Tokyo 2020
Tokyo 2020 Olympic and Paralympic Games Sustainability Plan
Version 2

June 2018

The Tokyo Organising Committee of the Olympic and Paralympic Games

Preface

Sustainability Plan

The Tokyo 2020 Olympic and Paralympic Games Sustainability Plan (hereinafter referred to as the "Plan") has been developed by the Tokyo Organising Committee of the Olympic and Paralympic Games (hereinafter referred to as the "Tokyo 2020"):

- (while) Respecting the approach to focus on sustainability and legacy in all aspects of the Olympic Games and within the Olympic Movement's daily operations outlined in Olympic Agenda 2020[1],
- To maximise consideration for sustainability of the Tokyo 2020 Olympic and Paralympic Games (hereinafter referred to as the "Tokyo 2020 Games" or simply the "Games", if appropriate), and ensure that the delivery of the Games contributes to sustainable development.

The Plan aims to:

- Specify the Tokyo 2020's recognition of the relationship between the delivery of the Tokyo 2020 Games and sustainable development (sustainability) and how Tokyo 2020 intends to contribute to the United Nations Sustainable Development Goals (SDGs)[2] through the delivery of the Games,
- Set out policies, goals and measures for Tokyo 2020, delivery partners* and other parties involved in the Games to take for sustainable Games planning and operations,
- Provide information related to sustainable planning and operations of the Tokyo 2020 Games for various people who are interested in the Tokyo 2020 Games to communicate with those involved in the Games,
- Become a learning legacy that will be used for sustainable Olympic and Paralympic Games planning and operations by those involved in the future Olympic and Paralympic Games, and
- Be referred to and used by people in Japan and the world to pursue approaches to sustainable development.

* The Government of Japan, prefectural/municipal governments and private organisations that provide financial and other support towards the planning and delivery of the Games

Development process of the Plan

The Plan has been developed referring to discussions within the Urban Planning and Sustainability Commission (hereinafter referred to as the "Commission"), which was established in Tokyo2020, consisting of academics and experts from non-governmental organisations (NGOs), public comments and opinions at meetings hosted by NGOs and non-profit organisations (NPOs). Various efforts and discussions related to the delivery of the Tokyo 2020 Games have been developing, and Tokyo 2020 has updated the Plan based on latest discussions almost once a year.

1 https://www.olympic.org/olympic-agenda-2020

2 https://www.un.org/sustainabledevelopment/sustainable-development-goals/

The following relevant documents have been prepared and published:

- High level Sustainability Plan[3] (January 2016)
  - Outlining the basic approach to ensuring sustainability in operations of the Tokyo 2020 Games
  - Indicating the overall direction of any points that may arise with regard to the examination of specific details to be included in the Plan
- Sustainability Plan Version 1[4] (January 2017)
  - Specifying the importance of the concept of sustainability, the relationship with the Tokyo 2020 Games Vision, the sustainability approach for the Tokyo 2020 Games and the outline of the Plan
  - Outlining five main themes to be included in sustainability programme for the Tokyo 2020 Games
  - Discussing the background to the measures, the principles, strategies and goals, and the specific direction of the measures regarding each of the main themes

Understanding and challenges regarding sustainability in society continue to change. We have been considering setting the goals and shaping the measures to achieve the goals regarding each of the main themes discussed in Version 1 while addressing the changes.

The Plan Version 2

The Plan Version 2 is the latest and final strategic Plan for the Tokyo 2020 Games.
Supplementing to Version 1, Version 2:

- Specifies contributions to SDGs as the significance of delivering sustainable Games,
- Clarifies execution and monitoring of the Plan, and
- Includes specific goals,targets and measures towards them regarding each of the main themes.

The Plan Version 2 consists of the following parts:

- The part specifying the Tokyo 2020 Games' recognition of sustainable development (sustainability) and how the Tokyo 2020 Games intend to contribute (Introduction and Chapter 1)
- The part setting out Goals, Targets and Indicators for concrete actions regarding the main themes (Chapter 2)
- The part outlining each party's actions and their progress towards of the Goals and the Targets (Chapter 3)
- The part describing management systems for sustainable Games operations by Tokyo 2020 and the related parties to achieve the above Goals and Targets (including management systems in accordance with ISO 20121) (Chapter 4)

Sustainability Report

[3] https://tokyo2020.org/en/games/sustainability/data/sus-plan-EN.pdf
[4] https://tokyo2020.org/en/games/sustainability/data/20170130-sus-plan-1-EN.pdf

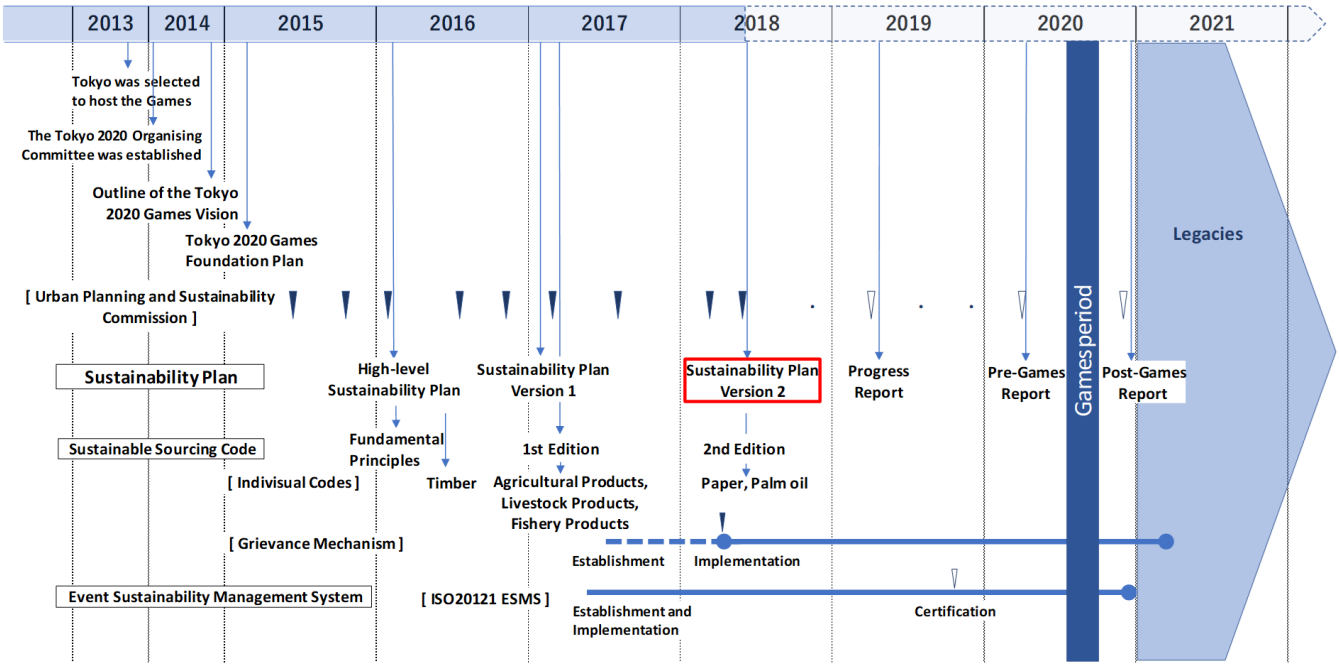
Tokyo 2020 will prepare and publish three Sustainability Reports on sustainable planning and operations of the Tokyo 2020 Games. We will develop a progress report in spring of 2019, the year before the delivery of the Games, and pre-Games and post-Games reports in spring 2020 and winter of 2020/21 before and after the Games respectively.

Although the Plan Version 2 has been completed, approaches related to the delivery of the Games and the Plan will be still further discussed. Additions and changes made in the Plan after the Plan Version 2 is completed will be incorporated in the reports, and the two reports planned to be developed prior to the Games will provide an update on sustainable Games operations that will be actually performed.

The reports will appropriately present discussion and implementation results at the stage, and also experiences, insights and challenges gained and faced during the process to serve as a learning legacy after the Tokyo 2020 Games.

The reports will be prepared by obtaining opinions from the Commission consisting of experts to effectively report impacts of the delivery of the Tokyo 2020 Games on sustainable development, referring to requirements for regular activity reports by the United Nations Global Compact, to which Tokyo 2020 intends to sign in summer 2018, and disclosures in universal and topic-specific standards in the GRI Standards.

Timeline for "Developing the Tokyo 2020 Olympic and Paralympic Games Sustainability Plan"



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Introduction

The Tokyo 2020 Games will be the first Olympic and Paralympic Games hosted by Tokyo in 56 years since 1964. Because Tokyo and Japan have transformed out of all recognition since the time of the 1964 Games and there are also new sustainability challenges for the 21st century, the significance of the delivery of the Games has also changed.

Whereas the delivery of the Tokyo 1964 Games was aimed for development of Tokyo and Japan, the Tokyo 2020 Games would provide a wonderful momentum for a mature Tokyo to transform into an even more functional and attractive major city, and delivery of the Tokyo 2020 Games would afford an opportunity to demonstrate that the Host City, Tokyo, is working to become a highly matured city with vigour and magnanimity suitable for the 21st century. Furthermore, the Tokyo 2020 Games will embody Japan's attitudes about a 21st-century sustainable society which humankind pursues, and actions Japan will take towards achievement of the Sustainable Development Goals (SDGs), and express the intention and ability to lead global efforts towards a 21st-century sustainable society as an advanced country that has solved various challenges ahead of other countries.

From 1964 to 2020

By 1959, when Tokyo was awarded the 1964 Olympic Games, first to be held in Asia, the population of Tokyo had risen dramatically to 9,350,000 amid rapid economic growth. The fast economic growth and increasing population caused urban problems such as traffic congestion due to rapidly increasing vehicles and overcrowding on public transport at rush hour. The demand for secure supply of good-quality drinking water and waste disposal was also rising.

As well as preparations of venues for the 1964 Games and other facilities directly necessary for the delivery of the Games, related programmes to ensure smooth operations of the Games and projects to develop social infrastructure necessary for the growing international city and country were undertaken. For example, construction of streets, distribution of water supply and sanitation, and scheduled waste collection using plastic rubbish bins were facilitated. Construction of the Metropolitan Expressway and the Tokaido Shinkansen Line was accelerated, and they became important legacies that served as foundations for Japan's further economic growth. Initiatives based on the participation of the general public, such as the National Olympic Movement and the Metropolitan Beautification Campaign, were also implemented.

In addition, the delivery of the Tokyo 1964 Paralympic Games provided impetus for establishment of an umbrella organisation to manage dissemination and promotion of sports for people with disability in Japan, which later formed JPSA/JPC. The National Sports Festivals for people with Disabilities have been held over 50 years on a nationwide scale.

Thus, various projects initiated as part of momentum from or concurrently with the Tokyo 1964 Games have further expanded and developed in many ways as legacies, and become foundations for growth of Tokyo and Japan to achieve the prosperity and longevity nowadays.

To further raise Tokyo to a city suitable for the 21st century, the Tokyo Metropolitan Government has recently been implementing approaches to realise mid- to long-term strategies designed to sustainably develop the metropolis into a highly matured city in a harmony with the global environment with the aim of

achieving a zero-emission Tokyo. The approaches include further improving its highly-developed road network, creating a low carbon society with a highly efficient, independent and distributed energy system, and passing water and greenery on to future generations by developing Sea Forest, a forest being created on bayside reclaimed land in cooperation with many people, and “Green Road Network” with a million trees. The Tokyo Metropolitan Government has also been making efforts to adopt low-floor step-free buses and achieve accessibility of roads connecting stations, public facilities and hospitals, in view of the Games time and beyond to promote the city with universal design.

In daily lives on the streets and in companies, various efforts have been initiated to realise social inclusion of all people.

However, from the perspective of global society, while the 20th-century growth associated with mass extraction and use of resources and mass disposal of products brought material wealth to countries and people that could enjoy the benefits, it caused global warming, destruction of the ecosystem, loss of biodiversity, and other global environmental sustainability challenges that threaten our biosphere and lives. Social inequalities are causing intolerance and increase of frictions among people from diverse backgrounds. There are still many challenges ahead for ensuring free social involvement of all people. These challenges will confront cities, regions and countries around the world.

Moreover, in sharp contrast with the ideal of the Olympic and Paralympic Games as a “festival of peace,” the world has not yet overcome the situation called “refugee crisis,” where many armed conflicts have occurred, and have displace many people around the world. In addition, discrimination on the grounds of race, colour, sex, sexual orientation, gender identity, language, religion, politics, social status, age, or impairment/disability has destabilized society, has increased social inequalities, and has caused conflicts. Some countries do not pay due respect to human rights, democracy, and the rule of law as the principles with universal value that humanity has established so far.

The human population on our planet is estimated to reach nearly 10 billion in 2050. As longevity, urbanisation and material wealth progress, we have to realise a society where the social systems and humans maintain a more harmonised relationship with the global environment, and diverse human beings live together with proper respect for one another. There is a need for changes in the ways of social growth in the past into a new way of sustainable social growth and development.

Based on the clear recognition, the international society has begun taking action. After WWII, deep sorrow over the Holocaust led the international community to adopt the Universal Declaration of Human Rights and conclude various other international human rights treaties. Efforts to build a framework of international humanitarian laws in order to mitigate the cruelty of wars and conflicts have also been underway with considerable success. In the respective key areas, the Paris Climate Agreement, the Aichi Biodiversity Targets, and the United Nations Guiding Principles on Business and Human Rights were shared globally.

Now the Sustainable Development Goals (SDGs), committed to “leave no one behind,” have been set as global common goals.

Having overcome pollution problems occurred during the period of Japan’s rapid economic growth and built a mature society, Tokyo and Japan have experiences, insights, skills and public policies for building a symbiotic relationship between advanced lives of citizens and economic activities and nature. Tokyo and

Japan must play a role as an advanced city/country that has solved various challenges ahead of other cities/countries.

Tokyo 2020 pointing to a sustainable future

In May 2016, the government of Japan established the Sustainable Development Goals (SDGs) Promotion Headquarters with the Prime Minister as Chief of Headquarters and all cabinet ministers as members of Headquarters. In December 2017, the Headquarters formulated the SDGs Action Plan 2018, which provides for consideration of sustainability towards the Tokyo 2020 Games.

In 2020, Japan and Tokyo, as an “advanced country/city in solving sustainability issues”, will demonstrate to the world their approaches to solve challenges of the SDGs and enhance further development. Through the Tokyo 2020 Games, we will showcase the model to address main themes: Climate Change; Resource Management; Natural Environment and Biodiversity; Consideration of Human Rights, Labour and Fair Business Practices; Involvement, Cooperation and Communications (Engagement), and solve problems in modern societies.

Although what can be achieved within the range of the delivery of the Tokyo 2020 Games, and what can be realised by 2020 are limited, it is necessary to regard 2020 as the opportunity to make a firm start to achieve long-term goals beyond, and accelerate problem-solving processes. This will be an important legacy for the future of Tokyo, Japan and the world.

1. Basic Approach

1.1 Basic Principles

The Tokyo 2020 Games Vision

Sport has the power to change the world and our future.

