoption, and the promotion of approaches by implementing Involvement, Cooperation and Communications activities. Furthermore, with regard to unavoidable GHG emissions, we will offset them through carbon offset or other means.

For the Tokyo 2020 Games, we will seek to minimise CO₂ emissions through the implementation of measures by utilising these high-level technologies and systems, which Japan could provide at qualified level, in a comprehensive manner (carbon management). The best mix of these measures is the very sustainable approaches that need to be handed down as a legacy. At the time of the bid, we expressed our intention to give consideration to sustainability to reduce CO₂ emissions to the maximum extent possible, by using the term “carbon neutral.” For the Tokyo 2020 Games, we will place the foundations of decarbonisation by using every possible measure.

(3) Measures to Achieve the Goals

(3)-1. Grasping the accurate amount of CO₂ emissions (calculation of carbon footprint)

For Games-related GHG gas emissions, the carbon footprint will be calculated based on the methodologies used for the past two Games. Specifically, as described in (2), “associated” is to be included in the calculation in addition to “owned” and “shared.” The calculation will be made according to the life cycle assessment (LCA) methodology by dealing with GHG emissions associated with the entire life cycle, from procurement of raw materials for goods and services to disposal or recycling. Through the calculation, we will quantitatively grasp the environmental burden associated with the Games preparation and operation.

For example, we will develop an evaluation model in which not only CO₂ emissions at the time of venues construction but also those related to all the stages of the life of construction materials, from manufacturing to disposal (embodied carbon), as well as emissions associated with spectators’ travel (including flights), are subject to the calculation. Through the development of this type of evaluation model, we will seek to reduce CO₂ emissions by grasping the amount of Games-related CO₂ emissions and possible impacts on the environment.

We will make an estimate of possible carbon footprints, which we would have if no special countermeasures are taken, in advance. By grasping Games-related CO₂ emissions in a comprehensive manner, we will update, on an as-needed basis, the estimates of carbon footprints according to new information to be obtained with the progress of Games preparations. Through these processes, we will examine the necessity to take further measures.

By utilising a carbon footprint evaluation model to be developed, we will calculate carbon footprints associated with all the Games stages, from preparations through operations to post-Games, based on actual data to the utmost extent. We will provide outcomes as reference information for future Games to reduce CO₂ emissions.

(3)-2. Selection of appropriate measures for the avoidance and reduction of possible CO₂ emissions in consideration of the effectiveness and significance of the measures

In preparations for the Tokyo 2020 Games, to minimise Games-related CO₂ emissions, we will select appropriate measures: the avoidance of CO₂ emissions from the planning stage by making effective use of existing venues to the utmost extent; and the reduction of CO₂ emissions by energy efficiency initiative thoroughly through the introduction of the highest level of environmental technologies, utilising renewable energy, making good use of public transport and green vehicles, and recycling waste products. We will deliver low-carbon Games in which the minimum energy will be used for Games preparations and operations.

(3)-2-1. Avoidance of emissions

To avoid Games-related CO₂ emissions as far as possible (avoidance of emissions), we will make various considerations from the planning stage: developing a strategic venue plan that allows the world's leading public transport networks to be utilised to the maximum extent, optimising the use of existing venues, utilising various technologies at venue facilities, and adopting passive design* strategies.

* One of the construction design approaches, which can provide a comfortable room environment by controlling the flows of heat and air with the use of ingenious building structures and materials, without using special mechanical equipment

i. Strategic venue plan

To avoid CO₂ emissions associated with spectators' travel as much as possible, we will develop a venue plan that allows Japan's excellent public transport network and transport systems to be utilised to the utmost extent. In a way like this, we will minimise environmental loads and make contributions to effective Games operations.

The plan made for the Bid specifies that existing venues, including Yoyogi National Stadium and Nippon Budokan, which were the major venues at the time of the Tokyo 1964 Games, are to be utilised. In addition to the utilisation of existing facilities, through the revision made to the venue plan as shown below, we will seek the reduction of CO₂ emissions. According to the revision of the plan, the number of venues has changed from 37 at the time of the Bid to 39 at present. 10 venues were changed and 3 venues for additional sports were added.

Table: Revised Venues

As of Dec, 2016

	Sport / Discipline	Pre-revision	Post-revision
Olympic Games	Swimming (Water polo)	Water Polo Arena	Tatsumi International Swimming Centre
	Badminton	Youth Plaza Arena A	Musashino Forest Sport Centre
	Basketball	Youth Plaza Arena B	Saitama Super Arena
	Cycling (Road Race goal)	Musashino Forest Park	Imperial Palace Garden
	Cycling (Mountain Bike)	Sea Forest Mountain Bike Course	Izu Mountain Bike Course
	Fencing	Tokyo Big Sight	Makuhari Messe Hall B
	Rugby	Olympic Stadium	Tokyo Stadium
	Sailing	Wakasu Olympic Marina	Enoshima Yacht Harbor
	Taekwondo, Wrestling	Tokyo Big Sight	Makuhari Messe Hall A
Olympic and Paralympic Games	Cycling (Track Race)	Olympic Velodrome	Izu Velodrome
	Equestrian (Dressage, Jumping, Eventing [excluding Cross-Country])	Dream Island Stadium	Baji Koen
Paralympic Games	Boccia	Tokyo Big Sight Hall B	Olympic Gymnastic Centre
	Football 5-a-side	Seaside Park Hockey Stadium	Aomi Urban SportsVenue
	Goalball	Olympic Gymnastic Centre	Makuhari Messe Hall C
	Powerlifting	Tokyo Big Sight Hall A	Tokyo International Forum
	Sitting Volleyball	Ariake Arena	Makuhari Messe Hall A
	Wheelchair Basketball	Youth Plaza Arena A	Musashino Forest Sport Centre
	Wheelchair Basketball (final)	Youth Plaza Arena B	Ariake Arena
	Wheelchair Fencing	Youth Plaza Arena A	Makuhari Messe Hall B

* Venues for some sports are yet to be determined.

ii. Considerations made for venues from the planning stage

We will avoid CO₂ emissions through the procurement of eco-friendly construction materials, the utilisation of recycled materials, and the adoption of passive design in permanent new venues.

Specifically, we will enhance the procurement of eco-friendly construction materials and the utilisation of recycled materials in a planned manner while respecting Sustainable Sourcing Code. For permanent new venues, we will adopt passive design, in which the benefits of nature, including natural light and ventilation, are utilised. Furthermore, we will seek to reduce CO₂ emissions to be generated when generators are heavily used, through stable electric power supplies achieved by using commercial power in a planned manner. At the same time, through the planned reuse of excavated materials at construction sites, we will reduce environmental loads associated with CO₂ emissions generated by bringing excavated materials in and out of the sites.

For Games operations, we will identify and control risks, which may increase CO₂ emissions or have other adverse impacts, to take appropriate measures from the planning stage.

(3)-2-2. Reduction of emissions

To reduce Games-related and post-Games CO₂ emissions as much as possible, we will make buildings energy-efficient by adopting the highest level of energy-saving technologies. We will also enhance the adoption of highly energy-efficient facilities and equipment, as well as implement energy management, by utilising BEMS* and other systems. Furthermore, we will introduce equipment, which runs on solar or other renewable energy, to Games venues, and encourage green transport.

* Building Energy Management System

i. Energy-efficient buildings

For permanent new venues and permanent venues to be renovated on a large scale, we will encourage the adoption of passive design, in which the benefits of nature, including natural light and ventilation, are utilised, to achieve energy efficiency. In addition, we will make buildings energy-efficient by adopting the highest level of energy-saving technologies and implementing roof greening.

For venues Ariake Arena and the Olympic Aquatics Center, permanent new sports facilities covered by the Tokyo Metropolitan Guidelines for Green Buildings, in particular, we will aim for a rating of Grade 3, the best evaluation specified in the Policy. Furthermore, we will adopt eco-friendly functions and technologies. In terms of CASBEE, a green building rating system in Japan, which serves as an equivalent of the LEED rating system in the US, we will seek a rating of Class S for Ariake Arena and the Olympic Aquatics Center, the best rating in CASBEE, and CASBEE Class S for the Olympic Gymnastic Center, a temporary large indoor sports venues or short-term use.

For construction of the Olympic Village, in terms of environmental measures implemented according to energy saving standards, we will adopt CASBEE for Urban Development, a tool to assess the overall project in terms of the development of an entire region, including buildings. In addition to CASBEE, we will also adopt specific factors of the LEED-ND (Neighborhood Development) standards to the full. (The launch of construction is planned for January 2017. The completion of the development of portions necessary for the Games is planned for December 2019.) For residential buildings to be temporarily used as the Olympic Village, in particular, we will discuss the installation of photovoltaic generators over the whole area because the buildings will be renovated as houses after the completion of the Tokyo 2020 Games. Furthermore, we will install hydrogenstations to supply hydrogen for fuel-cell vehicles. We will discuss the adoption of new technologies, including hydrogen pipelines and next-generation fuel cells, to make the Olympic Village a good example for the realisation of the hydrogen society, as a legacy of the Games, by establishing a hydrogen supply system.

Example: Efforts made by the Tokyo Metropolitan Government to promote low-carbon buildings

The Tokyo Metropolitan Government introduced the Green Building Program in new buildings, etc. with a total floor area of over 5,000 sq. meters (and new buildings, etc. with a total floor area of over 2,000 sq. meters optionally) to require owners to apply green measures to their buildings, such as the improvement of energy saving performance, the utilisation of renewable energy, and the enhancement of greening. To be rated Grade 3, the best evaluation, the achievement of a minimum ERR* of 25% or 30% is required in terms of energy saving performance (according to the program revised in August 2016, and enforced in April 2017). For existing buildings, the improvement in energy saving performance is required through the imposition of a duty on large-scale establishments to reduce total emissions according to a cap-and-trade system; with regard to small and medium-sized establishments, through a global warming countermeasures report system.

As a result of these efforts, for the cap-and-trade and global warming countermeasures report systems, 25% and 13% reduction has been achieved, respectively. The improvement in environmental performance of buildings has resulted in many green buildings in Tokyo. Utilising energy-saving and green building technologies cultivated through these efforts, we will develop sustainable facilities for the Olympic and Paralympic Games.

* ERR (Energy reduction rate): Reduction rate of energy use in a facility system

Example: Make a Hydrogen Society a Legacy of the Tokyo 2020 Games

Hydrogen energy is next-generation low-carbon energy. Its only emission when consumed is water. To realise a hydrogen society, the Tokyo Metropolitan Government is working on the promotion of hydrogen energy by encouraging the broad use of fuel-cell vehicles and developing hydrogen stations.

For the Tokyo 2020 Games, we will make the best use of hydrogen energy: Games official vehicles and buses connecting venues are to be fuel-cell vehicles, and the Olympic Village is to serve as a good example for the realisation of a hydrogen society, as a legacy of the Games, through the achievement of a hydrogen supply system by developing hydrogen pipelines. Furthermore, in cooperation with Fukushima, a prefecture affected by the Great East Japan Earthquake, the Tokyo Metropolitan Government will promote CO₂-free hydrogen production using renewable energy in Fukushima Prefecture and discuss its use at the Tokyo 2020 Games. With the Games as an impetus, we will encourage the broad use of hydrogen energy and hand down a hydrogen society as a legacy of the Tokyo 2020 Games.

ii. Encouragement of the adoption of facilities and equipment with high energy-saving performance

For venues associated with the Games, we will seek to reduce CO₂ emissions by encouraging the adoption of facilities and equipment with high efficiency and energy-saving performance, as well as low-polluting equipment. For accommodation for those involved in the Games, we will also promote energy-saving measures.

Specifically, for the procurement of mechanical equipment, parts and services to be used in venues other than those mentioned in i, we will encourage the procurement of products and parts with higher efficiency and energy-saving performance, as well as the adoption of low-CO₂ emission, low-polluting construction machinery.

In preparations for the world's largest sports event, the Olympic and Paralympic Games, the procurement of various goods and the provision of services will take place. The details of them are mostly to be determined. Thus, considerations of sustainability will be arranged and implemented in parallel. Examples of approaches to be taken for the Tokyo 2020 Games are as follows:

- to reduce CO₂ emissions from torches used in the Torch Relay, and those from the relay caravan
- to reduce CO₂ emissions and save resources with regard to the production of uniforms for those involved in the Games
- to save energy when adopting digital signage
- to reduce CO₂ emissions when organising live sites
- with regard to accommodation for those involved in the Games, to promote energy-saving measures
- to encourage suppliers to give due consideration to the environment

Details of these approaches are being developed.

iii. Implementation of full-scale energy management

For operations of Games-related venues, we will reduce the usage of energy through light and air-condition management, as well as energy-efficient hot-water supply, e.g. partial lighting in offices, and air-conditioner temperature setting at 28 °C through the implementation of “Cool Biz”.

With regard to the state of energy use, for venues equipped with the BEMS, which uses information and communication technology, we will enhance effective energy management in buildings by utilising energy consumption data obtained from the BEMS. For venues without the BEMS, we will enhance appropriate energy management by seeking to grasp the state of energy use through proposals for the adoption of smart meters or other means to observe energy consumption.

Residential buildings in the Olympic Village will be renovated for housing and other uses after being temporarily used as accommodations for Olympians and Paralympians during the Tokyo 2020 Games, and contribute to managing and limiting energy consumption through adopting fuel cells for household use and energy management systems.

iv. Active adoption and use of renewable energy

Solar and other renewable energy is an important energy source not only in the sense that it serves as global warming countermeasures generating no CO₂ emissions during operation, but also in the sense that it functions as an emergency power supply. For the Tokyo 2020 Games, we will introduce various types of renewable energy, including solar power and heat, in permanent venues. For energy to be used for Games operations, we will make best use of renewable energy by encouraging the exploitation of green energy through the utilisation of Green Power Certificates and Green Heat Certificates system. We will also seek to make this movement a well-established legacy.

By making full use of renewable energy generated in regions outside Tokyo as well, we will reduce Games-related CO₂ emissions in total. In May 2016, the Tokyo Metropolitan Government concluded a basic agreement on coordination and cooperation regarding the research and development of CO₂-free hydrogen and renewable energy with Fukushima Prefecture and other institutions. We will promote these approaches.

v. Enhancement of green transport

For Games operations, the transport of large volumes of workers, materials and waste is required. Therefore, for the Tokyo 2020 Games, we will use low-polluting, low-CO₂ emission official fleet while making best use of the world's most advanced, energy-efficient public transport. We will also tackle the reduction of environmental loads, especially CO₂ emissions, by taking various approaches in an integrated manner, including the use of Intelligent Transport Systems (ITS) and the promotion of eco-driving through full-scale activities to raise public awareness.

v-1. Encouragement of the use of public transport

To avoid CO₂ emissions associated with spectators' travel as much as possible, we will take necessary measures, such as providing advance notification and guidance, to make full use of Japan's public traffic networks and transport systems, including railways and buses.

At this time, all railway vehicles in Tokyo are already electrified. Thus, the percentage of low-polluting vehicles is 100%. In addition, we will promote the adoption of vehicles with advanced energy-saving technologies, such as the variable voltage variable frequency (VVVF) control and the regenerative braking system, seeking to increase the percentage of these vehicles to nearly 100% by 2020.

v-2. Measures only for vehicles

For fleet associated with the Games, including cyclic buses within the Olympic Village and shuttle buses to transport athletes, electric, fuel-cell, hybrid or other low-polluting, fuel-efficient vehicles will be used as much as possible. For fleet to be used in the Torch Relay and other programmes, we will select and secure appropriate vehicles. For public buses, which will serve as one of the means of transport for spectators, we will adopt hybrid and fuel-cell vehicles wherever possible. We will make this policy known to transport businesses to request them to cooperate. For fuels to be used, we will study the possibility of utilising biofuels.

Furthermore, we will make eco-driving techniques, e.g. idle reduction during driving, known to the public.

v-3. Considerations given to transport of Games-related materials

For Games operations, it is necessary to transport large volumes of materials and waste. Therefore, we will encourage the reduction of CO₂ emissions associated with logistics through the utilisation of low-polluting, fuel-efficient vehicles and the full-scale implementation of idle reduction and other eco-driving techniques by transport businesses and waste disposal companies.

For transport of materials and waste, in particular, we will aim to reduce CO₂ emissions by securing efficient transport routes according to transport plans developed in advance, and implementing efficient transport according to the state of road congestion.

For food procurement, the use of domestic agricultural, forestry and fishery resources is thought to contribute to the utilisation of regional resources, the enhancement of invigoration of regional economies, and the reduction of CO₂ emissions. Therefore, we will seek to reduce CO₂ emissions associated with logistics by selecting food in season and that produced in neighbouring regions wherever possible, with consideration given to quality and costs.

v-4. Measures against traffic congestion

We will seek to reduce environmental loads by easing traffic congestion in areas around venues through various measures, including the implementation of transportation demand management (TDM) and the use of Intelligent Transport Systems (ITS), which utilises leading-edge information and communication technologies.

vi. Measures against GHG emissions other than CO₂

Although GHG emissions other than CO₂ make up a little less than 10% of the whole, countermeasures against them are also important. Particularly, emissions of HFCs have increased by approximately 180% since 2005, and are projected to continue growing. The Kigali Amendment to the Montreal Protocol, adopted in October 2016, mandates countries to begin to phase down the production and usage of HFCs in 2019. Thus, reinforcement of measures against these emissions is being required.

Of particular note is that HFCs and other CFC substitutes are used as refrigerants for refrigerators and air conditioners. Therefore, for the procurement of goods associated with the Tokyo 2020 Games, we will take appropriate measures on an as-needed basis at the procurement stage, e.g. procuring non-fluorocarbon (natural refrigerant-based) equipment. When it is necessary to remove used refrigeration and air conditioning equipment, we will take appropriate measures to prevent fluorocarbon leaks.

(3)-2-3. Dealing with CO₂ emissions generated even when preventive measures have been taken (Carbon offsets, etc.)

At large-scale events and projects, it is inevitable that a certain amount of CO₂ emissions is generated even when preventive measures have been taken. Methods to offset these emissions have been attracting increasing attention. Possible offset methods are those using Green Power Certificates system, in which the environmental value of electricity is proved in the form of a certificate, and those of compensating with CO₂ reduction effects achieved elsewhere.

For the Tokyo 2020 Games, we will consider the offset of CO₂ emissions as one of the tools to communicate the importance of the avoidance and reduction of CO₂ emissions domestically and internationally. The implementation of measures including the following is to be discussed:

- the offset of CO₂ emissions associated with Games operations through Green Power Certificates system
- participatory offsets through schemes in which all the people and entities Japan can participate

(3)-2-4. Other measures such as adaptation strategies

Mitigation strategies, such as the avoidance and reduction of GHG emissions, and adaptation strategies for climate change are considered complementary to each other to reduce and control climate change risks. In Japan, the National Plan for Adaptation to the Impacts of Climate Change was approved by the Cabinet in November 2015. The Paris Agreement adopted at the COP21 requires each nation to engage in adaptation planning processes and the implementation of actions.