The Tokyo 2020 Games, as the most innovative in history, will bring positive reform to the world by building on three core concepts: "Achieving Personal Best," "Unity in Diversity," and "Connecting to Tomorrow."

Tokyo 2020 Games:
The Olympic and Paralympic Games, showcasing a model of a sustainable society which humankind pursues,
and working integrally on sustainability challenges

The Sustainability Concept of the Tokyo 2020 Games

Be better, together
For the planet and the people

The concept comprehending the five main sustainability themes of the Tokyo 2020 Games

The Olympic and Paralympic Games are one of the world's largest sports events*. Sport has the power to change the world, and the delivery of the Games may have global impacts.

Various parties in the world are working in cooperation to implement radical reforms in social economic activities towards a common purpose, namely sustainable development. The Olympic and Paralympic Games share the challenge with the world. The IOC outlined its approach as "Include sustainability in all aspects of the Olympic Games and within the Olympic Movement's daily operations," in Olympic Agenda 2020 in December 2014, and then developed the IOC Sustainability Strategy in December 2016.

Japan and Tokyo as the host country and host city of the Tokyo 2020 Games will play the role responsibly. The Tokyo 2020 Games will demonstrate to the world that Japan and Tokyo work integrally on environmental, social and economic aspects of a 21st-century sustainable development which humankind pursues, and contribute to achievement of the United Nations 2030 Agenda. We aim to ensure that the experiences of the Tokyo 2020 Games will be handed down as legacies for the benefit of future Olympic and Paralympic Games, as notable examples for the benefit of the Paris Games and the Los Angeles Games, and for other mega-sporting events, as well as further broadly for the diversified development in Japan and the world.

* In the Tokyo 2020 Games, the Olympic Games in 33 sports are scheduled to take place from 24 July to 9 August, 2020, and the Paralympic Games in 22 sports from 25 August to September 9, 2020. The Games will be held in 43 competition venues and be broadcast to the world. The Tokyo 2020 Games will involve not only 11,090 Olympians and 4,400 Paralympians, and spectators from countries and regions all over the world, but also many parties involved in the Tokyo 2020 Games such as parties engaged in Games operations, International Federations (IFs) that support sports, and media including broadcasters and the press.

Development of the Olympic Movement towards Sustainability

	Related key Olympic Games	Events related to the Olympic Movement	World's trends regarding sustainability
1992	Albertville (Winter)	Albertville 1992: Criticism of destruction of the natural environment	**Rio Earth Summit** **United Nations Framework Convention on Climate Change (UNFCCC) initiated.**
1994	Lillehammer (Winter)	Lillehammer 1994: First 'greening' initiative for the Olympic Games **The Centennial Olympic Congress: The environment becomes the third pillar of Olympism (alongside sport and culture).**	
1996		**Modification of the Olympic Charter: Incorporates "environment" and "sustainability" in the basic principles.**	
1999		**Olympic Movement's Agenda 21:** **Sets out the basic concepts and practical activities of environmental conservation in the sports world.**	
2000	Sydney (Summer)	Sydney 2000: "Green Olympic Games" is a key theme.	
2005		London is Selected to host the 2012 Games.	**Kyoto Protocol comes into force.**
2010	Vancouver (Winter)	Vancouver 2010: Advanced approach to sustainability for the Games	**Aichi Biodiversity Targets of the United Nations Convention on Biological Diversity**
2011			**United Nations Guiding Principles on Business and Human Rights**
2012	**London (Summer)**	**London 2012: The first sustainable Olympic and Paralympic Games**	**United Nations Conference on Sustainable Development (Rio+20)** **ISO 20121 launched.**
2013		Tokyo is Selected to host the 2020 Games.	
2014		**Olympic Agenda 2020:** **Sustainability is included in all aspects of the Olympic Games and within the Olympic Movement's daily operations.**	
2015			**United Nations Sustainable Development Goals (SDGs)** **Paris Agreement**
2016	**Rio de Janeiro (Summer)**	**IOC Sustainability Strategy:** **Sustainability is included as a working principle of the Olympic Movement.**	**G7 Toyama Framework on Material Cycles**
2017		Paris and Los Angeles are selected to host the 2024 Games and the 2028 Games respectively.	
2020	**Tokyo (Summer)**	**Tokyo 2020: Aims to showcase a model of a sustainable society which humankind pursues, and work integrally on sustainability challenges**	**Target year set in the Aichi Biodiversity Targets** **Paris Agreement begins.**
2024	**Paris (Summer)**		
2028	**Los Angeles (Summer)**		
2030			**Target year set in the SDGs**

Column: Sustainable development and the Olympic Movement

Sport and the Olympic Movement are closely aligned with sustainable development. In the United Nations “Transforming our world: the 2030 Agenda for Sustainable Development”[1] and the IOC Sustainable Strategy[2], there are such descriptions below.

The 2030 Agenda

37. Sport is also an important enabler of sustainable development. We recognize the growing contribution of sport to the realisation of development and peace in its promotion of tolerance and respect and the contributions it makes to the empowerment of women and of young people, individuals and communities as well as to health, education and social inclusion objectives.

The IOC Sustainability Strategy (excerpt)

The IOC Sustainability Strategy supports our commitment to contribute to the United Nations 2030 Agenda for Sustainable Development

The world faces significant challenges across a widespectrum of social, environmental and economic matters. Major issues such as social injustice, economic inequality and climate change are increasingly occupying people around the world. The sporting community is not immune to the impacts of these issues. We believe the Olympic Movement has both an opportunity and a duty to contribute actively to global sustainability in line with our vision: “Building a better world through sport”.

That is why it was pivotal for us when in September 2015 the United Nations (UN) General Assembly confirmed the important role that sport plays in supporting the UN 2030 Agenda for Sustainable Development and the 17 Sustainable Development Goals (SDGs).

The 17 SDGs for 2030 provide a common framework for organisations to explain how they plan to contribute to sustainable development and to tackle the key global sustainability challenges. These SDGs include ending poverty, combatting climate change, fighting injustice and inequality, and many other aspirations for a better, more sustainable world.

The core missions of the Olympic Movement, including social development through sport, are already closely aligned with a number of SDGs. By further embedding sustainability in our activities, we believe we could reinforce the IOC’s contribution to these SDGs while contributing to several other SDGs.

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1 https://sustainabledevelopment.un.org/post2015/transformingourworld

2 https://stillmed.olympic.org/media/Document%20Library/OlympicOrg/Factsheets-Reference-Documents/Sustainability/2017-03-21-IOC-Sustainability-Strategy-English-01.pdf

1.2 Main Themes of Sustainability

After discussions with experts held taking into account rising global concerns including the SDGs, the Tokyo 2020 Games set the following five main themes: “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).”

We set out goals*1, targets*2 and measures for concrete actions regarding each of the main themes, and discuss in detail in Chapter 2.

*1:Goals and overall direction over each respective theme
*2:Individual targets within the goals, including indicators of progress towards the targets (numerical targets and target numbers if possible)

To select the main themes, due consideration has been given to the following factors.

First, it is essential to make efforts integrally in three interconnected aspects: environment, society and economy, to secure and promote sustainable development. Regarding the “environmental” aspect, the most basis of the three aspects, we set three themes: “Climate Change,” “Resource Management,” and “Natural Environment and Biodiversity,” taking into account impacts of the Tokyo 2020 Games on the environment and social demands. Symbolized by the Paris Agreement, climate change is a globally agreed theme as a prominent urgent common challenge to humans and life on Earth, and we will promote measures to achieve decarbonisation in the Tokyo 2020 Games based on the global situation. As for resource management, as a large volume of goods and materials will be procured and used within a short span of two-month Games period, we will make efforts based on the Toyama Framework on Material Cycles[5] endorsed by the G7 Ise-Shima Summit to focus on resource efficiency and promoting the 3Rs (reduce, reuse, and recycle) such as reducing the consumption of natural resources. Furthermore, since it is necessary to secure natural environment, ecosystems and living environment as a basis for humans and life on Earth and enhance their development, we will take necessary approaches with the theme of natural environment and biodiversity. Particularly through implementing efforts to address these themes, Tokyo and Japan will make major contributions based on experiences, insights, skills and public policies as an advanced city/country that has solved various challenges.

Regarding the “social” and “economic” aspects, we set the theme of “Consideration of Human Rights, Labour and Fair Business Practices”. The awareness of the importance of the theme has rapidly increased in modern societies. The delivery of the Olympic and Paralympic Games is a great opportunity to progress respect for human rights, and diversity and inclusion in particular. We especially hope that the Tokyo 2020 Games will have positive impacts on the supply chains involved in procurement of a large volume of products and services, so that they will pay due respect to human rights in the process of procurement. Moreover, with the Tokyo 2020 Games as an impetus, we would like to promote diversity and inclusion inside and outside Japan, make real progress in human rights, and establish a meaningful step.

As the fifth main theme, we set “Involvement, Cooperation and Communications (Engagement) ”. To effectively and properly address the four themes mentioned above, and deliver the Olympic and Paralympic Games successfully, partnership among various parties is required. This is commonly necessary in all aspects

[5] http://www.mofa.go.jp/files/000159928.pdf

of other sustainability efforts, and the efforts will be adopted into all sustainability actions of the Tokyo 2020 Games.

In preparations for the Tokyo 2020 Games, a large volume of products and services, licensed products, etc. (hereinafter referred to as “products and services”) will be procured. Since procurement activities have impacts not only on direct suppliers and licensees, but also on their supply chains, procurement and supply chain management is an important matter in the sustainability efforts of the Tokyo 2020 Games. Efforts and targets for each main theme of the Tokyo 2020 Games sustainability include those related to management of supply chains.

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

The respective themes and efforts above are interconnected, and not independent. Sustainability efforts of the Tokyo 2020 Games are the integrated whole of them. Although what can be achieved within a timeframe for preparations for and delivery of the Tokyo 2020 Games is limited, achievements of efforts made to solve problems towards a sustainable society shown by Japan and Tokyo through the delivery of the Games, we will hand down insights and know-how as legacies after the Games. We aim to ensure that the people around the world will promote diversified development of the Tokyo 2020 Games Vision and the fundamental principle as legacies from the Games.

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It is natural that the main themes of sustainability of the Tokyo 2020 Games and approaches taken for that purpose are strongly related to “Transforming our world: the 2030 Agenda for Sustainable Development” and the Sustainable Development Goals (SDGs) and targets defined in the Agenda, which the international community adopted in the historically significant United Nations General Assembly in September 2015.

The 2030 Agenda defines main aspects and important elements (areas) for sustainable development, and the SDGs and related targets.

At the core of the Agenda are five important elements (areas): economic growth, social inclusion, environmental conservation, partnership, and peace. The SDGs are committed to stimulate the action of all people in these areas, in order to end poverty and hunger everywhere; to combat inequalities within and among countries; to build peaceful, just and inclusive societies; to protect human rights and promote gender equality and the empowerment of women and girls; to ensure the lasting protection of the planet and its natural resources while addressing climate change; to create conditions for sustainable, inclusive and sustained economic growth, shared prosperity and decent work for all, with no one left behind.

Five Ps as the foundations for the SDGs

The five important elements (areas) can be represented as the “Five Ps”: People, Prosperity, Planet, Peace, and Partnership.

People: SDGs 1–6

Prosperity: SDGs 7–11

Planet: SDGs 12–15

Peace: SDG 16

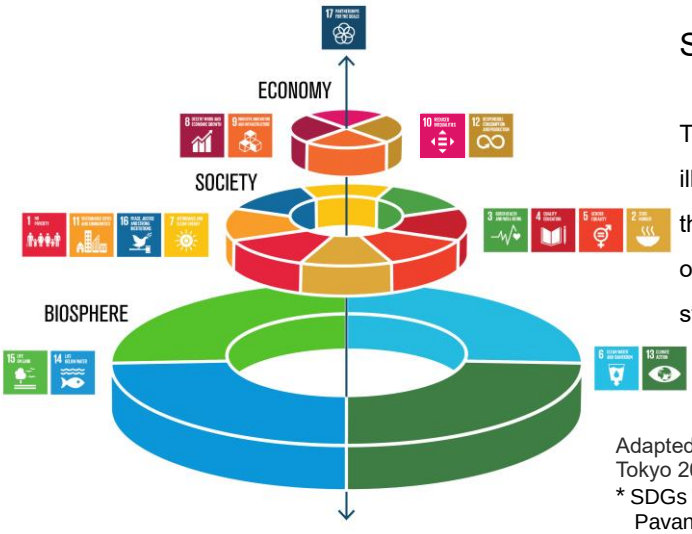
Partnership: SDG 17

United Nations Department of Public Information

The 17 SDGs and targets, which are of global nature, are applicable to all countries, taking into account different national realities, capabilities and levels of development and respecting national policies and priorities. Instead of being independent of one another, all the goals are interlinked, and require integrated approaches.

17 Sustainable Development Goals (SDGs)

United Nations Department of Public Information



Structural relationships among the 17 SDGs

The 17 SDGs are integrated and indivisible. This graphics illustrates the integrated, indivisible relationships among the Goals by sorting out the Goals into the three elements of biosphere, society and economy and showing the structural relationships among the three elements.

Adapted from the original graphics by Jerker Lokrantz / Azote*, by Tokyo 2020 with permission.
* SDGs "wedding cake" illustration presented by Johan Rockström and Pavan Sukhdev (http://www.stockholmresilience.org/research/research-news/2016-06-14-how-food-connects-all-the-sdgs.html)

Since we aim to implement integrated approaches to environmental, social and economic aspects to achieve sustainability in the Tokyo 2020 Games, our approaches are naturally related to all aspects for sustainable development and all the SDGs and targets.

Below are examples of uniquely direct and significant relations between the main themes of and approaches to sustainability of the Tokyo 2020 Games and the SDGs.

・Climate Change: SDGs 7, 8, 11, 12, 13, 15, 17.

For example, a strategic venue plan has been adopted for the Tokyo 2020 Games to make the best use of existing competition venues and public transport networks. This plan can have major positive impacts on efforts, called for in the SDGs 11 to 13, to mitigate climate change and its impacts, ensure sustainable patterns of the consumption and production of energies and resources, and make cities and human settlements, including transport of humans and goods in particular, resilient and sustainable.

In addition, the maximum use of renewable energy for Games operation will contribute to meeting Target 13.3: “Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning,” and will directly help reach Target 7.2: “Increase substantially the share of renewable energy in the global energy mix.”

・Resource Management: SDGs 8, 9, 11, 12, 14, 15, 17.

The Tokyo 2020 Games aim to waste no resources. This means that we prevent ourselves from wasting resources in all aspects of Games preparation and operation, use resources in a circulative way from the perspective of the resource life cycle ranging from procurement to disposal, and facilitate collaboration with diverse people in maximising resource efficiency and recycling resources. This approach perfectly matches the targets set in SDG 12 to ensure sustainable consumption and production patterns, and also helps conserve the oceans, seas and marine resources, and address challenges concerning terrestrial ecosystems, forests, lands, and biodiversity, as defined in SDGs 14 and 15, from the perspective of reducing the influence of resource exploitation and the environmental impacts of wastes.

・Natural Environment and Biodiversity: SDGs 2, 3, 6, 9, 11, 12, 14, 15, 17.