Temperatures are significantly increasing all over Japan. As a result of this fact, the term “extremely hot day” (35°C) was introduced in 2007. In Tokyo, partly because of the urban heat island effect, the average temperature has increased by about 3°C over the past century, whereas that in Japan has increased about 1.1°C. The number of hours during which temperatures are higher than 30°C has increased 1.7 times compared to that in the 1980s, resulting in a surge in the number of heat-illness patients. Local short-time heavy rains frequently occur. Therefore, for the Tokyo 2020 Games, we will implement adaptation strategies to reduce the impact of temperature increase as much as possible.

Specifically, we will take various measures in terms of both hardware and software. For hardware, our approaches are as follows: developing pavement with thermal barrier coatings and other functions that help curb rises in road-surface temperatures; creating leafy shade by making use of roadside trees; and installing shading devices in areas around Games venues. For software, the approaches are as follows: taking measures according to guidelines for preventive measures against heat-illness at summer events, making the measures known to the public, and encouraging the broad use of *uchimizu* (sprinkling water), one of the Japanese traditional measures to mitigate summer heat.

(3)-3. Involvement, Cooperation and Communications (Engagement)

For the implementation of the avoidance and reduction of Games-related CO₂ emissions, the understanding and cooperation of the general public, including volunteers and spectators, are the most crucial. By broadening the range of efforts through vigorous involvement and cooperation of the general public and those associated with the Games, we will need to enhance consideration for sustainability. Therefore, while extensively communicating information and strengthening solidarity amongst all parties, we will promote measures to achieve decarbonisation through the involvement and cooperation of all parties.

Specifically, for permanent new facilities, we will study the possibility of the adoption of a system to indicate the volume of energy used and the state of generation/reduction of CO₂ emissions. Through this type of visual control, we will encourage people to take global warming issues as their own problems, while taking the opportunity of the Games to raise public awareness of energy savings and other related issues. Furthermore, we will communicate environmental technologies to be applied to the Games domestically and internationally through backyard tours as well as various business/environmental events to be held in tandem with the Games. In addition, through coordination and cooperation among all the people of Japan, the Tokyo Metropolitan Government and the Government of Japan, we will enhance the movement for the reduction of CO₂ emissions and accelerate the national movement for the development of a low-carbon society.

Note that these measures shall be taken according to “2-5. Involvement, Cooperation and Communications (Engagement).”

2-2. Resource Management

(1) Background

With the increase of the world's resource consumption due to the economic growth of emerging nations and other reasons, it is estimated that the world's resource consumption will be at least doubled by 2050. Given these circumstances, concerns for a serious shortage of natural resources and the increase of environmental impact due to resource extraction and consumption are rising. Accordingly, the world's attention is being focused on approaches to achieve sustainable use of natural resources in a broad sense, including supply chains. At the UN General Assembly in September 2015, the Sustainable Development Goals (SDGs), an ambitious new agenda for sustainable development, were adopted. One of the 17 goals is to "ensure sustainable consumption and production patterns."

Under these circumstances, the G7 Ise-Shima Summit was held. The Leaders' Declaration at the Summit stated that achieving the sustainable management and efficient use of resources is crucial for the protection of the environment, climate and planet, and that they endorse the *Toyama Framework on Material Cycles*, having in mind the importance of sustainable materials management and material cycle societies. The *Toyama Framework on Material Cycles*, which was adopted at the G7 Toyama Environment Ministers' Meeting, requires G7 members to take concrete "ambitious actions" in a cooperative manner under the G7 Common Vision. The Common Vision is as follows: "Our common goal is to realize a society that uses resources, including stock resources, efficiently and sustainably across the whole life cycle, by reducing the consumption of natural resources and promoting recycled materials and renewable resources so as to remain within the boundaries of the planet, respecting relevant concepts and approaches. All this is to ensure that society circulates resources repeatedly, minimises waste emissions into nature and manages environmental burdens within an acceptable limit. Such a society also achieves a sustainable low-carbon society that can create jobs, strengthen competitiveness and realize green growth." Initiatives for organic waste, including food loss and waste, are indicated as a concrete example of resource efficiency and the 3Rs (reduce, reuse, and recycle). The framework describes the importance of promoting reduction in food loss, effective recycling of food waste, effective utilisation as an energy source, and utilisation of biomass.

In addition, the G7 Leaders' Declaration stated as follows: "We reaffirm our commitment to address marine litter, recognizing that our efforts on resource efficiency and the 3Rs also contribute to the prevention and reduction of marine litter, particularly plastic, from land-based sources. Furthermore, we support scientific work to enhance global ocean observation and assessment for the science-based management, conservation and sustainable use of marine resources."

In Japan, on the eve of the arrival of an aging society facing a significantly declining birthrate and depopulation, it is absolutely necessary to develop a better system for resource cycles and waste disposal. Reinforcement of efforts, including the further implementation of the 3Rs, is being required.

In 2013, the Ministry of the Environment developed the 3rd Fundamental Plan for Establishing a Sound Material-Cycle Society, specifying the establishment of a 3R-conscious lifestyle and local recycling zones, and the development of a social and economic system with high resource efficiency. The plan aims to achieve goals including the following: 25% reduction of municipal waste by FY 2020 compared to FY 2000, improvement in the resource cyclical use rate (= amount of cyclical use / (amount of cyclical use + input of natural resources, etc.)) to 17%, and 70% reduction of the final disposal amount compared to FY 2000.

The Host City, the Tokyo Metropolitan Government, developed Sustainable Design TOKYO (a plan for resource cycles and waste management) in March 2016. As its underlying concept, the plan proclaimed that Tokyo tackles the shift to sustainable resource use in cooperation with various parties, including advanced companies, various businesses, NGOs/NPOs and municipal governments, in order to fulfil its responsibility as a metropolis of a developed nation to reduce global environmental burden.

During the Olympic and Paralympic Games, in particular, a large volume of materials and goods are procured, used and discarded within a short period of time. For the Tokyo 2020 Games, therefore, it is necessary to make efforts in terms of resource saving and cycles in every aspect of the Games, in tandem with domestic and international trends to attain the Sustainable Development Goals.

(2) Principles, Strategies and Goals

The Sustainable Development Goals (SDGs) was adopted in September 2015, and the G7 Ise-Shima Summit in May 2016 agreed on resource cycles. Given these recent initiatives, the international community will also expect the Tokyo 2020 Games to undertake major efforts toward resource cycles.

It is worthy of note that, for Japan, a nation with few natural resources, the concept of resource cycles is centuries-old culture, which is epitomized by the term “*mottainai*.” In addition, having established the Basic Act on Establishing a Sound Material-Cycle Society in 2000, Japan has been taking the initiative in leading the world in promoting the 3Rs to achieve resource cycles. Accordingly, it has a significant meaning for Japan to make efforts to hand down its approach toward sustainable consumption and production to the next generation as a legacy of the Tokyo 2020 Games.

It is essential to seek to ensure the sustainable use of resources through the sophistication of resource cycles by reducing resource loss, enhancing efforts to ensure sustainability at the time of natural resource extraction, and minimising new input of resources as well as environmental loads associated with waste disposal (the amount of landfills and GHG emissions, etc.) with “the renewal of resources” in mind in every aspect. Precisely because the Olympic and Paralympic Games are an event that draws widespread international attention, it is vital to implement efforts that can serve as a model of resource efficiency and circular economy to “ensure sustainable consumption and production patterns,” which is a target of the SDGs. It is also important to share these efforts with people around the world. This is the exact legacy that we will pursue.

Specifically, we will pursue the following objectives: the minimisation of useless resource consumption (= waste) (“reduce”), the utilisation of recycled materials, and the procurement of goods and services* for which measures have been taken to reduce environmental burden throughout the entire life cycle of resources, ranging from the procurement of raw materials through production and distribution to use and disposal.

For generated waste, we will examine and implement measures in the order of reuse, recycle, thermal recycling, and appropriate disposal.

* Goods and services: construction, construction and auxiliary materials, facilities and equipment, consumables, services, etc.

For the Tokyo 2020 Games, the principles shown below are provided to share the SDGs’ vision, “ensure sustainable consumption and production patterns,” with people around the world.

- **Maximisation** of resource efficiency
- Securing of resource cycles
- Encouragement of cooperation toward resource cycles

(3) Measures to Achieve the Goals

(3)-1. Accurate grasping of information on waste from its generation to disposal

We will estimate the amount of waste generation and manage the status of disposal in cooperation with delivery partners and municipal/private entities, by comprehensively grasping information throughout the Games process, ranging from preparations through operations to the removal of venues, overlay and FF&E after the Games.

(3)-2. Resource saving and cycles

We will seek to ensure sustainable use of resources with “the renewal of resources” in mind in every aspect, by reducing new input of resources through resource-saving efforts; implementing measures on a full scale to reduce, reuse and recycle waste; recovering heat and energy from waste disposal; and utilising water resources.

For resource management, we will take appropriate measures in comprehensive consideration of the viewpoints not only of resources and waste but also of climate change (reduction of GHG emissions).

Concrete approaches are shown below.