In the Tokyo 2020 Games, we aim to pay due consideration to biodiversity, create forests and grasslands and a waterfront environment, and shape attractive landscapes, in order to further restore and form an urban network of rich ecosystems. We also aim to increase the comfort and resilience of the urban environment by enhancing the function of hydrological cycles. These approaches are related to a wide range of important elements of the sustainable urban environment mentioned in SDGs 6, 9, 11, 15, etc., including access to water and hygiene, safe and resilient urban infrastructure and settlements, and conservation and restoration of ecosystems. Our approaches aimed at contributing to creation of Tokyo’s urban environment suitable for a matured city through the Tokyo 2020 Games will be able to present a model for a sustainable urban system.

・Consideration of Human Rights, Labour, Fair Business Practices: SDGs 1, 4, 5, 8, 9,10, 11, 12, 13, 16, 17.

In the Tokyo 2020 Games, we aim to firmly incorporate diversity and inclusion (D&I) into all areas of the Games preparation and operation, with a view to respecting the human rights of all those involved in the Games. Tokyo 2020 will operate the Games in compliance with the United Nations Guiding Principles on

Business and Human Rights. Tokyo 2020 also ensures fair business practices with no involvement in corruption, anticompetitive transactions, etc., and formulates and follows the Sustainable Sourcing Code. The approach with due respect paid to human rights, labour, etc. and the D&I approach, which are aimed at achieving inclusive games of “celebrating diversity” will be able to foster awareness among the general public in many areas, including education mentioned in SDG 4 and gender mentioned in SDG 5, and encourage social reforms for creating an inclusive society where diversity is appropriately recognised and everyone can play an important role by demonstrating his/her own individuality and ability.

・Involvement, Cooperation and Communications (Engagement): SDGs 16, 17.

Various approaches designed to achieve inclusive games not only through the efforts of those involved in the Games but also with the involvement and cooperation of the entire society, that is, a wide range of citizens including volunteers and spectators, exactly correspond with approaches toward peace, inclusion, justice and partnership, presented in SDGs 16 and 17. The implementation of the Tokyo 2020 Medal Project: Towards an Innovative Future for All offers an excellent example of not only the involvement and cooperation of citizens from various fields and segments but also efforts to ensure sustainability in a comprehensive way, which will contribute to the resource circulation of materials and solutions to human right issues related to metal material supply chains. And by communicating these activities to wider public actively and strategically, the Tokyo 2020 Games can promote people’s initiatives towards creation of sustainable society.

1.3 Organisations Concerned

Preparations for and operations of the Tokyo 2020 Games will be conducted centring on Tokyo 2020 and in cooperation with the Tokyo Metropolitan Government, the Government of Japan, related local municipalities (regional/local governments where competition venues are located), sponsors, and other delivery partners*. 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. Among them, the Tokyo Metropolitan Government, the Government of Japan, and related local municipalities are key parties involved in the Games that will make efforts by closely cooperating and being united particularly with Tokyo 2020, and should work on implementation of the Plan according to their own role.

- Tokyo 2020: Tokyo 2020 implements projects related to preparations and operations of the Tokyo 2020 Games, and leads Games preparations and operations while playing a central role in the integrated “All Japan” team through collaboration with the JOC, the JPC, the Tokyo Metropolitan Government, related local municipalities, the Government of Japan, the business community, and other relevant organisations.

- Tokyo Metropolitan Government: The Tokyo Metropolitan Government provides the full backing for Games preparations made by Tokyo 2020, and fulfils its responsibility as a Host City:
  - Burden of expenses for transport and security measures around venues in Tokyo to minimise impacts on urban activities and lives of residents during the Games;
  - Construction of new permanent venues necessary for the Games;
  - otherwise designated roles
- Government of Japan: The Government of Japan implements related measures based on the basic policy (approved by the Cabinet in November 2015) to realise smooth preparations and operations of the Tokyo 2020 Games as the host country of the Games:
  - Cooperation and support necessary for promoting integrated “All Japan” efforts;
  - Construction based on the established policy on the Olympic Stadium;
  - Steady implementation of security measures and anti-doping measures for which the Government is responsible;
  - otherwise designated roles
- Related local municipalities: Related local municipalities cooperate in smooth preparations and operations towards the delivery of the Tokyo 2020 Games:
  - Transport and security measures for which regional/local governments are responsible as the host of the respective Games venues to minimise impacts on urban activities and lives of residents during the Games;
  - otherwise designated roles

* 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.

Not only Tokyo 2020, the Tokyo Metropolitan Government, the Government of Japan and related local municipalities, but also the IOC, the IPC, the JOC, the JPC, sponsors, relevant organisations (NGOs/NPOs,

industry groups, academic societies, etc.) and civil society are relevant parties that can make major contributions to maximise sustainability efforts of the Tokyo 2020 Games, and their cooperation is vital.

1.4 Scope of the Plan

The primary scope of the Plan covers the range where Tokyo 2020, the Tokyo Metropolitan Government, the Government of Japan and related local municipalities exercise direct control as a responsible party when they conduct preparations and operations related to the Tokyo 2020 Games. And further, the range where such responsible parties can assume influence on other parties may be considered whether to be covered by the Plan.

The Olympic and Paralympic Games are one of the world's largest sports events, and sustainability efforts in the delivery of the Games have significant impacts not only on the delivery of the Games, but also on a national and global scale. It is important to consider the Plan coverage to increase positive impacts and decrease negative impacts as much as possible.

The scope of application is determined based on the following aspects:

- Having a clear and close relationship with the Tokyo 2020 Games
- Possibility for contributing to the Tokyo 2020 Games (for example, improvement of Games experience, operational or reputation benefit)
- Importance for legacies
- Relevance and importance to stakeholders

The scope is divided into two ranges: the range the responsible parties assume direct control and the range they may assume influence on.

The range the responsible parties assume direct control includes the cases where Tokyo 2020, the Tokyo Metropolitan Government, the Government of Japan and related local municipalities assume direct control as a responsible party.

The range the responsible parties can assume influence on other parties involved in the Tokyo 2020 Games-related activities (for example, by encouraging supply chain stakeholders and spectators) includes various cases depending on whether related to the main themes of sustainability programmes as well as a mutual relationship between the side of making impact and the side of being influenced. The specific scope is determined taking the above aspects into consideration.

The scope includes, for example:

- Construction of venues for the Tokyo 2020 Games
- Projects implemented for the Tokyo 2020 Games

1.5 Governing Principles of Sustainable Development

On the occasion of our preparations for and operations of sustainable Games, Tokyo 2020 advocates the four principles below. The principles are the basic values in the sustainable development attitude, and are the governing principles of ISO 20121, the international standard for sustainability management systems for

event preparations and operations, adopted by Tokyo 2020 to ensure achievement of Games sustainability purposes.

- Stewardship
- Inclusivity
- Integrity
- Transparency

In the Tokyo 2020 Games, we will facilitate sustainability approaches on all aspects of Games preparations and operations, and ensure the implementation by adopting consistent, sincere and transparent process. We will also deliver the Games that embodies the values of diversity, participation and cooperation for all people.

As specified in the IOC Sustainability Strategy, sustainability is a working principle in the Olympic Movement, and the Paralympic Movement also shares the value. Inclusion of sustainability as a working principle is to adopt a sustainability standpoint when making decisions on practices of development of Games plans and Games preparations and operations, to increase positive impacts on social, economic and environmental aspects as much as possible, and decrease negative impacts as much as possible. Inclusivity, integrity and transparency are the essential principles included in sustainability in the process of pursuing sustainability. Properly addressing legal requirements, international standards and norms for sustainability, and continuously improvement approaches is a concrete factor of integrity.

For the Tokyo 2020 Games, to enhance the effectiveness of these sustainability considerations, the Tokyo 2020 will:

- Offer training and raise awareness among the Tokyo 2020 staff, volunteers and those involved in Games planning and operations so that they understand the significance of sustainability and the delivery of the Games, be aware of the relationship between the four governing principle and their own role and the responsibility, and take action
- Ensure close cooperation and communication among those involved in the Games, and make decisions taking comprehensive account of balance of key requirements such as sustainability, expenses and quality through integrated management through teamwork
- Raise awareness among the general public of the role of the delivery of the Games and the significance of legacies as the world is committed to sustainable development, and encourage participation in Games preparations and operations, and making sustainable societies
- Conduct preparations and operations, obtaining various opinions and ensuring transparency. Hold meetings basically open to obtain opinions from experts, and actively run public comment campaigns to ask a wide range of people for opinions

However, what can be achieved by the Games within a limited timeframe is limited as stated below. Accordingly, it is necessary to prioritise sustainability efforts for the Games, and focus on the most relevant and impactful issues and opportunities.

- The period of time given for constructing venues and preparing for the Games is approximately seven years after selection as the Host City until the delivery of the Games. This is a huge challenge, requiring the mobilisation of thousands of people and bringing together those with the necessary skills, experience and time. Also, the procurement of a large volume of products

and services is a major challenge for a new organisation, made all the more difficult by the diverse nature of the supply chain and the need to procure most products and services within a concentrated period in order to support the two-month operational period of the Games.

- It is necessary to consider balance with other important matters that need to be achieved, such as priorities of sports and security, contractual obligations to sponsors and rights holders while embracing sustainability.
- Delivering the Games within appropriate budget is an important and challenging part of sustainability Games efforts, and those involved in the Games and other various people involved must cooperate and propose innovative ideas within appropriate budget.

1.6 Management Systems and Tools

To steadily facilitate concrete approaches outlined in the Plan and ensure achievement of sustainability purposes and goals for the Tokyo 2020 Games, it is important to establish a management system for executing the Plan.

Therefore Tokyo 2020 will adopt management systems in accordance with ISO 20121, the international standard for Event Sustainability Management Systems (ESMS) established to support event sustainability. Our aim is to achieve third party certification in 2019. Tokyo2020 will also continue exchanging opinions with experts from different fields and other various people even after the Plan is completed, and properly monitor progress. Taking into account progress of each project and changes in circumstances after the Plan is completed, we will make revisions and continuous improvements to approaches based on the Plan.

Concerning procurement and supply chain management, Tokyo 2020 created the Tokyo 2020 Sustainable Sourcing Code (hereinafter referred to as the “Sourcing Code”) to require suppliers, licensees and their supply chains to give due consideration to sustainability for production and distribution of products and services Tokyo 2020 procures.

From the perspective of not only compliance with relevant laws and regulations, but also reduction of environmental impacts, respect for human rights, ensuring of appropriate working conditions, and promotion of fair business practices, the Sourcing Code established standards for sustainability, and procedures for ensuring compliance. Furthermore, the Code defines individual codes for timber, agricultural products, livestock products, fishery products, paper and palm oil to ensure consideration for sustainability at the production stage. Taking into account approaches outlined in the United Nations Guiding Principles on Business and Human Rights, Tokyo 2020 has established the Grievance Mechanism for accepting and properly dealing with reports of non-compliance with the Sourcing Code.

Pursuing initiatives concerning sustainability in its procurement, Tokyo 2020 has requested the Tokyo Metropolitan Government and national governmental bodies to respect the Sourcing Code concerning products and services procured by them for the Games, to encourage expansion of similar initiatives.

Details of management systems and tools towards realisation of the Plan are explained in Chapter 4. Chapter 4 includes:

- Sustainability management systems in line with ISO 20121
- Monitoring

- Other studies and progress management
- Devising the Sustainable Sourcing Code
- Conducting environmental assessment surveys

2. Individual Outlines of Main Themes (Targets and Measures to Reach the Targets)

2.1 Climate Change

The Paris Agreement set an international and long-term goal to hold the increase in the global average temperature to well below 2 degrees Celsius above pre-industrial levels and pursue the efforts to limit the temperature increase to 1.5 degrees Celsius above pre-industrial levels. Year 2020 is when international framework based on the Paris Agreement will start, meaning that 2020 will be a turning point in the global effort to mitigate climate change.

Meanwhile, Goal 13 of SDGs calls for “urgent action to combat climate change and its impacts” and Goal 7 to “ensure access to affordable, reliable, sustainable and modern energy for all.” Comprehensively working on realising decarbonisation and sharing the efforts with people around the world in the Tokyo 2020 Games will be an important boost to realise goals set forth by the Paris Agreement and SDGs.

Based on the above, the Tokyo 2020 Games set the goal below:

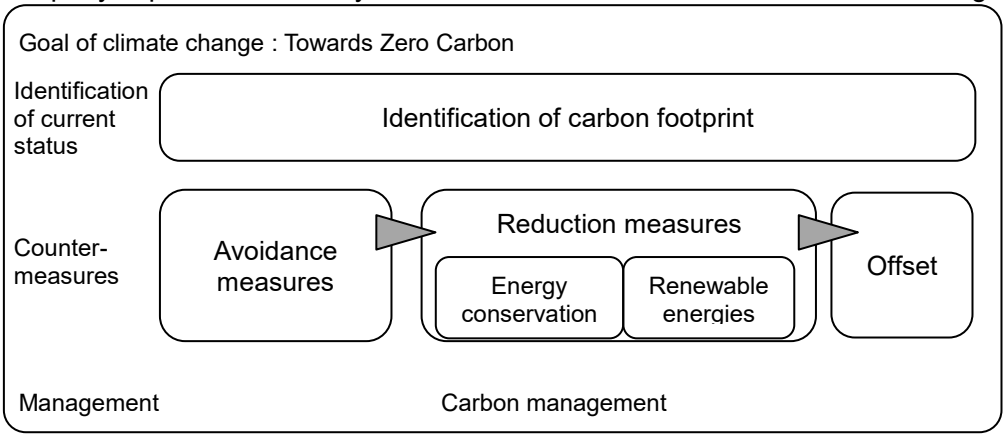
”Towards Zero Carbon”

“Zero” in the wording “Zero Carbon” doesn’t mean the targeted concrete numerical figure; rather, it shows an ideal direction of our efforts for decarbonisation. In 2020 when the Paris Agreement starts, this goal represents the intention of Tokyo 2020 and delivery partners to manage the Games focusing on maximum energy savings and use of renewable energy, and thereby to build the foundation of decarbonisation with the effort of everyone, ahead of the world.

2.1.1 Priority of efforts

The Tokyo 2020 Games is going to implement measures to mitigate climate change based on the priority below to realise the goal of “Towards Zero Carbon.”

The first step of these efforts is to calculate the carbon footprint of the Games to identify the current status. Then, measures to avoid the emissions of carbon dioxide (CO_2) and other greenhouse gases estimated in the calculation are designed such as changing plans to reduce emissions as much as possible. The reduction of the emissions is then actually implemented through energy conservation measures and switch to renewable energies. Unavoidable CO_2 emissions are compensated with the absorption of reduction at other areas. Properly implement PDCA cycle and ensure the effectiveness of carbon management.



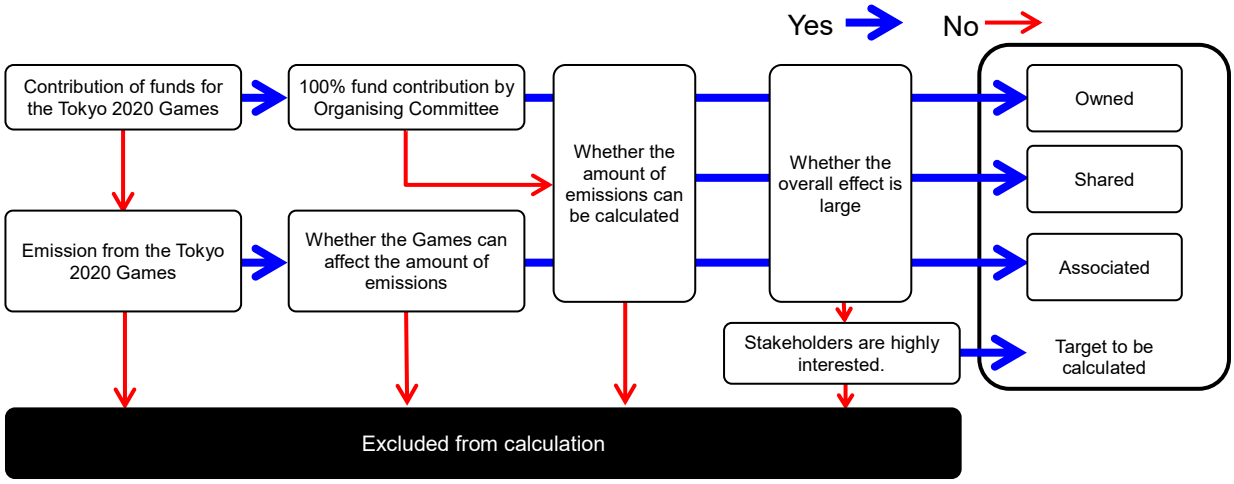
2.1.2 The carbon footprint of the Tokyo 2020 Games (proper identification of the amount of CO_2 emission)

An important step to determine measures to implement is to identify carbon footprint that numerically expresses greenhouse gases emitted in relation to the Games by converting them into the amount of CO_2 emissions. The carbon footprint of the Tokyo 2020 Games at the current point is calculated based on methods used in the Olympic/Paralympic Games of the past. The carbon footprint will be updated as appropriate according to the latest data.

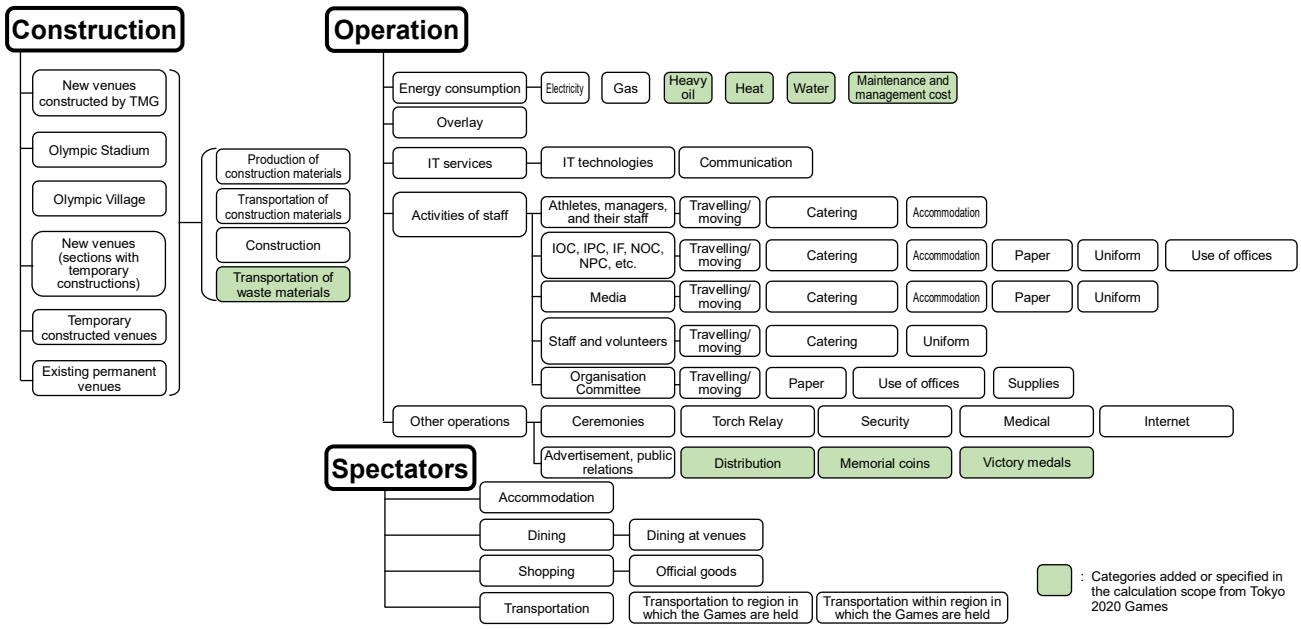
(1) The boundary of carbon footprint (applicable ranges of calculation)

Based on ideas from the past games, the boundary for the calculation of carbon footprint for the Tokyo 2020 Games is set based on the decision-tree below.

The decision-tree to determine the boundary for calculating the carbon footprint of the Tokyo 2020 Games



In the calculation of the carbon footprint of the Tokyo 2020 Games, CO_2 emitting activities are extracted without missing any based on the decision-tree above. Then, applicable CO_2 emission factor is examined in detail to reflect actual conditions as much as possible. Therefore, more calculation categories are included compared to past games in the diagram below that indicates categories to be included in the carbon footprint calculation range.



(2) Method of carbon footprint calculation

Carbon footprint is the sum of the activity level multiplied by applicable CO_2 emission factors. The activity level is based on the information available at the time of calculation. The CO_2 emission factors are carefully examined to reflect the actual conditions of the Tokyo 2020 Games upon application.

Outline of carbon footprint calculation method

Category		Carbon footprint (item)		Amount of activity		CO_2 emission factor*
Construction		The construction of new venues	=	Total floor area of new construction [m^2]	×	Emission factor of new construction [t-CO_2 / m^2]
		The construction of temporary venues	=	Total floor area of temporary construction [m^2]	×	Emission factor of temporary construction [t-CO_2 / m^2]
Operation		Energy consumption by venues	=	Energy consumption ,etc. [kWh]	×	Emission factor of energy consumption [t-CO_2 / kWh]
		Overlay	=	Area of overlay [m^2]	×	Emission factor of overlay [t-CO_2 / m^2]
		IT services	=	Budget of IT services [JPY]	×	Emission factor of IT services [t-CO_2 / JPY]
	Other operations	Ceremonies	=	Budget of ceremonies [JPY]	×	Emission factor of events [t-CO_2 / JPY]
		Torch Relay	=	Budget of Torch Relay [JPY]	×	Emission factor of events [t-CO_2 / JPY]
		Security	=	Security budget [JPY]	×	Emission factor of security [t-CO_2 / JPY]
		Medical activities	=	Budget of medical activities [JPY]	×	Emission factor of medical activities [t-CO_2 / JPY]
		The Internet	=	Budget of the Internet [JPY]	×	Emission factor of the Internet [t-CO_2 / JPY]
		Advertisement and publicity	=	Budget of advertisement and publicity [JPY]	×	Emission factor of advertisement and publicity [t-CO_2 / JPY]
		Distribution	=	Budget of distribution [JPY]	×	Emission factor of distribution [t-CO_2 / JPY]
		Memorial coins	=	Metal weight of memorial coins [kg]	×	Emission factor of metals [t-CO_2 / kg]
		Olympic Medals	=	Weight of metals used in Olympic Medals [kg]	×	Emission factor of metals [t-CO_2 / kg]
	Staff of the Games	Catering by catering suppliers	=	Budget of catering [JPY]	×	Emission factor of catering [t-CO_2 / JPY]
		Accommodation by accommodation suppliers	=	Number of nights spent at each accommodation [person & night]	×	Emission factor of accommodation [t-CO_2 / person & night]
		Paper consumption by organisations	=	Amount of paper consumption by organisations [kg]	×	Emission factor of papers [t-CO_2 / kg]
		Uniform by organisations	=	Amount of uniform consumed by organisations [kg]	×	Emission factor of uniform [t-CO_2 / kg]
		Office uses	=	Amount of energy consumption, etc. [kWh]	×	Emission factor of energy consumption (office) [t-CO_2 / kWh]
		Supplies	=	Budget of supplies [JPY]	×	Emission factor of supplies [t-CO_2 / JPY]
		Transportation by organisations	=	Total amount of transportation by organisations [person & km]	×	Emission factor of transportation [t-CO_2 / person & km]
Spectators		Accommodation for the spectators	=	Total number of nights spectator spend at accommodations [person & night]	×	Emission factor of accommodation [t-CO_2 / person & night]
		Drinking and dining by the spectators	=	Total number of drinking and dining by the spectator [serving]	×	Emission factor of drinking and dining [t-CO_2 / serving]
		Purchase by the spectators	=	Monetary amount of purchase by the spectator [JPY]	×	Emission factor of official goods [t-CO_2 / JPY]
		Transportation by the spectators	=	Total amount of transportation by the spectators [person & km]	×	Emission factor of transportation [t-CO_2 / person & km]

*References of CO_2 Emission factor

- *"IDEA v2(Inventory Database for Environmental Analysis v2)*" (The National Institute of Advanced Industrial Science and Technology/Japan Environmental Management Association for Industry)
- "Report of the development of environmental evaluation technique through the lifecycle of social capitals –Methods to practice social capital LCA-" (National Institute for Land and Infrastructure Management, Ministry of Land, Infrastructure and Transport)
- "*LCA guideline for buildings*" (Architectural Institute of Japan, 2006)
- "*Green diagnosis and modification planning standards and their descriptions*" (supervised by Government Buildings Department, Minster's Secretariat at Ministry of Land, Infrastructure and Transport)
- "The environmental load intensity that takes into account of global supply chain estimated using the global link input-output (GLIO) model provided in Embodied Energy and Emission Intensity Data (3EID) for Japan Using Input-Output Tables" (National Institute for Environmental Studies)
- "Carbon Emission Calculator" (ICAO)
- "London2012 Carbon footprint study – Methodology and reference footprint" (March 2010)
- The CO_2 emission factor of newly constructed venues estimated based on the amount of materials used in the Tokyo 2020 Games

(3) Conditions of carbon footprint calculations

Calculations in this document include the initial carbon footprint when no special measures are implemented (business as usual (BAU) case) and carbon footprint when the effects of emissions reduction measures are implemented for venues such as the review of venue planning to fully utilise existing venues and design changes (the case with the review of venues). The BAU case is calculated by adding the information of additional sports which are added after the candidate period to the information from the candidate period.

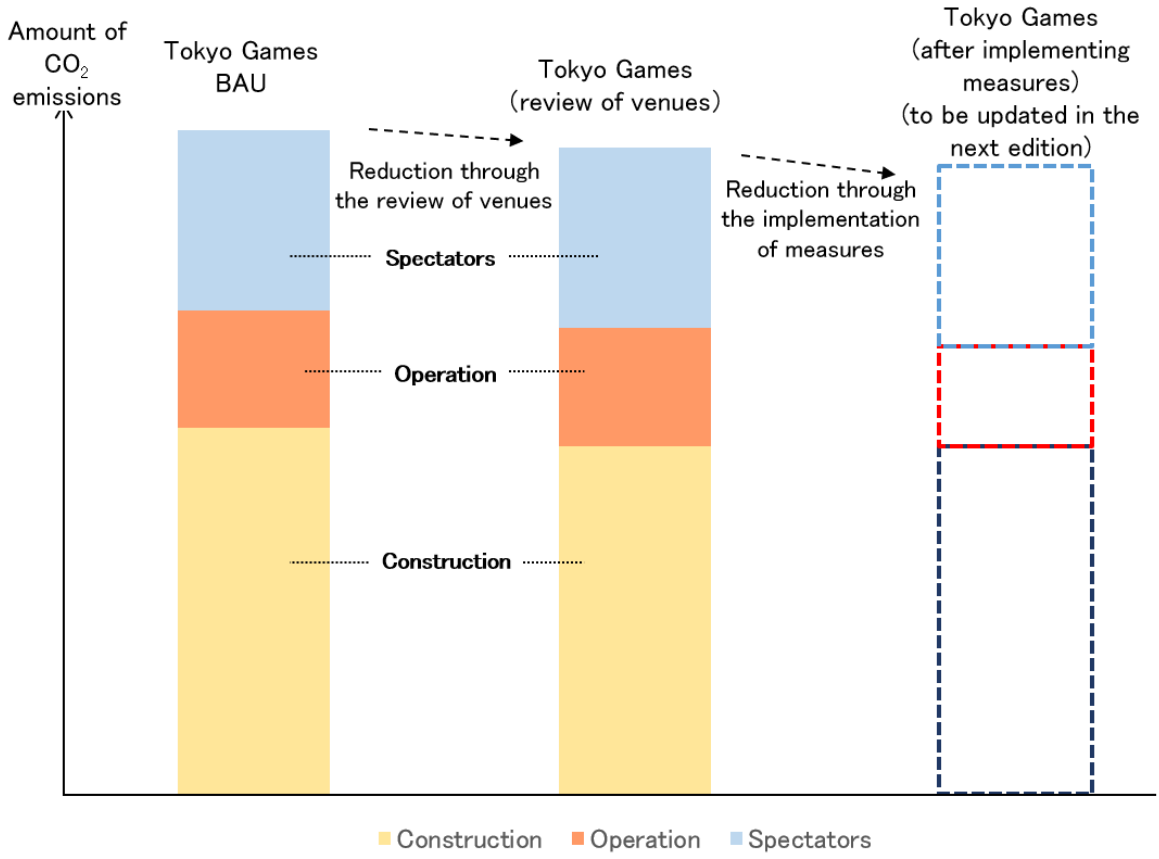
Other effects to mitigate climate change (e.g. the use of renewable energies) will be reflected based on the progress of mitigation measures to the carbon footprint which will be updated when sustainability reports are prepared.

(4) Values of carbon footprint

The figure below describes the carbon footprint of the Tokyo 2020 Games.

The Tokyo 2020 Games will have lower carbon footprint than recent Olympic Games, because no new infrastructure will be constructed specifically for the purpose of the Tokyo 2020 Games, and currently available venues and facilities will be fully utilised for effective uses after Tokyo is selected as the host city.

The total amount of carbon footprint based on the BAU case is 3.01 million t-CO_2 which is lower than the carbon footprints of the London 2012 Games (about 3.45 million t-CO_2 based on BAU case) and the Rio 2016 Games (about 3.56 million t-CO_2 based on BAU case). In addition, the carbon footprint of the case with the review of venues is 2.93 million t-CO_2, indicating that greenhouse gas emissions are reduced by using existing venues.



The carbon footprint of the Tokyo 2020 Games

Category	Tokyo (BAU)	Tokyo (reduction through venue review and other measures)	London (BAU)
Construction	1.66 million t-CO_2	1.58 million t-CO_2	1.73 million t-CO_2
Operation	0.53 million t-CO_2	0.53 million t-CO_2	0.46 million t-CO_2
Spectators	0.82 million t-CO_2	0.82 million t-CO_2	0.67 million t-CO_2
Transportation infrastructure	Not applicable	Not applicable	0.59 million t-CO_2
Total	3.01 million t-CO_2	2.93 million t-CO_2	3.45 million t-CO_2

2.1.3 Targets in the field of climate change

The following targets and indicators are set for the avoidance of emissions, reduction of emission, and offset of CO_2 and other greenhouse gases to achieve goals.