(3)-2-1. Saving resources and reducing waste generation

For Games preparations and operations, we will maximise resource efficiency through the enhancement of resource saving and the reduction of waste generation by deliberately procuring resource-saving goods and items that generate no or little waste; and by making resource-saving efforts, e.g. reduction of food loss, during Games operations.

Specifically, for Games venues, we will reduce the need for venues construction by utilising as many existing venues as possible. When the need to construct new venues or renovate venues arises, we will design permanent venues to have a long life expectancy and provide temporary venues with structural properties that allow materials to be reused even after the Games, to the greatest extent practicable.

For goods and services that need to be changed during the transition period between the Olympic and Paralympic Games, such as look transforming and equipment, we will design and procure goods and services that generate minimal waste during the period.

For the procurement of other goods and services, we will make efficient use of leasing and rental services as much as possible. In addition, in cooperation with sponsors, licensees, suppliers and concessions in venues, we will minimise the use of packing and wrapping materials, disposable containers, plastic shopping bags, etc.

Furthermore, in coordination and cooperation with sponsors and catering suppliers, we will reduce food loss and waste at venues and facilities as much as possible.

(3)-2-2. Reuse and recycle

For the Tokyo 2020 Games, we will foster efforts to reuse materials and goods having been used elsewhere, recycle materials and goods by using leading-edge environmental technologies, and enable materials and goods to be reused by third parties after the Games, so as to ensure resource cycles.

Specifically, to enhance reuse, we will utilise used materials at construction sites, make good use of leasing and rental services in terms of goods procurement, and adopt reusable eating utensils to the fullest extent possible. We will also reuse materials from temporary venues wherever possible.

To encourage recycling, we will use eco-materials for venues construction, and utilise recycled materials for the production of uniforms for those involved in the Games. In particular, for horizontal recycling, in which the quality of post-consumer materials can be maintained as seen in the production of plastic bottles from used plastic bottles, the Games are a perfect opportunity to communicate, to the world, the wisdom of making the utmost use of resources, and advanced environmental technologies that are supporting the wisdom. Therefore, in preparations for the Games, we will study the possibility of implementing recycling measures including the following:

- the creation of greener medals through urban mining
- the realisation of resource cycles at the Olympic and Paralympic Games by making good use of bottle-to-bottle recycling technology

Moreover, Games operations will entail much food served to athletes and other people involved. In serving food, while it goes without saying that minimising food waste is important, we aim to recycle inevitably caused food waste.

A major key to reuse and recycling is proper separation of produced wastes. For this purpose, we will improve the precision in waste separation by studying and introducing unified, universally understandable designs (color, pictograms, etc.) of waste recycling boxes. We will recycle thus separately collected waste by commissioning the task to

proper waste disposers, giving due consideration to the reduction of CO₂ emissions as well.

In addition, for goods used at the Tokyo 2020 Games, in cases where they can serve as commemorative items, we will utilise them by giving away or exhibiting them after use (upon consultation with the IOC).

(3)-2-3. Thermal recycling

Recovering heat from waste incineration (waste-to-energy and other heat utilisation) is important in terms of the integrated realisation of material-cycle and low-carbon societies. In recent years, waste incineration facilities function as energy recovering waste treatment facilities. In many facilities, new equipment has been introduced and its operating efficiency has been improved.

For waste that cannot be reused or recycled, we will seek to use resources effectively through thermal recycling and other means.

(3)-2-4. Appropriate waste treatment

For generated waste, we will apply appropriate treatment to sorted waste with “recycling” in mind in every aspect, according to relative laws and regulations.

For the implementation of waste treatment, we will ensure strict control with consideration given to recent cases of inappropriate reselling of food waste.

(3)-2-5. Others (Efficient utilisation of water resources)

It is estimated that the world’s demand for water will increase by some 55% by 2050 and approximately 40% of the world’s population will live in regions suffering from severe water stress. Thus, efficient utilisation of water resources is one of the most important tasks in the world.

In preparations for the Tokyo 2020 Games, as concrete means for the securing of global water resources, we will promote not only water saving, but also utilisation of rainwater and recycled water.

Specifically, for permanent new facilities, we will adopt a system in which stored rainwater is reused for toilet flushing after treatment.

Furthermore, we will communicate the high quality of tap water in Tokyo to the world.

Example: Safe and tasty high-quality water supply

To constantly supply safe and tasty high-quality water as an important lifeline supporting the lives of residents and urban activities in the Tokyo Metropolis, the Bureau of Waterworks Tokyo Metropolitan Government has implemented various measures, including the introduction of advanced water-purification systems to all water treatment plants along the Tone River, which makes up some 80% of the total water sources in Tokyo, and the enhancement of comprehensive water quality management from water sources to taps.



The bureau has also provided residents with information in a clear way about the advantages of tap water, such as its eco-friendly nature (because of the energy-efficient process of production and transportation of water supplied directly to household taps), its affordability (0.2 yen per liter), and its essentiality to everyday life (in infectious disease prevention by washing hands and gargling, kitchen work, bathing, and so on).

(3)-3. Involvement, Cooperation and Communications (Engagement)

For efforts to minimise new Games-related input of resources, and to enhance the reduction of waste generation as well as the reuse and recycling of waste, the understanding and cooperation of Tokyo 2020, administrative bodies and private entities, which are directly involved in these efforts, are necessary. On top of this, understanding and cooperation of the general public, including volunteers and spectators, are crucial. Therefore, we will create opportunities for all people associated with the Games, including volunteers and spectators, to involve themselves in and provide their cooperation to these efforts in an active manner. We will also induce more people to be involved in these efforts through broad communications.

Specifically, we will provide training for workforce associated with Games operations to make them more aware of the significance of sustainability and resource management. Furthermore, we will seek to reduce waste through the involvement and cooperation of individuals visiting competition venues, live sites and programmes, etc.

We will encourage people's understanding and cooperation regarding behaviour conducive for not generating waste in the first place, as well as waste separation rules at competition venues, by communicating, in an active manner, the Japanese concept of *mottainai* (sense of avoiding waste) and our efforts to reuse and recycle resources.

Note that these measures shall be taken according to "2-5. Involvement, Cooperation and Communications (Engagement)."

2-3. Natural Environment and Biodiversity

(1) Background

One of the Tokyo 2020 Games' aims is to enable people to enjoy a comfortable urban environment that is well harmonised with the natural environment, through minimising negative impact on the environment, including air and water quality, and providing a good model of a biodiverse urban environment rich in water and greenery.

In addition to its location in the temperate monsoon climate zone, what characterises Tokyo today in environmental terms is the major changes it is experiencing in various aspects, including not only temperature but also rainfall patterns and the biota, due to the temperature increase caused by global warming and local heat island phenomena. The metropolis provides an internationally rare case of a mega city in a mature society facing such situations. In creating its legacy for a sustainable environment, Tokyo must play a role in showing domestic and international communities the desired future direction of a mature mega city whose environment is distinctly different from major cities in Europe and the Americas.

As a country that has the prior experience of overcoming pollution problems, including air and water pollution, caused by industrial development, Japan has been striving to minimise burdens on the natural environment, including the air and water, through its world-leading environmental technology and regulations. Tokyo, in particular, has added to such national initiatives its own stricter environmental regulations, including diesel vehicle emission controls. Moreover, the national and metropolitan governments have used the findings from these efforts when transferring their technologies to help developing countries to restore the environment.

There are some other examples of environmental initiatives to be cited from the perspectives of international efforts and collaboration: acid rain monitoring through collaboration among 13 East Asian countries, including Japan, in the anti-air-pollution field, and efforts to decrease the amount of wastes dumped at sea based on the London Convention and Protocol in the anti-water-pollution field. It is desirable that such collaboration will be further developed using the Olympic and Paralympic Games as a springboard.

Meanwhile, in terms of biodiversity, Japan has shown its own initiative in pursuing international approaches to the conservation of biodiversity and its sustainable use, as seen in the 10th Conference of Parties (COP 10) to the Convention on Biological Diversity, an international framework for the conservation of biodiversity, the sustainable use of its components, etc., hosted by Japan in 2010. The COP 10 adopted the Aichi Target, a globally

shared target for biodiversity, whose final year is 2020. The year 2020 is thus also internationally important for biodiversity.

Tokyo as the Olympic/Paralympic host city devised its regional strategy for biodiversity titled the “Tokyo Green Plan 2012: City Biodiversity Strategy” in May 2012 to accelerate its own efforts to “Conserve, Create, and Harness” greenery, encouraging the planting of native species, protecting rare species, disseminating information about biodiversity to raise public awareness of it, and so on. Also, the metropolis revised the Tokyo Environmental Master Plan in March 2016, which provides that Tokyo has to adopt measures to create greenery in urban spaces, promote greening in consideration of biodiversity, and so on.

The host cities of the past Olympic and Paralympic Games also tackled the challenge of conserving biodiversity in various ways: the London 2012 Games had the visions of conserving biodiversity, creating urban green spaces, etc., and pursued the initiative of minimising or mitigating negative effects of construction works on native species and their habitats, executing the Olympic Park Biodiversity Action Plan. The Rio 2016 Games aimed to conduct research on animal and plant species and conserve wild species in the areas prone to the effects of Olympics/Paralympics-related activities, in order to minimise the damaging impact on the existing local ecosystem and take the opportunity of the Olympic/Paralympic Games to restore the ecosystem.

The Tokyo 2020 Games are hosted by a city that is located in a biodiverse area by nature in the hot and humid monsoon climate zone and that has entered into the height of maturity. It is hoped that Tokyo will provide a good model for other cities both in Japan and abroad that share a similar natural environment and that will follow the metropolis in the future, in terms of how to address the challenge of biodiversity using original ideas and methods different from those used by major cities in Europe and the Americas, which have similarly entered into the height of maturity but whose climates are distinctly different from that of Tokyo.