Targets in the field of climate change in the Tokyo 2020 Games

Target			Numerical target (including qualitative targets)	Main indicator
Emissions avoidance		[Construction] 1. Strategic venue planning for the maximum use of existing venues and public transport networks	●Ratio of existing venues: 58%	●Number of existing venues/ total number of venues
		2. Ensuring high environmental performances in the construction of venues	● Venues with passive design: 5 venues: Five venues (Olympic Stadium, Village Plaza, Ariake Arena, Musashino Forest Sport Plaza, Ariake Tennis Park) ● Use of recycled materials ● Use of environmentally friendly materials	●Use of passive design: Number of venues with passive design ●Use of recycled materials -The amount of recycled materials used (the following are examples of possibly applicable materials) -Concrete made with recycled frames -Recycled crushed stones -Recycled steel such as electric arc furnace steel -Ceramic tiles made with recycled materials -Vinyl floor materials made with recycled materials -Secondary concrete products made with eco-cement ●The amount of environmentally friendly materials used (the following is the example of possible applicable material) -Timbers produced in Japan
		[Operation] 3. Maximum procurement of materials and goods with high environmental performances	●To purchase materials and goods based on the Sourcing code	●The amount of materials and goods with high environmental performances used (The following is the example of possible materials and goods) -Amount of the use of recycled fibers -Amount of the use of recycled metals in Olympic Medals
Reduction of emissions	Reduction measures	[Construction] 4. Construction of venues by effectively using energy saving technologies	●Three new permanent venues (Olympic Stadium, Olympic Aquatics Centre, and Ariake Arena) are going to satisfy Rank S in CASBEE. ● Temporary indoor venues (Olympic Gymnastic Centre) satisfies Rank S in CASBEE for short-term uses. ● Seven new permanent facilities with the floor area of 2,000 m^2 or more (Olympic Stadium, Musashino Forest Sport Plaza, Ariake Arena, Ariake Tennis Park, Seaside Park	●Evaluation of the Tokyo Building Environmental Plan System: Number of venues which satisfy Level 3 ●CASBEE: Number of venues which aim to receive Rank S in CASBEE ●

Target			Numerical target (including qualitative targets)	Main indicator
			Hockey Stadium, Sea Forest Waterway, and Olympic Aquatics Centre) satisfy Level 3 of the Tokyo Building Environmental Plan System and reduce the energy efficiency of the facility by more than 30% compared to common buildings.	
		[Operation] 5. Maximum use of facilities and equipment with high energy efficiency	● Maximum use of facilities and equipment with high energy efficiency	●Number of equipment with high energy efficiency (The following is the example of target equipment and devices.) -Number of temporary venues in which LED lamps and advanced air conditioners
		6. The implementation of energy management in venue operations, and the installation and use of BEMS in new permanent venues	●Proper use of lighting and room temperature in office facilities ● Number of venues with BEMS: 4 venues (Olympic Stadium, Olympic Aquatics Centre, Ariake Arena, and Musashino Forest Sport Plaza)	●Status of optimising lighting and room temperature in office facilities ●BEMS: Number of venues with passive design
		7. Reduction of CO_2 emissions through recycled use of materials and goods as much as possible	●Ratio of recycling and reuse of procured materials and goods (linked with the target of resource management): 99%	●Amount of recycling and reuse/amount procured
		8. Promotion of transport with lower environmental load	● Passenger cars: Ratio of low-pollution and fuel efficient vehicles: 100% ●The average CO_2 emissions intensity of vehicles used in the Games (gCO_2/km)	●The average CO_2 emissions intensity of vehicles used in the Games (gCO_2/km)
		9. Maximum reduction of greenhouse gases (e.g. HFCs) besides CO_2	●Amount of the reduction of alternative fluorocarbons	●Record of installing devices that use natural refrigerant
	Renewable energy	[Construction] 10. Installation of facilities which use renewable energies in permanent venues	●The number of venues in which solar power generation, solar heat utilisation, and geothermal heating/cooling systems are installed and the capacity of the installed systems	●Solar power generation system: Number of installed facilities and total capacity of the system (kW) ●Solar heat utilisation system: Number of installed facilities and total capacity of the system (kW) ●Geothermal heating/cooling system: Number of installed facilities and total capacity of the system (MJ)
		[Operation] 11. Maximum use of renewable energy	●Ratio of the use of renewable electricity:100% ●The amount of renewable energies other than electricity	●The amount of the use of renewable electricity during operation ●The amount of renewable energy with green electricity certificate used when renewable electricity cannot be used ●Amount of hydrogen energy derived from renewable energy used in purposes other than vehicles
Offset, etc.		12. Implementation of offset	●Implementation of offset or	●The amount of offset through

Target		Numerical target (including qualitative targets)	Main indicator
	for CO_2 and other greenhouse gases which are inevitably emitted even with the implementation of avoidance/reduction measures of emissions	other measures	the procurement of credit based on applicable systems ● Implementation, performance, and expected implementation of reduction activities through the participation and cooperation of various organisations to lower carbon footprint

The following outcomes are going to be achieved in the Tokyo 2020 Games based on the targets in the table above.

- Total amount of carbon footprint: The realisation of the Games with low total carbon footprint
- Reduction of carbon footprint through carbon reduction measures: Implement reduction measures to reduce carbon footprint from the BAU level.
  - Emissions avoidance measures (strategic revision of venue plans): About 80,000 t-CO_2
  - Carbon footprint will be calculated later for reduction measures besides the above.
- Implement carbon offset for the emission of CO_2 which are inevitable even with reduction measures to reduce effects.
- Promote activities to improve awareness toward climate change and to reduce future emissions through the participation and cooperation of various organisations and groups both in and outside of the Tokyo 2020 Games.

Target 1 Strategic venue planning to fully use existing venues and public transport networks [Construction]

Equipment in venues has a great impact on sustainability among activities related to the Games. Therefore, the venue planning including the use of existing venues need to be reviewed to minimise the environmental load. Existing venues will be used in about 60% of all venues (25 out of 43 venues) by additionally revising venue plans (table below) in addition to using Yoyogi National Stadium and Nippon Budokan, the main venues of the 1964 Tokyo Games which have been planned to be used since the bidding process. The overall avoidance is estimated to be approximately 80,000 t-CO_2.

In addition, the emission of CO_2 through the transport of spectators and other activities is avoided as much as possible through measures such as establishing venue plans to ensure the maximum use of the developed public transport networks and systems of Japan.

(Numerical target)

- Ratio of existing venues: 58%

Table: List of the outcomes of the review of venues

As of June 2018

	Sport / Discipline	Pre-revision	Post-revision
Olympic Games	Aquatics (Water Polo)	Water Polo Arena	Tatsumi International Swimming Centre
	Badminton	Youth Plaza Arena A	Musashino Forest Sport Plaza
	Basketball	Youth Plaza Arena B	Saitama Super Arena
	Cycling (Road(Road Race: Start))	Imperial Palace Garden	Musashinomori Park
	Cycling (Road(Road Race: Finish)	Musashinomori Park	Fuji International Speedway
	Cycling (Mountain Bike)	Sea Forest Mountain Bike Course	Izu Mountain Bike Course
	Fencing	Tokyo International Exhibition Centre (Tokyo Big Sight)	Makuhari Messe Hall B
	Rugby	Olympic Stadium	Tokyo Stadium
	Sailing	Wakasu Olympic Marina	Enoshima Yacht Harbour
	Taekwondo, Wrestling	Tokyo International Exhibition Centre (Tokyo Big Sight)	Makuhari Messe Hall A
Olympic and Paralympic Games	Cycling (Track)	Olympic Velodrome	Izu Velodrome
	Equestrian (Dressage, Eventing, Jumping	Dream Island Stadium	Equestrian Park
Paralympic Games	Boccia	Tokyo Big Sight Hall B	Olympic Gymnastic Centre
	Football 5-a-side	Seaside Park Hockey Stadium	Aomi Urban Sports Venue
	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 Plaza
	Wheelchair Basketball	Youth Plaza Arena B	Ariake Arena
	Wheelchair Fencing	Youth Plaza Arena A	Makuhari Messe Hall B

*Venues of some sports are yet to be determined.

Target 2 Ensuring high environmental performances in the construction of venues [Construction]

The performances of buildings will be constructed to avoid CO_2 emissions by selecting environmentally friendly construction materials and using environmental technologies.

Specific measures include the schematic procurement of low-carbon raw materials based on the Sourcing Code and the use of recycled materials. New permanent venues will also be equipped with passive designs, meaning the effective use of natural lighting and natural ventilation.

Olympic Stadium is planned with the effective use of passive designs such as the design to efficiently carry seasonal winds to spectator seats and the reduction of areas requiring lighting devices through the use of skylight. The Olympic/Paralympic Village Plaza is also designed to reduce CO_2 emissions by promoting the reuse of materials such as launching a project to construct the facilities using wooden materials and to reuse the materials in other areas after the Tokyo 2020 Games as one of Olympic/Paralympic legacies.

In addition, the emission of CO_2 generated when many power generators are used will be reduced by schematically using commercial power supplies and stabilizing the power supply using the power grid. The CO_2 load associated with the transportation of soil and sand is also reduced by schematically reusing them within the same construction sites. Upon the implementation of the Tokyo 2020 Games, activities with negative effects such as ones which increase CO_2 emissions are identified and controlled to properly handle them from the planning phase.

(Numerical target)

- Venues with passive design: 5 venues (Olympic Stadium, Village Plaza, Ariake Arena,
  Musashino Forest Sport Plaza, Ariake Tennis Park)
- Total amount of recycled materials used (qualitative target)
- Use of environmentally friendly materials (qualitative target)

Target 3 Maximum procurement of materials and goods with high environmental performances [Operation]

Upon the procurement of materials and goods, ones with lower CO_2 emissions are selected to satisfy environmental laws, regulations, policies, and guidelines based on the Sourcing Code.

(Numerical target (qualitative))

- To purchase materials and goods based on the Sourcing Code

Target 4 Construction of venues by effectively using energy saving technologies [Construction]

Additionally constructed permanent venues are constructed to improve energy efficiency in the entire buildings by actively using functions and technologies with lower environmental loads. Especially, Ariake Arena and Olympic Aquatics Centre which are the additionally constructed permanent indoor competition venues, the target of the Tokyo Metropolitan Building Environment Planning System, are designed to satisfy Level 3, the highest level in the evaluation for matters to be considered in both “reduction of the thermal load of a building” and “energy conservation system” categories in the Environmental Guideline for Constructions in Tokyo. Olympic Stadium, Ariake Arena, and Olympic Aquatics Centre will be designed to achieve rank S, the highest rank in Comprehensive Assessment System for Built Environment Efficiency (CASBEE), the green building rating system of Japan that is equivalent of the LEED certification system in the U.S. In addition, Olympic Gymnastic Centre, the large temporary indoor sports arena, is going to

achieve rank S for short-term uses in CASBEE.

For the construction of the Olympic/Paralympic Village, specific aspects of CASBEE-UD, the tool to evaluate urban development projects including groups of buildings in addition to LEED ND (neighbourhood development) standards are going to be adopted whenever possible to ensure high environmental performances based on energy conservation standards. (The construction started in January 2017, and the construction of necessary parts for the Games will be completed in December 2019). Especially, residential buildings which will be temporarily used as the Olympic/Paralympic Village will be reformed into new housings after the Tokyo 2020 Games; thus, the installation of solar power generation systems in the entire residential lots is being considered.

In addition, hydrogen stations are going to be installed after the Tokyo 2020 Games to supply hydrogen to fuel cell vehicles. The Olympic/Paralympic Village is going to remain as the legacy of the 2020 Games and the model to realise hydrogen society by planning the installation of new technologies such as hydrogen pipelines and pure hydrogen fuel cell to realise full-fledged hydrogen supply system.

(Numerical target)

- Three new permanent venues (Olympic Stadium, Olympic Aquatics Centre, and Ariake Arena) are constructed to satisfy Rand S in CASBEE.
- Temporary indoor venue (Olympic Gymnastic Centre) will obtain Rank S in CASBEE for short-term uses.
- Over 2000 m² ,seven new permanent facilities (Olympic Stadium, Musashino Forest Sports Plaza, Ariake Arena, Ariake Tennis Park, Seaside Park Hockey Stadium, Sea Forest Waterway, and Olympic Aquatics Centre) are constructed to receive Level 3 in the Tokyo Building Environmental Plan System. The energy reduction rate (ERR) of facility systems is going to be 30% or more lower than standard buildings.

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

Hydrogen energy is a next-generation energy that can emit no CO_2 in the entire lifecycle when renewable energies are used in the production phase as it only emits water in the consumption phase. The TMG is spreading the use of hydrogen energy such as promoting the use of fuel-cell vehicles and installing hydrogen stations to realise a hydrogen society.

In the Tokyo 2020 Games, fuel-cell vehicles are going to be used as official vehicles. In addition, hydrogen energy is going to be actively used by building hydrogen supply systems such as the construction of hydrogen pipelines, and the Olympic Village is going to be used as the model for realising a hydrogen society as one of the legacies of the Games. The TMG is also planning to use hydrogen produced using renewable energies generated in Fukushima in the Tokyo 2020 Games through the cooperation with the prefecture of Fukushima that suffered intensive damage in the Great East Japan Earthquake. Also, hydrogen stations will be installed after the Tokyo 2020 Games to transport hydrogen from there to other areas and districts. Pure hydrogen fuel cells installed individual areas and districts will then supply electricity and heat to buildings. Through these efforts, Tokyo is going to lead the construction of hydrogen society, strengthen the resilience of the city, and produce legacies such as the construction of new business models for using hydrogen in residential areas. The use of hydrogen energy will be increased using the Tokyo 2020 Games as an opportunity and leave hydrogen society as one of the legacies of the Tokyo 2020 Games.

Target 5 Maximum use of facilities and equipment with high energy efficiency [Operation]

Facilities used in the Games will be designed to reduce CO_2 emissions through the effective installation of efficient and high-energy-performance facilities and devices. Accommodations where the staff of the Games stays are also encouraged to implement energy conservation measures.

Specifically, when procuring mechanical facilities, parts, and services used in facilities and venues other than ones mentioned in Target 4, the procurement staff are encouraged to select ones with higher efficiency and higher energy saving performances as well as low CO_2 and low-pollution type construction machineries which are based on technologies specified in “the Tokyo Specifications for Energy Efficiency and Renewable Energies.”

(Numerical target (qualitative))

- Maximum use of facilities and equipment with high energy efficiency

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 first edition of this document listed the following activities as matters to be considered. As details of individual activities are becoming more specific from now on, these activities are examined and planned to make them happen by working together with related staff and organisations.