The Tokyo 2020 Games will be held mainly in the Heritage Zone, where many of the venues of the Tokyo 1964 Olympic Games will be utilised again, and in the Tokyo Bay Zone, which will be developed near the sea, with the Olympic/Paralympic Village as the core. Based on the background described in this section, the Tokyo 2020 Games aim to further promote greening in consideration of local ecosystem networks and create a rich urban environment, by utilising existing facilities, green and seaside spaces, etc., to the maximum throughout the entire process of holding the Games, from planning to the preparation of sports venue construction, etc., and the management of the venues, and by minimising burdens from the construction and management of the venues and other facilities on the natural environment, including the air, water, and soil.



Figure: Venue zoning

(2) Principles, Strategies and Goals

The Heritage Zone, where marathons and cycling(road) will be held, is home to the Imperial Palace and Meiji-jingu Gaien, surrounded with greenery and water, which are potential core areas for biodiversity. Meanwhile, the Tokyo Bay Zone has the Tokyo Bay coastal area, where the Olympic/Paralympic Village and the venues of swimming, rowing and other sports will be located, and which can also be a core for biodiversity, with rich greenery and water. The Tokyo 2020 Games will be held in these areas that strongly prefigure Tokyo's further development toward the future.

In addition to the excellence of sports themselves, the Olympic and Paralympic Games have the incomparable power of influence so that they can greatly heighten people's awareness of sustainability in environmental and other fields. It is expected that the Tokyo 2020 Games will practically exemplify the ways to create a perfect harmony between a city, human beings, and the necessity of environmental conservation, by showcasing comprehensive environmental policy on the occasion of the Games held in a water- and greenery-rich environment. Since the year 2020 as the final year of the Aichi Target, in particular, is internationally important for biodiversity, it is also essential to take this opportunity to raise public awareness.

The Tokyo 2020 Games are required to help create a comfortable urban environment in complete harmony with the natural environment in the following ways: by minimising environmental burdens, including air pollution from automobiles and the like, as well as noises and water pollution from construction works and venue management, through environmental regulations based on laws and ordinances, which are probably among the strictest in the world; by taking into account diverse species inhabiting the Heritage and Tokyo Bay Zones and other areas rich in green and waterside spaces, which can be cores for the restoration of the natural environment in the heart of Tokyo; and by creating many more spaces filled with abundant greenery in these zones.

Meanwhile, cities in Japan are characterised by the farmlands they contain. Tokyo is also not an exception: various agricultural products, including vegetables, fruits, and flowers, are grown in farmlands in Tokyo today. It is hoped that, not merely producing agricultural products, such urban farmlands will also bridge the gap between suburban mountainous and hill areas and downtown green spaces, serving as nodes in the network of greenery, which is a matrix of biodiversity. Also, it is desirable that farmlands in Tokyo will play roles in the case of disaster, by providing food supplies and shelters, for example.

Moreover, the mountainous areas in western Tokyo are home to forestry, while the bayside areas and islands in Tokyo are home to fishery. Though a mega city with a population of over

10 million, Tokyo thus has the great advantage over cities in Europe and the Americas of producing various primary-industry products which contribute to conserving biodiversity and the natural environment and reducing disaster risks. Promoting sustainable sourcing in consideration of the environment requires making full use of domestic agricultural, forestry, and fishery products, including products from Tokyo.

(3) Measures to Achieve the Goals

(3)-1. Improving the air and water environment

Providing athletes with an environment where they can live and compete without worry about air and water pollution is essential for enabling them to give their own best performance.

The Tokyo 2020 Games will utilise world-leading environmental technologies to provide a safe and secure air and water environment.

Specific measures to be adopted are as follows:

(In terms of chemicals and the air)

- Procuring and using materials, products and services (including construction works) that comply with related laws and ordinances as long as possible (e.g., low-VOC products, alternative-CFC or CFC-free products), and properly managing resulting wastes
- Minimising environmental burdens in the form of air pollution from automobiles, construction machinery, etc., by using Japan's advanced environmental technologies, including low-emission and fuel-efficient vehicles and construction machinery, not to mention observing strict regulations based on laws and ordinances

(In terms of water)

- Disseminating information about Tokyo's sophisticated water supply system, including its ability to supply safe and delicious water through advanced water purification processes
- Disposing of wastewater from facilities in Tokyo through advanced wastewater treatment processes at the Tokyo Metropolitan Government's Water Reclamation Centres
- Systematically dredging bottom sludge and cleaning water surfaces at sections of rivers, canals, etc. with less water flow on a regular basis, in order to maintain and improve the quality of river water, prevent offensive odors, and reduce pollution loads flowing into Tokyo Bay
- Adopting measures, such as building rainwater storage facilities and wet-weather high-speed filtering facilities, to reduce the times of water discharge and the amount of subsequent pollution loads from combined sewer systems to Tokyo Bay in wet weather, and dredging bottom sludge and cleaning water surfaces systematically

(Other)

- Reducing environmental burdens from venue construction and management, etc., by using Japan's advanced environmental technologies, including low-noise and low-vibration construction machinery, based on laws and ordinances
- Appropriately conducting soil surveys and necessary treatment based on laws, ordinances, and the like, to construct the venues and other facilities

(3)-2. Ensuring conservation of biodiversity

We aim to minimise the negative impact of the Tokyo 2020 Games on biodiversity, develop a network of greenery by creating new green spaces, and restore and create habitats of diverse species.

(3)-2-1. Consuming resources in consideration of biodiversity and other factors

While Japan depends upon imports from other countries for many biological resources, the world is experiencing rapid reduction of forests due to plantation and pasture development, etc., as well as the severe impact of overexploitation of living marine resources on the marine ecosystem, resulting in damaging impact on habitats of vulnerable species.

To address these challenges, we will take into consideration the entire supply chains' impact on biodiversity in procuring timber, timber products, paper, agricultural and fishery products, etc., based on the Sustainable Sourcing Code. Also, we will require our suppliers and licensees to make efforts to reduce impacts placed on the ecosystem by harvesting or growth of raw materials, and to avoid using illegally logged timber and the like, as well as raw materials derived from endangered species.

(3)-2-2. Creating green spaces

Mainly in Tokyo as the host city, we will cooperate with businesses and other bodies to build and improve urban parks and park-like open spaces and to create greenery along major highways, as well as to network core green spaces using the lines of greenery and water.

In FY 2008 the Tokyo Metropolitan Government initiated the roadside tree enhancement project (also known as the "One Million Street Trees in Tokyo" Project) with the end of FY 2015 as the deadline, and achieved the target figure by the end of FY 2015. The Tokyo Metropolitan Government will also establish a network of water and greenery as a great natural refreshment for people in the metropolis, by constructing and improving urban-planning parks and green spaces, based on the Policy on Building and Improving Urban-planning Parks and Green Spaces.

Moreover, the Umi-no-Mori (Sea Forest) Project is being carried out in the Inner Central Breakwater Reclamation Area in Tokyo Bay to turn the heaps of landfill waste into beautiful forests by planting saplings there. The project has so far resulted in a large

body of greenery created by planting 240,000 saplings, such as Japanese chinquapin (*Castanopsis sieboldii*) and *tabunoki* (*Machilus thunbergii*), which will hopefully serve the purpose of mitigating heat island effects as a starting point of wind flows from the sea to the heart of the metropolis, and contribute to preventing global warming.

(3)-2-3. Greening Olympic and Paralympic venues and other places

In building and improving Olympic and Paralympic venues and other facilities, we will basically conserve existing greenery by avoiding negative effects on existing trees as much as possible. In the cases of newly greening such places, we will plant native and other species in consideration of biodiversity. Aiming to connect the Tokyo Bay coastal and nearby areas and the heart of the metropolis with green spaces and corridors, we will take into account diverse species inhabiting the local areas.

We will design and construct Olympics/Paralympics-related venues, including competition venues and the Olympic/Paralympic Village, to surround these venues and nearby areas with water and green corridors and to complement and harmonise with the surrounding natural environment, as well as greening the venue sites themselves. We aim to enhance the charms and liveliness of local areas through greening, for example, by using flowers that evoke the feelings of seasons.

Also, we will examine the possibility of rooftop and wall-surface greening, and implement it as much as possible.

Meanwhile, the Olympic Stadium, the construction of which is under the responsibility of the Japan Sports Council, is aimed at being a “forest stadium,” a “‘stadium of wood and greenery’ wide open to citizens, and an “‘eco-friendly stadium’ that is close to the earth and creates sustainable forests.” More specifically, the selected plan for the stadium promises to use plant species suitable for the local climate, mainly including native species inhabiting the Meiji-jingu Gaien area, for greening; to place greenery units on the eaves; and to utilise as many existing trees as possible, including all transplanted trees, on the site, with the aim of connecting the stadium to Meiji-jingu Naien and Gaien (the inner precincts and outer garden of Meiji-jingu Shrine), Shinjuku Gyoen National Garden, the Akasaka Imperial Residence, and the Imperial Palace to create a network of greenery.

Furthermore, the Olympic/Paralympic Village will be designed to be a community where people can enjoy close relationships to water and greenery and feel relaxed and peaceful.