- to reduce CO_2 emissions from torches used in the Torch Relay, and those from the relay caravan
- to reduce CO_2 emissions and resource consumption through the production of uniform for the staff of the Games
- to reduce CO_2 emissions when organising live sites
- with regard to accommodation for those involved in the Games, to promote energy-saving measures
- to encourage caterers to select environmentally friendly and energy-saving devices and equipment

Target 6 The implementation of energy management in venue operations, and the installation and use of BEMS in new permanent venues [Operation]

The use of BEMS connected to IT technologies is effective in keeping track of energy consumption. BEMS will be installed in new permanent venues, and energy consumption data obtained through BEMS will be used for efficient energy management. In venues without BEMS, energy consumption will be kept track of using smart meters or other means to promote proper energy management.

Examples of energy conservation measures at workforce areas include lighting control by reducing the number of lighting devices (in existing permanent facilities), air conditioner management by wearing light and cool clothes to stay comfortable while the room temperature is set to 28 degrees Celsius, and efficient supply of hot water.

The residential units of the Olympic Village are temporarily used as the accommodation of athletes during the Tokyo 2020 Games and then turned into new housings. Comfortable and environmentally friendly lifestyle can be achieved at the same time through the use of fuel cells for households and energy management system.

(Numerical target)

- Number of venues with BEMS: 4 venues (Olympic Stadium, Olympic Aquatics Centre, Ariake Arena, Musashino Forest Sport Plaza)
- Proper use of lighting and room temperature in office facilities (qualitative)

Target 7 Reduction of CO_2 emissions through the maximum recycling of materials and goods [Operation]

Materials, goods, and devices used in the Games must be procured through rental/lease schemes as a basic rule. If purchases are unavoidable, they must be designed during the design phase with specifications which enable post-users to reuse them whenever possible. After they are used for delivery of the Games, all possible arrangements must be made so that they will be used later such as using the re-sale market. These efforts enable the reduction of CO_2 emitted for the production of necessary materials, goods, and devices. These are effective measures with which resource management and CO_2 reduction can both be achieved as a synergistic effect. The entire organisation is going to promote these measures by creating systems to ensure smooth operations.

(Numerical target)

- Reuse of procured items and goods (use of rentals and leases, reuse after the Games)・ Recycling ratio: 99%

Target 8 Promotion of transport with lower environmental load [Operation・Spectators]

For Games operations, the transport of large volumes of workers, materials and waste is required. Therefore, low-pollution and fuel-efficient vehicles will be used in the Tokyo 2020 Games while using the most advanced and efficient public transport network in the world. In addition, other relevant measures such as the promotion of eco-driving through intensive public relations activities will be integrated to reduce environmental load, especially CO_2 emissions.

(Numerical target)

- Passenger cars: The ratio of low-pollution and fuel efficient vehicles: 100%
- The average CO_2 emissions intensity of vehicles such as HVs and FCVs used in the Games (gCO_2/km)
  (Values are determined when there is a progress in the transport network.)

i. Promotion of the use of public transports

The spectators are expected to reach venues using public transports as much as possible. The information of the public transport will be fully publicised and informed to the spectators so that they can make full use of the trains, subways, and buses to reduce CO_2 emissions as much as possible.

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.

ii. Measures targeting individual automobiles (the use of vehicles with high environmental performances)

Vehicles needed for the Games include buses for athletes and media, buses which operate within the Olympic/Paralympic Village, shuttle buses carrying spectators from train/subway stations to venues, and

vehicles for the staff of the Games.

Among them, buses will be the low-pollution and fuel-efficient types which satisfy the Tokyo Metropolitan Ordinance on Environmental Conservation and other relevant ordinances and regulations whenever possible.

In addition, electric vehicles, fuel-cell vehicles, and hybrid vehicles are planning to be used as buses operating inside the Olympic/Paralympic Village. Proper vehicles for specific purposes are also provided and used in events such as the Torch Relay.

Hybrid vehicles and fuel-cell vehicles are also used as the spectator shuttle buses, one of the means of transport for the spectators.

Low-pollution and fuel-efficient type vehicles such as hybrid vehicles are used as much as possible as passenger cars. Some of the passenger cars are going to be fuel-cell vehicles.

Drivers are also notified of and educated about eco-driving such as the reduction of rapid acceleration and sudden braking during driving.

iii. Considerations given to transport of Games-related materials

The operation of the Games requires the transportation of a large amount of people, materials, goods, and wastes. Transportation contractors and waste disposal contractors are encouraged to reduce CO_2 emissions through distribution by using low-pollution and fuel efficient vehicles and practicing eco-driving such as the reduction of sudden acceleration and braking and the reduction of engine idling.

For transport of materials and waste, in particular, we will aim to reduce CO_2 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 CO_2 emissions. Therefore, we will seek to reduce CO_2 emissions associated with logistics by selecting food in season and produced in neighbouring regions wherever possible, with consideration given to quality and costs.

iv. Measures against traffic congestion

The transportation of the Tokyo 2020 Games is aiming to “realise smooth transportation in and around the Games and safety.” Transportation demand management (TDM) is implemented to realise this goal. TDM is the effort to promote changes in the behaviour of using transportation such as the efficient use of automobiles and switching to suitable public transport options to reduce congestions on road and specific public transport.

The implementation of TDM will reduce the total volume of automobile traffic and realise smooth transport, which result in reduced environmental load.

Target 9 Maximum reduction of greenhouse gases (e.g. HFCs) besides CO_2 [Operation]

Measures to reduce greenhouse gases besides CO_2 are also important. Especially, the CO_2 emission factor is high for HFCs, and only a small amount has a large impact. HFCs are used as refrigerant in air conditioners. The procurement of devices for the Tokyo 2020 Games is going to be properly planned from the preparation phase to select devices with Non-fluorocarbon refrigerant (natural refrigerant). If used air conditioners must be removed, it must be done while properly implementing measures to prevent HFCs

from leaking.

(Numerical target)

- Amount of the reduction of alternative fluorocarbons as coolant

Target 10 Installation of facilities which use renewable energies in new permanent venues [Construction]

Renewable energies such as sunlight are an important source of energy from the perspective of the mitigation of global warming as they emit no CO_2 during power generation as well as the perspective of having emergency power supply. Permanent venues of the Tokyo 2020 Games are going to be equipped with various renewable energy systems such as ones which use solar power and solar heat.

(Numerical target)

- The number of venues in which solar power, solar heat, and geothermal heat systems are installed and the capacity of the installed systems (described in the table below)

(Specific renewable energy facility installation plan) (○: Venues where renewable energy facilities are going to be installed)

Venue	Solar power generation system	Solar heat utilisation system	Geothermal heating/cooling system
Olympic Stadium	○	–	–
Ariake Arena	○	○	○
Ariake Tennis Park	○	○	–
Seaside Park Hockey Stadium	○	–	–
Sea Forest Waterway	○	–	–
Olympics Aquatics Centre	○	○	○
Musashino Forest Sport Plaza	○	○	○

*Chapter 3 discusses details of individual venues.

Target 11 Maximum use of renewable energy [Operation]

Renewable energies are going to be used as the electricity used in the operation of the Tokyo 2020 Games as much as possible through the renewable grid electricity and the purchase of Tradable Green Certificates. Such activities are going to be established in the future society as the legacy of the Games.

Specifically, the Games will require more electricity than the currently contracted electricity capacity. Thus, the renewable grid electricity is going to be maximized with the electricity contract with increased ratio of hydrogen from renewable energies for the additionally acquired electricity. Shortages are compensated with the use of Tradable Green Certificates and other systems and turned into green electricity.

In addition, from the perspective of being the Olympic Games for the recovery and restoration from recent natural disasters, there is a plan to use renewable energy generated in Tohoku and disaster-hit areas and to actively use hydrogen from renewable energy. Specifically, TMG reached a basic agreement on the cooperation of the research and development of CO_2-free hydrogen and renewable energies with the prefecture of Fukushima in May 2016. These activities are going to be promoted in the future.

In regard to fuels, the possibility of using renewable energies is going to be explored in cooperation with relevant people and organisations.

(Numerical target)

- Use of renewable energies for the operation of the Games (use of renewable energies): Electricity used in competition venues, IBC/MPC, and the Olympic/Paralympic Village will be 100% renewable electricity.
- The amount of renewable energies other than electricity (qualitative)

Target 12 Implementation of offset for CO_2 and other greenhouse gases which are inevitably emitted even with the implementation of avoidance/reduction measures of emissions

At large-scale events and projects, it is inevitable that a certain amount of CO_2 emissions is

generated even when preventive measures have been taken. Methods to offset these emissions have been attracting increasing attention.

Possible methods to offset CO_2 emissions include the use of Tradable Green Certificates, the documentation of the environmental value of electricity and the compensation with other CO_2 reduction effects.

For the Tokyo 2020 Games, we will consider the offset of CO_2 emissions as one of the tools to communicate the importance of the avoidance and reduction of CO_2 emissions domestically and internationally. The implementation of measures including the following is to be discussed:

- Offsetting CO_2 emitted by operation of the Games and construction of venue and the activity of participants and spectators, with Green Power Certificate or offset credits.
- Implementation of reduction activities through schemes for all organisations and groups to participate, etc.

(Activities)

- The CO_2 and other greenhouse gasses emitted through the Games which cannot be eliminated through the implementation of measures greenhouse gasses are offset using carbon credits which match with the concept of offset for the Tokyo 2020 Games.
- Activities which would improve awareness toward climate change and result in future emissions reductions are promoted through the participation and cooperation of various organisations and groups both in and outside of the Games. The outcomes of such efforts will be quantitatively accumulated.

(Numerical target (qualitative))

- Implementation of offset or other measures

Column: Activity of TMG, Activities to utilise energy saving achieved with the Tokyo Cap-and-Trade Program

The world begins to move towards a decarbonising society according to the Paris Agreement , TMG is aiming for "Zero Emission Tokyo" that does not emit CO_2, and it is realising sustainable city.

TMG has been implementing the cap-and-trade program targeting large-scale facilities including office buildings for the first time in the world since April 2010.

The emissions in FY2016 achieved 26% reduction from the baseline emissions thanks to the active energy conservation efforts of the covered facilities

TMG plans to offset carbon emissions based on the achievement of the Tokyo Cap-and-Trade Program.

1. Tokyo Zero Carbon Four Days in 2020
   - TMG plans to implement a campaign in order to offset all CO_2 emissions which are expected to be generated across Tokyo the four days of opening and closing ceremonies of the Tokyo 2020 Olympic and Paralympic Games.

   *Olympic Games: Opening Ceremony on Friday June 24, Closing Ceremony on Sunday August 9
   Paralympic Games: Opening Ceremony on Tuesday August 25, Closing Ceremony on Sunday September 6

   - The covered facilities are encouraged to donate their excessesive emissions reductions (CO_2 credit) to TMG to offset other emissions to realise the zero-carbon day.
   - Citizens and businesses of Tokyo will become motivated to conserve energy at the same time.

2. Efforts to reduce emissions for the Olympic and Paralympic Games
   - Sustainability is one of the major themes of the Olympic and Paralympic Games. As the host city, Tokyo is going to accelerate the installation of energy conservation systems and alternative energy uses to further reduce CO_2 emissions.
   - In addition, TMG is going to cooperate with the Tokyo 2020 Organising Committee so that the credits of the cap-and-trade system of Tokyo can be used to offset CO_2 emitted through the operation of the Tokyo 2020 Games and the construction of facilities (in preparation).

2.1.4 Management and implementation systems

For the thorough implementation of measures to mitigate climate change in the Tokyo 2020 Games, roles of various organisations and groups are clarified from the planning phase to the operation and the conclusion of the Games while checking progresses of various measures and practicing PDCA to make necessary improvements. Specifically, the carbon management system is developed in relation to the mitigation of climate change based on ISO20121 to ensure effectiveness. Chapter 3 describes details of the roles of individual organisations and groups.

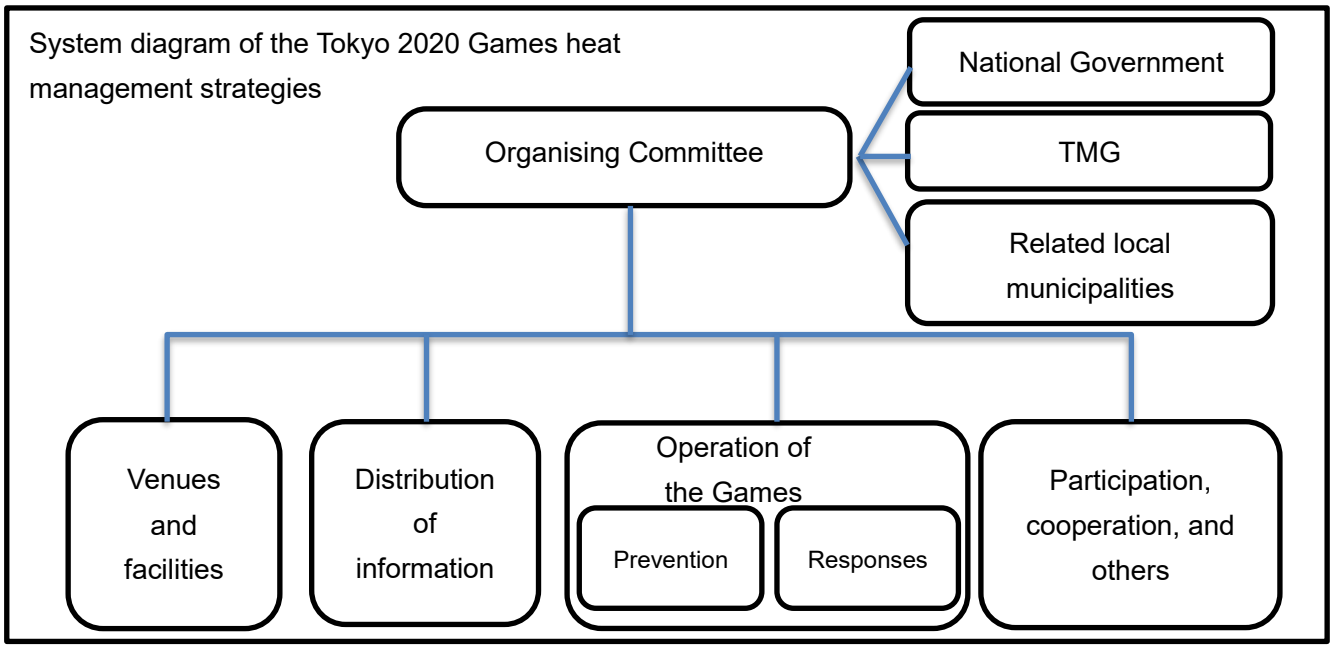
2.1.5 Adaptation strategies

It is necessary to adopt adaptation measures such as avoidance of emission of greenhouse gases such as CO_2, emission reduction and offset in order to deal with current climate conditions including extreme weather. River development, sewage development, and other relevant constructions are being conducted in Tokyo to prevent flood damages and to manage torrential rains which are increasing in recent years. The Tokyo 2020 Games will be held under intense summer heat. Thus, measures to prevent heat illness are going to be implemented to enable us to operate the Game safely. Also, the risk of infectious diseases increased by the movement of visitors from home and abroad, and by the distribution of materials is also going to be controlled.