In greening the main roads that will be used for marathons and other sports, roads near the venues and other roads, we will cooperate with the private sector, including businesses and other bodies, to enhance the quality of street trees in order to ensure the usefulness of the shade of trees as an anti-heat measure, and to enable local citizens and tourists to feel comfortable with flowers and greenery while appreciating their beauty, by creating flower beds in greenery strips along the roads, for example. Also, we will examine the possibility of placing temporary greenery units in places where the creation of permanent greenery is difficult.

(3)-2-4. Restoring the natural environment and ensuring biodiversity

When construction and improvement works for the venues, etc., involve alterations to the natural environment, including cutting trees, we will make efforts to restore and create habitats of diverse species in full consideration of the characteristics of local areas and biodiversity, including native species.

Meanwhile, when construction and improvement works for the venues inevitably affect existing trees, we will examine and adopt measures to minimise the impact.

(3)-2-5. Places for friendships with nature

Most events of the Tokyo 2020 Games will be held in mature urban spaces. We aim to create places in an environment that enables people to coexist, build friendships, and feel familiar and comfortable with greenery and the waterside, even in such urban centres.

(3)-3. Creating beautiful landscapes

The Tokyo 2020 Games will serve as a springboard for enriching the network of water and greenery in Tokyo.

In addition to greening waterside spaces such as riverside areas, we will expand our efforts to establish a network of greenery organically combining urban parks and street trees with these greened waterside spaces. In particular, taking advantage of the Games mainly held in the coastal areas, we will create attractive landscapes with water and greenery, by producing cores of liveliness through providing people with places to feel closer to water and creating harmony between the venues and the natural environment.

Also, we will design the venues and other related facilities to harmonise with the surrounding environment and landscapes.

Additionally, we aim to create landscapes filled with flowers and greenery with the participation and collaboration of diverse human agents.

(3)-4. Involvement, Cooperation and Communications (Engagement)

We will help citizens to achieve a better understanding of the importance of nature and the conservation of biodiversity by providing them with opportunities to participate and collaborate in efforts to conserve green spaces and other activities, as well as by implementing many more projects to raise public awareness of nature and biodiversity. For example, we will enhance citizens' motivation to conserve the natural environment through the campaign "Tokyo Fund for Flowers and Greenery." Also, we will examine possibilities and measures for cooperation using initiatives and expertise of the private sector, including businesses and other bodies, aiming to expand the circle of participants and cooperators.

Furthermore, we will communicate information about the diverse and rich natural environment even outside the Olympic and Paralympic venues, including abundant greenery in the Tama area and the waterside in the coastal areas.

These efforts will be made based on "2-5. Involvement, Cooperation and Communications (Engagement)" in this Plan.

Column: Planting street trees using the Tokyo Fund

The roadside tree enhancement project (also known as the "One Million Street Trees in Tokyo" Project), which was initiated in FY2008, ended with the target achieved at the end of FY2015, resulting in corridors of greenery enriched through efforts to create streets lined with seasonal flowers and fruits, which evoke the feelings of seasons.

Also, the "My Tree" Programme, which had been carried out in parallel with the above-mentioned project, ended in success in cooperation with many citizens and companies.

The Tokyo Metropolitan Government will thoroughly maintain and manage the street trees that have been so far planted, according to stages of the plants' growth, and create and improve a comfortable road environment suitable for a mature city, aiming to encourage many more street trees' healthy growth and promote street greening.

2-4. Consideration of Human Rights, Labour and Fair Business Practices

(1) Background

Amid the rapid progress of globalisation, the world today faces human rights-related challenges that cannot be easily resolved, including discrimination and harassment, as well as hate speech, on the basis of race, nationality, gender, sexuality, level of ability, and others. Additionally, there are still labour issues in the fields of resource exploitation, manufacturing, and the like, such as child labour and forced labour, with public concern about overwork and the working poor in Japan. Moreover, situations involving unfair practices, including corruption and false-labelled products, require businesses to observe fair business practices.

Mainly to address these challenges, the International Organization for Standardization (ISO) launched ISO26000 (international standards for organisational social responsibility) in November 2010, which presents seven principles of social responsibility and seven core subjects as follows, aiming to contribute to sustainable development. Many businesses and organisations are implementing their initiatives modeled after these principles and core subjects.

Principles of social responsibility	Core subjects
<ul style="list-style-type: none"> • Accountability • Transparency • Ethical behaviour • Respect for stakeholder interests • Respect for the rule of law • Respect for international norms of behaviour • Respect for human rights 	<ul style="list-style-type: none"> • Organisational governance • Human rights • Labour practices • The environment • Fair business practices • Consumer issues • Community involvement and development

Concerning human rights, the Olympic Charter clearly shows its position on respect for human rights in the section of the Fundamental Principles of Olympism, providing, “The enjoyment of the rights and freedoms set forth in this Olympic Charter shall be secured without discrimination of any kind, such as race, colour, sex, sexual orientation, language, religion, political or other opinion, national or social origin, property, birth or other status.” Also, the Paralympic movement ultimately aims to realise a society that includes people with disabilities, following the spirit of the United States Convention on the Rights of Persons with Disabilities.

(2) Principles, Strategies and Goals

The Tokyo 2020 Games Foundation Plan, which was released in February 2015, presents one of the core concepts for the Games Vision as “Unity in Diversity,” and states, “the difference among us span wide-ranging areas, from race, colour, sex, sexual orientation, language, religion, political or other opinion, national or social origin, property, birth, level of ability or other status. Readily accepting these differences and respecting one another allows peace to be maintained and society to continue to develop and flourish. This is the essence of the Olympic and Paralympic values, and there is no doubt that sport has the power to help achieve this goal.”

This concept truly provides the basis for the theme of consideration of human rights, labour, fair business practices, and so on, and not only Tokyo 2020 but also everyone involved in the Tokyo 2020 Games will encourage efforts to achieve these in every aspect of the Games.

Column: Tokyo 2020 Games PR Message

Tokyo 2020 drew up a PR message in the wake of the selection of the Tokyo 2020 Games Emblems in April 2016, to evoke a greater public longing for the Tokyo 2020 Games.

みんなの輝き、つなげていこう。
Unity in Diversity



<PR message>

(Japanese) *Minna no kagayaki tsunageteiko* (lit. “Connect everyone’s brilliance”)
(English) Unity in Diversity

* The English message is used to supplement the Japanese one.

This PR message was created to express our hope that chains of everyone’s own brilliant uniqueness will lead the Tokyo 2020 Games to a brighter future, in harmony with the core concepts of the Games, “Achieving personal best,” “Unity in Diversity,” and “Connecting to Tomorrow,” inspired by the hope embodied by the design of the emblems, which represent unity in diversity through a combination of three different kinds of squares.

(3) Measures to Achieve the Goals

(3)-1. Measures to take into consideration everyone involved in the Games

Based on one of the core concepts for the Games vision: “Unity in Diversity,” we aim to prepare for and run the Games while focusing on the perspectives of diversity and inclusion.

In particular, we will make efforts to enable women, children, people with disabilities, ethnic and cultural minorities, sexual minorities, including LGBTs, immigrant workers and others to enjoy equal rights in the Tokyo 2020 Games.

Specifically, we will pursue the following initiatives.

- Creating a better environment for the Games, including venues development, information security, and workforce education, to enable everyone to enjoy themselves in the Games, following the Tokyo 2020 Accessibility Guidelines, which will be devised later
- Providing worship rooms for athletes with faith in Christianity, Islam, Buddhism, Judaism, and other religions, to worship in the Olympic/Paralympic Village
- Serving meals considerate of religion and culture, including halal and vegetarian meals in the Olympic/Paralympic Village, venues and facilities
- Fostering public awareness of the respect for diversity and the consideration of human rights through the Olympic/Paralympic Cultural and Educational Programmes

Meanwhile, it is planned for the Olympic Stadium to have childcare rooms, nursing rooms, and baby carriage depositories, for the convenience of spectators with children.

Furthermore, the national government and incorporated administrative agencies, etc. will pursue the initiative on public procurement that highly evaluate the companies' initiatives in promoting good work-life balance, etc. based on the Act on Promotion of Women's Participation and Advancement in the Workplace (Act No. 64 of 2015), and other parties involved in the Games will also pursue similar approaches on procurement.

(3)-2. Measures to properly take into consideration the human rights and labour of the workforce

We will provide a human right-friendly labour environment for the paid staff to work comfortably (in terms of employment/labour conditions, social security, safety, sanitation, etc.), as well as a desirable environment for volunteers to participate in volunteer activities comfortably, and conduct campaigns for fostering awareness of sustainability to encourage everyone involved to engage in behaviour in consideration of sustainability naturally.

The initiatives to be taken for these purposes are as follows:

- Offering training about sustainability for the Tokyo 2020 workforce and other people engaged in related programmes, to raise awareness of sustainability among them
- Taking into consideration the labour and activity environment of the Tokyo 2020 workforce, complying with laws, ordinances, and international standards

(3)-3. Measures to take into consideration fair business practices

In preparing for and operating the Games, unfair transactions will never be allowed. In offering training on sustainability for the Tokyo 2020 workforce, and other people engaged in related programmes, Tokyo 2020 will focus on fair business practices as one of the important subjects.

In procuring products, services, etc., Tokyo 2020 will require that such products, services, etc. are provided in due consideration of sustainability, including respect for human rights and fair business practices, throughout the entire supply chains. (For more details, see 3-(2).) Involvement in sustainable sourcing for the Games will provide valuable experience for local and small and mid-sized enterprises in Japan, and stimulate them to enhance their own competitiveness in the global market, which leads to the sustainable development of their local communities.

Tokyo 2020 will therefore encourage enterprises in Japan to make efforts for sustainable sourcing, in cooperation with the Tokyo Metropolitan Government, which implements various initiatives, including Business Chance Navi 2020.

Additionally, we will appropriately take into consideration the human rights and labour of the workforce.

2-5. Involvement, Cooperation, and Communications (Engagement)

(1) Background

It is no longer rare for public organisations, including national and local governments, to implement various projects by encouraging various stakeholders' involvement and cooperating with them throughout a project's process, from the planning phase to the implementing phase. Also, there have been many cases where private companies provide opportunities to share information and have discussions with experts and local communities, in the form of stakeholder dialogue, for example, as well as cooperate with citizens in sustainable activities.

Moreover, ISO26000, concerning social responsibility of organisations, has "engagement" as one of its major concepts, emphasising the importance of an organisation's recognition of its social responsibility, its identification of its interested stakeholders, and its engagement with them, namely its dialogue-based interactive communication with them.

Holding Olympic and Paralympic Games, a huge event that attracts worldwide attention, requires support (including volunteering) from not only people directly involved in operating the Games but various delivery partners and many citizens.

Toward the Tokyo 2020 Games, we need to communicate related information with proper timing and achieve a consensus with reference to such parties' views and systems in cooperation with these parties.

(2) Principles, Strategies, and Goals

Chapter 7 of the Tokyo 2020 Games Foundation Plan, released in February 2015, defines “engagement” as “a series of activities aimed at promoting the Games as widely as possible and involving people from across Japan and the world in the creation and delivery of the Games.”

Additionally, the chapter includes the following activities for promoting engagement.

- (1) Formulating a unique Engagement strategy to contribute to the delivery of outstanding Tokyo 2020 Games
- (2) Devising and implementing a diverse range of programmes to ensure that people from all walks of life—regardless of age, nationality, language, ability, etc.—are able to participate in the delivery of the Games
- (3) Striving to evoke shared feelings among participants of having been actively involved and having made a significant contribution to the success of the Games, and bequeath this as a new legacy to future generations”

In the field of sustainability, based on the above-mentioned ideas, we aim to examine desirable initiatives for sustainability concerning the operation of the Games by listening to views of many people, including academic experts, public organisations, the private sector, and other organisations (NGOs/NPOs, industrial bodies, academia, etc.), to cooperatively succeed in holding the Games.

To promote engagement, we will actively share the direction of sustainability that the Games aim for to acquire the deep understanding of a wide range of the public, and ask these people for advice from expert perspectives to raise the level of sustainability of the Tokyo 2020 Games through cooperation.

Furthermore, we aim to pass down to new generations the importance of success through involvement and cooperation, which participants in these activities will share, as a new legacy.

(3) Measures to Achieve the Goals

(3)-1. Preparing for and operating the Games through involvement and cooperation

Realizing sustainable Games requires the involvement and cooperation of the general public, including volunteers and spectators, not only efforts by those involved in the Games. We will therefore pursue initiatives through involvement and cooperation by training volunteers and communicating with various human agents.

(3)-1-1. Pursuit of the preparation for and operation of the Games through diverse agents' involvement and cooperation

Tokyo 2020 established the Urban Planning and Sustainability Commission (the "Commission" hereinafter), which comprises academics, NGOs and other experts, while establishing other bodies attached to the Commission: the Sustainability Discussion Group, which examines specific issues and monitors progress, and Working Groups, which examine such issues from more specialist perspectives, to have deeper discussions. These bodies accepted the participation of those involved from the Tokyo Metropolitan Government and the national government as observers from the discussion phase to devise an effective plan in terms of the direction of subjects and specific measures.

Tokyo 2020 will have discussions with a wide range of agents, including organisations such as NGOs/NPOs, experts, Olympic/Paralympic sponsors and suppliers, and other private-sector agents, and ask a wide range of the public for opinions by running public comment campaigns. We will cooperate to implement our sustainability-related initiatives in the fullest consideration of sustainability from the planning phase, with reference to these people's opinions and systems.

Column: Volunteers in the Tokyo 2020 Games

While Tokyo 2020 will have approximately 80,000 volunteers who principally engage in activities within venues, the Tokyo Metropolitan Government will have over 10,000 volunteers and other municipal governments will have many volunteers who will serve as tourist guides and give directions.

We will maximise the contribution of volunteers in sustainability-related fields for the preparation for and operation of the Games by providing them with an environment that enables them to demonstrate their abilities to the fullest.

(3)-1-2. Education-based pursuit of the preparation for and operation of the Games through involvement and cooperation

Preparing for and operating the Games in consideration of sustainability through involvement and cooperation requires those who cooperate in the Games to understand what the concept of sustainability is and how it is related to the Tokyo 2020 Games and to our lives. For this purpose, we aim to cooperate with the wider public to implement various sustainability-related initiatives by raising awareness of sustainability among a wide range of people, from children to adults, through school and lifelong education, and volunteer training.

To provide such education and volunteer training effectively and efficiently, we will cooperate with NPOs/NGOs and the like that have expertise in such fields.

Specifically, we will examine the possibility of implementing the following initiatives.

- Carrying out sustainability programmes for Olympic/Paralympic education with the participation of schools and youth camps nationwide to deepen understanding of sustainability and encourage the youth to become involved in the Games; Facilitating education about sports and the environment for all elementary and junior/senior high school students in Tokyo, in particular
- Encouraging sustainable behaviour, involvement and cooperation by offering sustainability-related seminars, and implementing programmes for raising public awareness of sustainability with the participation of Olympians, Paralympians and other athlete ambassadors
- Providing children with the opportunity to become involved in the Olympics by continuing to implement the “One-School for One-NOC” programme, which encourages exchanges between a school and a participating nation
- Encouraging the entire range of people to participate in lectures, forums, campaigns, operating volunteer activities, and so on

There is no need to say that those involved in the Games also must be aware of sustainability. We will raise their awareness by incorporating the subject of sustainability into in-house training curricula.

(3)-1-3. Nationwide activities toward sustainable Games

Acquiring public involvement and cooperation in the preparation for and operation of sustainable Games requires nationwide understanding and cooperation, not to mention from host areas.

An example of such community-based initiatives is sports activities in consideration of sustainability at schools and in local communities. Additionally, the Tokyo Metropolitan Government will pursue community-based initiatives, such as promoting greening activities and encouraging citizens to accept homestays to take the opportunity of the Olympics and Paralympics to help revitalise local communities.

We will implement nationwide initiatives of ensuring sustainability with the participation of the entire range of the nation to further develop the Olympic/Paralympic movements and pass them down to future generations.

Specific initiatives to be implemented are as follows:

- Aiming to cooperate and collaborate with NGOs, universities and other bodies specialising in sustainability (Ref.: Collaboration agreements concluded with 786 universities and junior colleges by December 1, 2015)
- Establishing and developing a Tokyo 2020 Nationwide Participation Programme to accredit and encourage initiatives contributing to the Action & Legacy Plan around the nation, aiming to disseminate the importance of the concept of sustainability to people around Japan and to further promote sustainable preparation for and operation of the Games
- Helping raise awareness of sustainability among marketing partners by asking them for consideration of sustainability in preparing for and operating the Games, as well as encouraging their active commitment
- Promoting eco-friendly activities among hotels, restaurants, taxi companies, and other related businesses (e.g. reducing food wastes; enabling hotel customers to choose less-frequent exchanges of linens, amenity goods, etc.; stopping taxi engines while waiting for customers)
- Examining the possibility of running campaigns for reducing CO₂ with nationwide participation

Furthermore, we will raise public awareness of sustainability through youth camps, where the youth in Japan build friendships with those from the world, and collaboration with the Education for Sustainable Development (ESD) programme, etc., aiming to share our initiatives with the entire world.

(3)-2. Raising public awareness of the importance of sustainability (information sharing)

Since the word “sustainability” and its meaning have not fully spread in Japan, we will raise public awareness of its importance by continuously sharing information about sustainability-related initiatives in the Tokyo 2020 Games with a wide range of the public.

(3) -2-1. Communicating information about the Games

Taking advantage of the Olympics/Paralympics’ power of influence, the Tokyo 2020 Games will provide the ideal opportunity to share with the world Japanese values that lead to sustainability, including *mottainai* (sense of avoiding waste), and locally rooted Japanese views on nature, including *edomae* (the traditional Tokyo style), *satoyama* and *satoumi* (forests and oceans used and cherished by local communities), as well as activities and technologies based on such values and views, useful for ensuring sustainability.

We will raise public awareness of the importance of sustainability by actively communicating information about sustainability-related initiatives in the Games, including advanced environmental technologies used for the Games, about activities and lessons in consideration of sustainability, and about sustainable lifestyles, aiming to contribute to global initiatives for sustainability according to the Olympic movement.

Also, we aim to introduce systems for sharing data on the environment, including the weather and air quality, which will serve as important indicators for healthcare measures in event venues, such as anti-heat-illness measures.

Meanwhile, we will explore how to communicate information plainly and clearly with the general public, for example, the ways of communicating information from Olympians and Paralympians, or relating information to stories about events and venues.

These initiatives of communicating information about the Games will be a useful legacy for future host cities’ preparation.

We will communicate information about our sustainability-related initiatives through events, continuous press releases related to them, and the like, to share the significance and positive impact of sustainability, and information about related technologies in Japan, and raise public awareness of sustainability.