(1) Heat management

The Tokyo 2020 Games will be held from July to September under severe summer heat. People including people with disabilities who are not accustomed with the summer heat in Japan are expected to come from around the world to be in the Games. Therefore, the Organising Committee is going to implement comprehensive and systematic heat management measures in cooperation with TMG, the National Government, and other relevant organisations by referring to Guideline for preventing heat illnesses at summer events prepared by Ministry of the Environment so that athletes and spectators can comfortably enjoy the Games.

*"2.3 Natural Environment and Biodiversity" discusses details of the measures from the perspective of mitigating the heat island phenomena in regard to heat management measures in the Games.



(2) Infectious diseases management strategies

In the Tokyo 2020 Games, many people from in and outside of Japan visit venues gather at specific areas. Thus, the Organising Committee is going to work with relevant organisations to ensure public health and safety including the implementation of infectious diseases management strategies.

2.1.6 Involvement, cooperation, and communication (engagement)

The understanding and cooperation of the public including spectators are by far one of the most essential aspects of realising emissions avoidance and reduction measures to reduce CO_2 emissions in the Games. In addition, the capacity of the organisation needs to be expanded, and the awareness and consideration toward sustainability need to be improved through the active involvement and cooperation of these people and the staff of the Games. The cooperative relationship among organisations and groups will be strengthened while widely distributing information, and strategies toward the realisation of zero-carbon will be implemented through their involvement and cooperation.

Specifically, opportunities to understand energy conservation and relevant activities will be increased by making energy consumption, CO_2 emissions, and the reduction of CO_2 emissions visible with display systems used in permanent facilities to guide people to think about the issue of climate change as their own issues and take proactive actions. Also, the information about environmental technologies used in the Games will be publicised to people in Japan and the world through backyard tours, various businesses, and other events which occur along with the Games. In addition, the movement for the reduction of CO_2 emissions will be strengthened through the cooperation among the citizens, various industries, Tokyo, and the national government to further promote the national movement toward the realisation of zero-carbon society.

These activities are going to be implemented based on “2.5 Involvement, cooperation, and communication (engagement).”

2.2 Resource Management

The goal 12 of SDGs is “to ensure sustainable consumption and production patterns.” The following activities are going to be implemented to create a great opportunity for contributing Goal 12 in the Tokyo 2020 Games in which no small amount of materials and goods are procured and used.

- To avoid wasting resources at all aspect of the preparation and operation of the Games (maximisation of resource efficiency);
- To ensure cyclical use of resources with the perspective of lifecycle from procurement to disposal (ensuring proper circulation of resources); and
- To implement the above and share the experience with athletes, spectators, and the people around the world (the promotion of cooperation for circulation of resources).

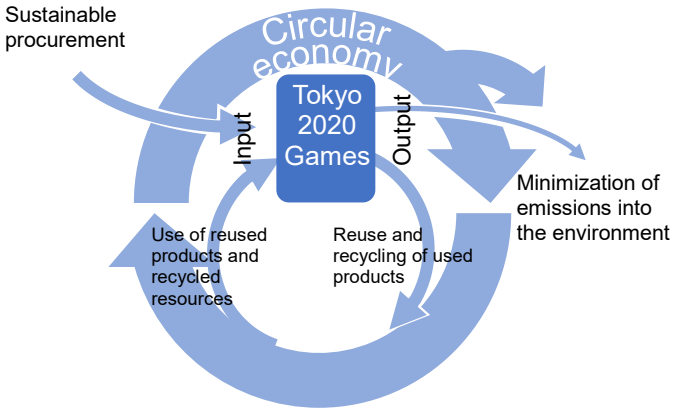
Based on the above, the Tokyo 2020 Games set the goal below :
“Zero Wasting”

The Tokyo 2020 Games conducts resource management by all, aiming to suppress deforestation and land devastation caused by resource exploitation as well as to bring environmental load by waste into zero, on the basis of utilising resources without any wasting throughout the supply chain.

2.2.1 Concept and priorities of initiatives

Various resources are used in the Tokyo 2020 Games. Resource management initiatives are necessary both in the resource input phase for the Games and the output phase after the Games.

The resource management in the Tokyo 2020 Games requires actions based on the priority shown in the figure below, awareness toward the effective use of resources and the reduction of wastes from the input phase, and proper actions in the output phase to minimise emissions into the environment. On top of that, the goal, “zero wasting” is set to be realised while maintaining an appropriate balance between economic rationality and feasibility.



The conceptual diagram of the important aspect of resource management

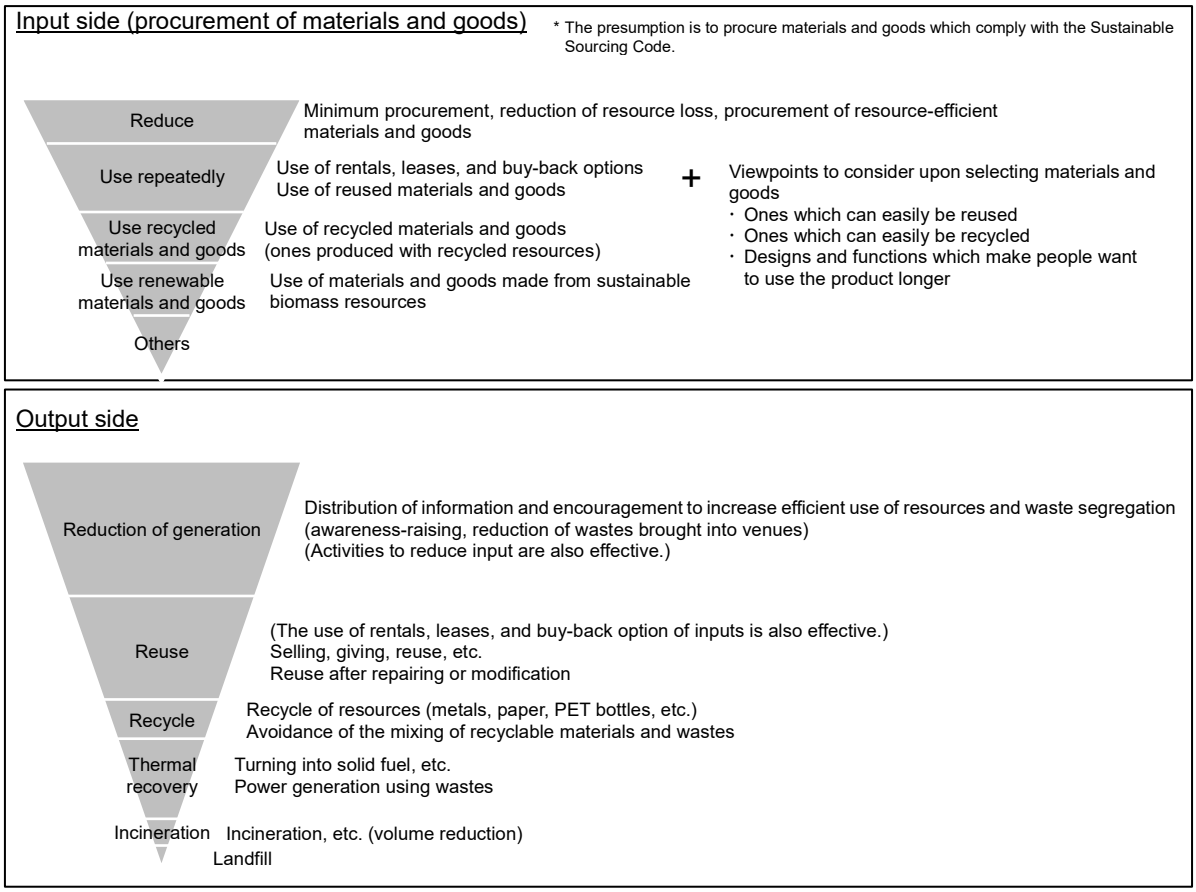
Especially, the following points need to be taken into consideration when procuring necessary materials and goods for the preparation of the Games on top to comply with the Sourcing Code.

<Points to be considered>

- The selection of materials and goods for resource conservation and the reduction of the generation of wastes
- The selection of reused goods and materials and goods made from recycled resources
- The selection of the most advantageous materials and goods by taking into consideration of the total cost covering from the purchase to post-consumption phase and disposals
- The procurement with which reuse is promised such as the use of rentals, leases, and purchases with buy-back system

Upon the purchase of materials and goods, the purchase of ones which are somewhat more expensive than the lowest ones may be selected by closely working with delivery partners including sponsors providing materials and goods given that the expensive items can be sold after using them in the Games, and the total cost up to disposal can be reduced by selecting them.

Priorities of Initiatives in resource management



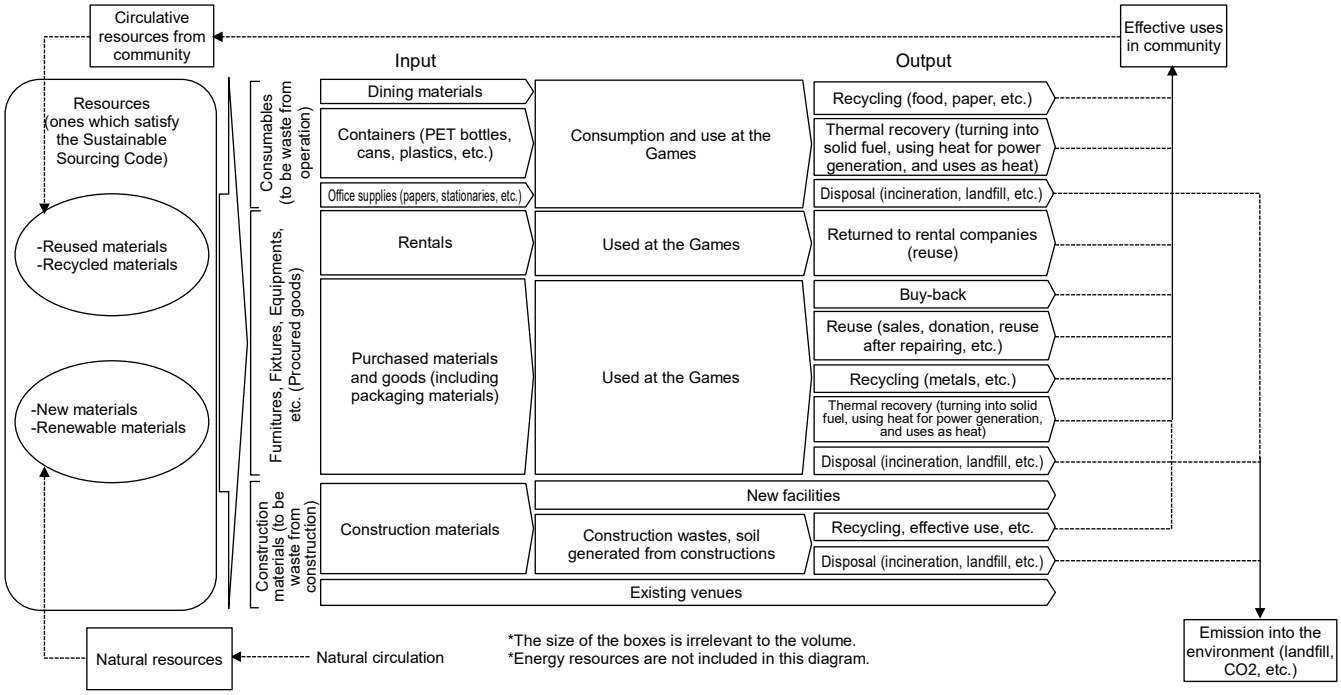
*When it is effective from the viewpoint of sustainability, this order can be changed.

2.2.2 The identification of resource concerning the Games

The important fundamental information of resource management is the amount of resources associated with the Games including the amount of materials and goods to be purchased and the amount to be disposed of after the Games. This information will be systematically gathered and checked. According to the past Games, the reported amount of wastes generated in connection with the installation and demolition of venues was about 60,000 tonnes and the one in connection with operational activities during the Games was about 10,000 tonnes.

Main resources concerning the Tokyo 2020 Games include consumables, supplies and equipment, and construction materials, which are summarised in the diagram below. The resources management in the Games is explored based on the conditions of these resources.

Main flows of resources related to the Tokyo 2020 Games



In regard to venues used in the Tokyo 2020 Games, as discussed in the section of climate change, the construction of new permanent facilities is reduced by fully utilising existing venues. In addition, new permanent venues are designed to last a long time and ensure efficient use of resources when the new construction or renovation of venues is necessary. Chapter 3 discusses in detail initiatives associated with the venues of the Games.

2.2.3 Targets in the field of resource management

The table below provides seven important viewpoints for setting the targets of resource management based on the use of resources in the Games to achieve the goal.

Important viewpoints required in targets

	Input side	Output side
Reduce	(1) Reduction and minimisation of wasteful use of resources	
Reuse	(2) Procurement to allow uses after the Games, Procurement of reused items	(5) Reuse of items
Recycle	(3) Procurement of easily recyclable products Procurement of recycled items	(6) Recycling of used materials and items
The aspect of the conservation of the global environment	(4) Sustainable resource management	(7) Minimisation of generations into the environment

Based on these viewpoints, the following target and indicators are set for both the upstream flow (input side) and the downstream flow (output side).

The amount of resource consumption is reduced such as by reducing the new input of resources through resource conservation measures. Stakeholders of the Games also stay aware of recycling at all scenes of the Games and practice the reduction, reuse, and recycling of wastes while recovering and the heat and energy generated from waste treatment. Sustainable utilisation of resource is thus ensured through these activities.

Targets are properly set based on comprehensive aspects including the following perspectives:

- Importance of resources for the Games such as the quantity, quality, contribution to produce legacy, and effects on reputations;
- A good balance between relevant organisations and items in scope; and
- The perspective of climate change (the reduction of CO_2 emissions) in addition to the viewpoint of resources and wastes

Targets in the field of resource management in the Tokyo 2020 Games

<table>
<tr><td colspan="2" rowspan="2"></td><td colspan="2">Target</td></tr>
<tr><td>Input side</td><td>Output side</td></tr>
<tr><td rowspan="3">The aspect of people and social activities</td><td>Reduce</td><td colspan="2">1. Reduction of the edible part of food waste
2. Reduction of packaging materials
3. Reduction of the production of new items by using rentals and leases to procure items</td></tr>
<tr><td>Reuse</td><td colspan="2">3. Reuse or recycle of procured items and goods (use of rentals and leases, reuse after the Games)</td></tr>
<tr><td>Recycle</td><td>4. Use of recycled materials
5. Use of recycled metal in medals of the Games</td><td>6. Reuse or recycle of wastes generated from operations of the Games
7. Recycle of food waste
8. Reuse or recycle of construction wastes</td></tr>
<tr><td colspan="2">The aspect of the conservation of the global environment</td><td>9. Sustainable use of renewable resources (e.g. timbers)</td><td>10. Reduction of emissions into the environment
(Reduction of the amount of landfill and CO_2 derived from wastes)</td></tr>
</table>

Table below provides details of the above targets.