More specifically, we will display sustainability-related exhibits, including those about environmental technologies, at the venues and other facilities, offer backyard tours, and organise various business- and environment-related events to be held in parallel with the Games, to share information about sustainability-related technology with the world.

3. Tools for Realisation of the Plan and the impact study

To fulfill the specific plans related to the five themes described earlier and study the impacts of the Games, we will use the following tools.

(1) Achievement of Appropriate Games Operations through the introduction of ISO20121

For Tokyo 2020 to follow more sustainable steps, we will introduce the framework of ISO20121, international standards for management systems designed to support the sustainability of an event (ESMS: Event Sustainability Management Systems) to establish and operate the ESMS for Tokyo 2020.

We are now preparing to introduce the framework of ISO20121.

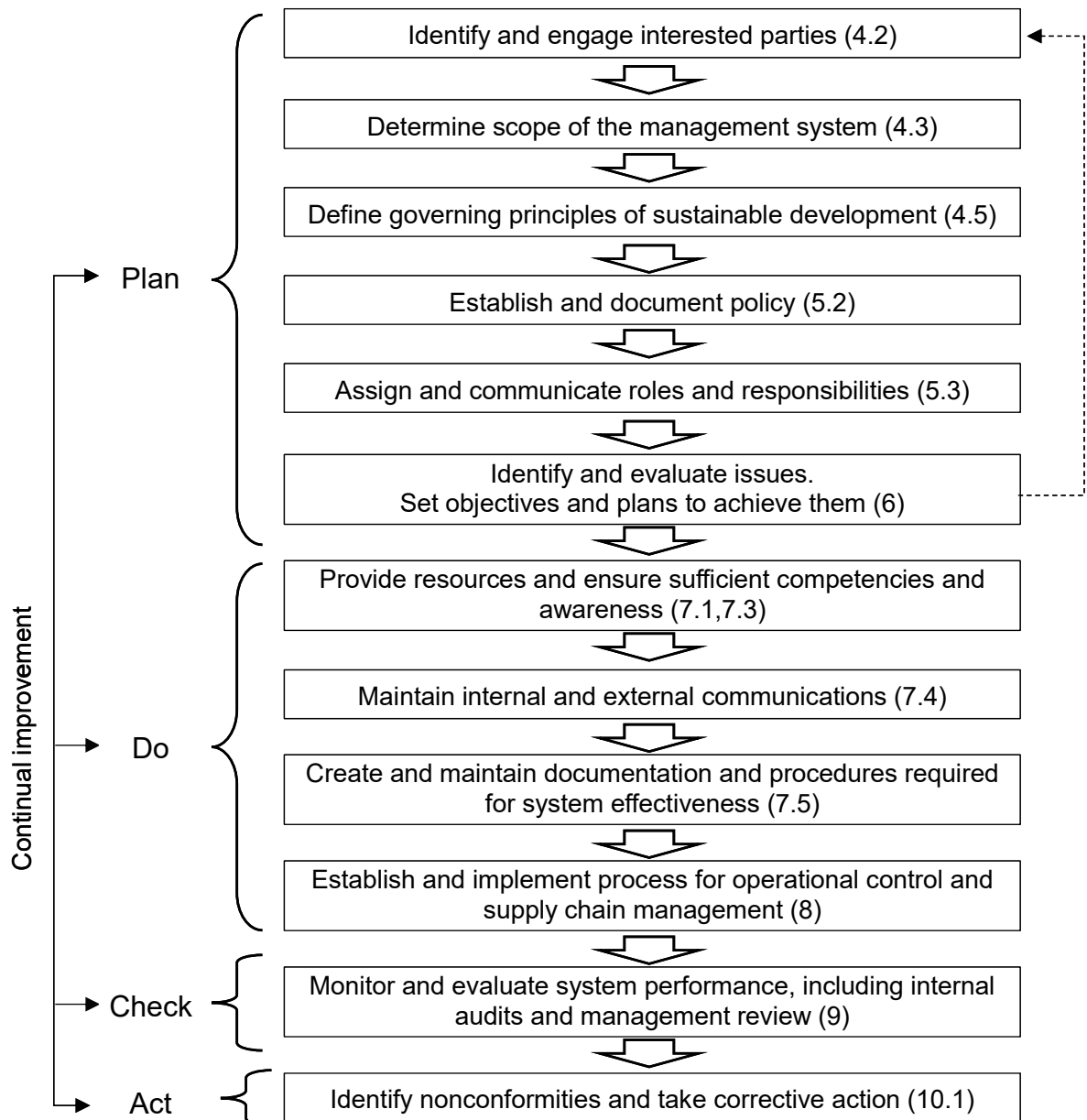


Figure Event sustainability management system model for this International Standard

Source : Event sustainability management systems – Requirements with guidance for use : First edition, published by the International Organization for Standardization in 2012

(2) Devising and using the Sustainable Sourcing Code

Tokyo 2020 will procure many products and services to prepare for and operate the Games. Since procurement has impact on the entire supply chain, not only direct suppliers, we are devising, present and use a Sustainable Sourcing Code for all products and services procured by Tokyo 2020, as well as licensed products* (“products, services, etc.” hereinafter) to realise sustainable Games. After its completion, the Code will be open to the public and applied.

After presenting the Fundamental Principles in January 2016, we developed the Sustainable Sourcing Code for Timber in June.

Extract from the Fundamental Principles for the Sustainable Sourcing Code (January 2016)

3. Principle of Tokyo 2020 Sustainable Sourcing

To achieve sustainable Games, Tokyo 2020 takes measures to minimise the environmental impact of its procurement of raw materials, and all subsequent production, distribution, usage and disposal processes. In addition, Tokyo 2020 takes into consideration human rights, labour and other social issues during its procurement of products, services, etc.

Based on the above, Tokyo 2020 implements sustainable sourcing practices according to the four principles indicated below.

<Four Principles>

Tokyo 2020 places the utmost importance on:

- how products, services, etc., are supplied
- the origins of products, services, etc., and the resources they are made of
- compliance to the Sourcing Code throughout the supply chains
- the effective use of resources

Tokyo 2020 requests the Tokyo Metropolitan Government and national government-related entities, to respect the Sourcing Code with regard to products, services, etc. that they procure for the Tokyo 2020 Games, aiming to spread similar initiatives.

Meanwhile, the Tokyo Metropolitan Government and national government-related entities must observe related laws and regulations including WTO Agreement on Government Procurement.

* Licensed products: Products produced by licensees according to their agreements with Tokyo 2020

(3) Olympic Games Impact Study (OGI Study)

Examining, analysing, and recording Olympics/Paralympics-caused changes is important for Tokyo 2020 in order to monitor and follow up on the progress after the plan is completed and to review the entire process of holding the Games, as well as being important for future host cities.

Tokyo 2020 will therefore operate a programme to collect and analyse data, mainly including ones disclosed by public and other organisations on the entire process of 12 years, from the phase of inviting the Games (2011) to three years after the Games (2023), to study the Tokyo 2020 Games' impact on the environmental, socio-cultural, and economic themes.

An independent and neutral third-party research partner (university) conducts this survey taking into the fullest consideration ensuring the transparency and fairness of the study, by making regular public reports. The reports will be made and officially published on a regular basis.

- Tokyo 2020 will conduct an environmental monitoring study following the environmental indicators of Olympic Games impact in collaboration with various monitoring studies of the Tokyo Metropolitan Government and the national government. Also, Tokyo 2020 will cooperate with the IOC to conform the Olympic Games Impact programme with individual measures and factors for the Tokyo 2020 Games to the fullest.

(4) Conducting environmental assessments

The Tokyo Metropolitan Government has conducted environmental assessments at the IOC's request in order to minimise negative impacts caused by the Games and help enhance Tokyo's sustainability, taking the opportunity of the Games.

The Tokyo Metropolitan Government has so far conducted an early-phase environmental assessment in the bid phase, and is conducting an environmental assessment at the phase of the period of the Games based on the Tokyo 2020 Olympic and Paralympic Games Environmental Assessment Guidelines, following the Tokyo Metropolitan Environmental Impact Assessment Ordinance (devised by the Bureau of the Environment, Tokyo Metropolitan Government, in February 2014).

Tokyo 2020 conducts environmental assessments of all the event venues in Tokyo, outdoor events, the plans for the Games, etc., to predict and assess impact at the points before, during and after the Games. Also, follow-up surveys are conducted to review and examine the results of predictions and assessment, with additional measures to be adopted as needed.

Table: Items for the environmental assessments

Level 1	Level 2	Level 3
Environmental items	Major environmental aspects	Air, water quality, soil, etc.
	Ecosystem	Organisms' growth and habitats, water circulation, biological Eco-system, and greenery
	Living environment	Noises, vibration, and shade
	Amenity & culture	Landscapes, places for nature-friendly activities, comfort for pedestrian spaces, historical sites and cultural properties
	Resources and wastes	Water use, wastes, and Eco-materials
	Greenhouse gases	Greenhouse gases; energy
Social and economic items	Land use	Land use; regional division; migration
	Social activities	Sports and cultural activities
	Involvement & cooperation	Volunteering; Communities; Environmental awareness
	Safety, sanitation and security	Safety; sanitation; firefighting; disaster risk reduction
	Transportation	Traffic jams; accessibility to public transportation; traffic safety
	Economy	Economic effects; employment; business profitability

[Sources: Tokyo 2020 Olympic and Paralympic Games Guidelines for Environmental Assessment (for the Games Operations Phase and follow-up reviews), Bureau of the Environment, Tokyo Metropolitan Government, February 2014