Specific indicators used in the field of resource management in the Tokyo 2020 Games

Target	Indicator
1. Reduction of the edible part of food waste	The target is evaluated by the implementation status of the following activities. <Contracted food and beverage suppliers> ・The amount of food servings is forecasted based on the number of people who are served food, schedule, and ICT technologies and other means. <When serving food> ・The amount of serving is controlled through portion control and other means to serve proper portions that one can eat. <Increase awareness among athletes, staff, and spectators of the Games.> ・The awareness towards the importance of reducing of the edible part of food waste is raised. <Measurement> ・The amount of food waste is measured and made visible whenever possible.
2. Reduction of packaging materials	The target is evaluated by the implementation status of the following activities. <When procuring and serving food> ・The amount of packaging materials is reduced as much as possible through the cooperation among sponsors, licensed suppliers, and venders in venues. (e.g. packing and packaging materials, disposable containers, shopping bags) <Awareness raising targeting the staff and spectators of the Games> ・Call for the reduction of packaging materials <Measurement> ・The data of the amount of disposed containers and packages in the Tokyo 2020 Games are gathered to be conserved as the legacy for future Games.
3. Reuse or recycle of procured items and goods (use of rentals and leases, reuse after the Games) Reduction of the production of new items by using rentals and leases to procure items	The target is evaluated by both quantitative and qualitative indicators. <Quantitative indicator> Reuse or recycling ratio of procured items and goods = $\left(\frac{\text{The weight of reused or recycled items among procured items and goods}}{\text{The weight of procured items and goods}} \right)$ ∗Calculated based on the weight when items are procured <Qualitative indicator> The implementation status of the following activities is evaluated. ・Procured items are rented or leased as much as possible. ・Plan how to utilise items after the Games strategically from the procurement phase to pursue maximum reuse and recycling.
4. Use of recycled materials	The target is evaluated by the implementation status of the following activities. <Venue> ・Use recycled materials for the construction of venues. ・Materials are quantitatively kept track of to present actual values. <Procured items> ・The use of recycled materials is promoted based on the concept of the priority in item procurement. ・Items are quantitatively kept track of to present planned and actual values.
5. Use of recycled metal in medals of the Games	Apply indicators to “Tokyo 2020 Medal Project: Towards an Innovative Future for All.”
6. Reuse or recycle of wastes generated from operations of the Games	The target is evaluated by both quantitative and qualitative indicators. <Quantitative indicator> The reuse and recycling ratio of wastes generated from the operation of the Games = $\left(\frac{\text{The weight of reused or recycled wastes among wastes from operation}}{\text{The weight of wastes from operation}} \right)$ ∗Calculated based on the weight of materials disposed of as wastes <Qualitative indicator> To be evaluated based on the implementation status of the following activities. ・Encourage the participation of as many stakeholders as possible by calling for spectators in the Games to segregation wastes.

Target	Indicator
7. Recycle of food waste	The target is evaluated by both quantitative and qualitative indicators. <Quantitative indicator> Food waste recycling ratio= $\left(\frac{\text{The weight of recycled food waste}}{\text{The weight of food waste}}\right)$ *Calculated based on the weight of materials disposed of as wastes <Qualitative indicator> ・Implement operation to enable the segregation of food wastes.
8. Reuse or recycle of construction wastes	・The ratio of reuse or recycling and volume reduction of construction wastes generated at the construction sites of new permanent venues ・The ratio of the effective use of soil generated from the construction of new permanent venues *Definitions set by the government (TMG, the national government) are applicable to the details of the indicator.
9. Sustainable use of renewable resources (e.g. timbers)	The evaluation is based on the status of individual activities and supplies to ensure the sustainable use of renewable resources (e.g. Timbers) at venues and equipments.
10. Reduction of emissions into the environment	・Keep track of the amounts of procured items, wastes from operations, and construction wastes which are landfilled. ・Keep track of the amount of CO_2 emissions from wastes in cooperation with measures to mitigate climate change.

Target 1 Reduction of the edible part of food waste

With regard to the reduction of the edible part of food waste, the effort to minimise the generation of food wastes is necessary at individual phases including preparation, cooking, serving, and consumption. Thus, the edible part of food waste is going to be reduced as much as possible at competition venues, the Olympic/Paralympic Village, and other facilities by implementing model activities which are effective in raising awareness among the public and can easily be repeated at households, businesses, and large events through the cooperation among sponsors and caterers.

From the perspective of being courteous, the best courtesy is to serve hot dishes so that guests can enjoy them while they are hot, which is also considered the best way to minimise the edible part of food waste. With this point in mind, actions need to be designed to realise “eat with pleasure”, “eat cleanly” and “*mottainai*” by fully using the advanced infrastructure and practices that Japan has developed through its history with the world-famous and colourful Japanese cuisine.

In addition, since food loss and waste is a global issue today, the data of generated food waste are gathered and conserved as the legacy that can be utilised to reduce food waste at various scenes including large sport events in the future to implement effective measures to reduce food waste.

Measures which can be taken in venues where Tokyo 2020 serves foods directly are below. Details are examined hereafter to effectively reduce the edible part of food waste.

<Examples of possible measures implemented upon procurement>

- Forecast the necessary amount of food to be served during peak hours and average hours based on past data before the Tokyo 2020 Games and improve the precision of the forecast.
- Measure the daily amounts of supplies, consumptions, and leftovers during the Games to optimise the amount of food to order every day.
- The main dining at the Olympic/Paralympic Village is serving food 24 hours a day. Thus, the amount of food ordered as a stock is minimised by examining measures to flexibly purchase ingredients depending on demand fluctuations.

<Examples of possible measures to be implemented upon cooking>

- Estimate of the necessary daily amount based on consumption data from the past Olympic and Paralympic Games and similar events before the Tokyo 2020 Games
- Examination and comparison of estimated amount of demanded food before the Games and actual amount during the Games, and utilisation of the data for the following orders
- Research of hourly consumptions during the Games (the investigation of the number of visitors and the amount of consumption) which results in optimisation of the amount of order
- Optimisation of the timing to add food to serving dishes

<Examples of possible measures to be implemented upon serving>

- The selection of proper serving styles (e.g. cafeteria style or buffet style) depending on situations
- The implementation of portion control during cafeteria style serving

<Examples of possible measures to be implemented upon consumption>

- Awareness raising targeting athletes and spectators about the importance of reducing the edible part of food waste

Target 2 Reduction of packaging materials

a. Reduction of containers and packaging materials

The use of packing and packaging materials, disposable containers, and shopping bags is minimised through the cooperation of sponsors, licensed suppliers, and venders in venues. The data of the amount of disposed containers and packages in the Tokyo 2020 Games are gathered to be conserved as the legacy for future Games.

Specific measures are below. These are going to be examined in detail to implement effective measures to reduce containers and packages.

<Examples of possible measures>

- Reduction of the use of small bags used for individual products such as gifts
- Reduction of the use of disposable shopping bags by selling non-disposable shopping bags (eco bags) in venues
- Awareness-raising targeting spectators and staff of the Games about the importance of reducing packaging to encourage them to use less packaging materials

b. Other measures to reduce wasteful use of resources

Efficient use of resources when switching from the Olympics to the Paralympics

Decorations and supplies of venues must be procured with specifications so that no change would become necessary when switching from the Olympics to the Paralympics. When changes have to be made, decorations and supplies need to be properly designed and procured to minimise wastes upon the switch.

The following is the specific measures, which are going to be examined in detail to realise effective switching.

<Examples of possible measures>

- Reversible decorations for the Olympics and Paralympics
- The minimization of differences between the Olympics and Paralympics to enable a switch between them by pasting stickers or similar measures

Target 3 Reuse or recycle of procured items and goods (use of rentals and leases, reuse after the Games)

a. Procured items

Tokyo 2020 is going to use rentals and leases when procuring products and services as much as possible and promote sharing of these products and services. Also, the reuse and recycling of purchased items are promoted by reselling them or strategically securing those who would use the goods after the Games through the cooperation with the national government, local governments, and sponsors.

(Numerical target)

Ratio of reuse and recycling of procured items and goods (including rentals and leases): 99%

b. Temporary venues

Temporary venues are structured to allow the reuse of materials after the Games as much as possible.

Temporary venues and overlays are planned to ensure uses after the Games and minimise environmental impacts which may occur after the Games.

Target 4 Use of recycled materials

a. Use of recycled materials in constructions

The use of recycled materials is encouraged when constructing facilities. The amount of recycled materials used constructions is kept track of to produce actual values. (Materials and items procured through rentals or leases are not included in temporary venues and overlays.)

b. Use of recycled materials in the procurement of items

The procurement of recycled materials and items is encouraged as much as possible based on the concept of the priority in items procurement. Also, the amount of recycled materials and items procured is kept track of to produce actual values.

c. Other measures

- The use of recycled materials to create the uniform of the staff of the Games
  Sustainability is considered in both materials and the process in making the materials for the uniform of the staff of the Games.

- Closed-loop recycling
  The realisation of resource circulation such as the use of bottle-to-bottle technology for PET bottles is explored in the Tokyo 2020 Games.

Target 5 Use of recycled metal in medals of the Games

"Tokyo 2020 Medal Project: Towards an Innovative Future for All" the project with the involvement of citizens, is now in progress to produce medals given in the Tokyo 2020 Games. In this project, metal materials to produce Olympic and Paralympic medals are obtained from recycled metals including gold, silver, and copper, extracted from mobile phones and small home appliances.

This project is conducted through the participation of citizens to create medals. The project aims to achieve that the whole amount (100%) of the gold used in the medals for the Tokyo 2020 Games will be applied by recycled gold material from such collected used consumer electronic appliances donated by people with Japanese technologies to ensure environmental friendliness.(Details of the project are described in 2.5.2(3) Creation of wider involvement through the project with the public in 2.5 Involvement, Cooperation and Communications (Engagement).)

Target 6 Reuse or recycle of wastes generated from operations of the Games

a. Wastes generated through operations

Wastes generated through the operations* of venues and the Olympic/Paralympic Village are going to be reused and recycled. In addition, as many stakeholders as possible are encouraged to participate in waste reduction by calling for spectators in the Games to segregate their wastes to increase reuse and recycling.

The ratio of reuse or recycle of wastes generated through operation: 65%

*Wastes generated during the operation of the Games such as PET bottles, plastics, papers, and food

b. Reuse and recycling of dishes

Dishes are selected by taking into account of various issues such as the conditions of dining services to realise, characteristics of different dish materials, and facilities required for different types of dishes. Reuse of dishes is thus realised whenever possible. Dishes are recycled when they cannot be reused.

Target 7 Recycle of food waste

It is given the first priority to reduce the amount of the edible part of food waste ,and it comes next to recycle generated food wastes.

At the same time, the operation is going to be planned to ensure proper segregation of food wastes which is the condition of recycling. All the food wastes generated from venues such as the dining halls of the Olympic/Paralympic Village where Tokyo 2020 would directly serve food (where they can control the operation) are going to be recycled.

Target 8 Reuse or recycle of construction wastes

- The recycling and volume reduction ratio of wastes generated from the construction of new permanent venues: 99% or more (the ratio of recycling, reduction, and reused amount compared to the amount of waste generated)
- The ratio of the effective use of soil generated from construction: 99% or more
- Maximum efforts will be made to achieve the above targets concerning temporary venues and overlays, because a large amount of facilities, materials, and goods remain to be removed after the Games.

Target 9 Sustainable use of renewable resources (e.g. Timbers)

Tokyo 2020 is constructing the Village Plaza by actively using timbers. In addition, Tokyo 2020 launched “Operation BATON - Building Athletes’ village with Timber Of the Nation -” that is the project to promote the use of timbers around Japan as the legacy of the Tokyo 2020 Games after the end of the Games.

Also, the Olympic Stadium is constructed so that the warmth of timbers can be felt from every spectator seat by combining the use of timbers and steel frames in the construction. Timbers are also actively used at eaves and roofs on the outside of the stadium as well as indoors to create a woody stadium with Japanese taste to surprise the world. The use of renewable resources including timbers is promoted for venue and equipment used in the Games including the above.

Accompanying the collection of renewable resource, that is biomass resource, deforestation , peat land fire, depletion of valuable ecosystem, and violation of the rights of indigenous people and local residents are pointed out in general. Therefore, Tokyo 2020 is working on using resources harvested in sustainable ways such as by establishing individual sourcing codes for timber, paper, and palm oil. (Details of the Sourcing Code are described in 4.4 Devising and using the Sustainable Sourcing Code.)

Target 10 Reduction of emissions into the environment

a. Reduction of the amount of landfill disposal

Wastes generated in association with the Games will be avoided as much as possible through the above measures. In addition, the amounts of procured items, wastes generated from operations, and construction wastes to be landfilled are going to be kept track of.

b. Reduction of CO_2 originating in wastes

The amount of CO_2 emissions from wastes is kept track of along with measures to mitigate climate change.

2.2.4 Segregation of wastes

Proper segregation of generated wastes is an essential process to promote reuse and recycling. Based on the Guidance for Creating Waste Segregating Labels for Large Events issued by Ministry of the Environment, standardized designs (e.g. colours and pictograms) are used in waste segregating bins so that foreign visitors can easily recognize them. The correct segregating rate will also be improved by making sure that visitors will voluntarily segregate wastes by calling for visitors to support waste segregation.

Proper waste disposal contractors which can also operate with lower CO_2 emissions are to be employed to recycle the segregated wastes.

In addition, for goods used at the Tokyo 2020 Games, in cases where they can serve as commemorative items, they will be utilise by giving away or exhibiting them after use.

2.2.5 Thermal and energy recovery

The recovery of heat from waste incineration (waste-to-energy and other use of heat) is important in realising both recycle-oriented society and low-carbon society as an integrated goal. Energy derived from wastes are being effectively used in recent years such as that waste incineration facilities are functioning as an energy generator of a region.

Wastes which cannot be reused or recycled and must be incinerated are effectively used as much as possible by using the energy for electricity and heat. The use of fossil fuel is thereby decreased, and the carbon load of a region can be decreased.

2.2.6 Proper waste disposal

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

The implementation of waste treatment will be strictly controlled with consideration given to cases of inappropriate reselling of food waste so that wastes are properly disposed of when waste disposal is outsourced to waste disposal contractors.

2.2.7 Management and implementation system

The status of the use of materials and goods purchased or obtained as gifts or donations, the estimate of the amount of generated wastes such as consumables used in the operation of the Games, and the status of their disposal are being controlled from the preparation and operation phase of the Games to the venue demolition and removal phase after the closing ceremony in cooperation with individual FAs, suppliers, local governments, and businesses.

Specifically, we promote to establish an integrated management system of materials and goods starting from their purchase phase, a management system to perform the waste generator responsibility for the disposal of used materials and goods after the Games to properly and thoroughly reuse, recycle, and dispose of wastes and used materials and goods. In addition, we promote to establish systems to ensure smooth operations including training programs and guidelines for those involved with the Games, and develop a close cooperation among relevant personnel so that ensure to reuse, recycle and dispose of properly and smoothly the waste, materials and goods.

Meanwhile, for the entire organisations to efficiently and effectively implement resource management, the system to manage the overall operation needs to be developed along with the development of the system to ensure systematic and technical support including the supply of information concerning the routes of reuse and recycling needed for resource management and the preparation of office manuals. These measures are going to be properly implemented such as by establishing guidelines to promote reuse and reuse and recycling after the Games.

2.2.8 Involvement, cooperation, and communication (engagement)

The understanding and cooperation of the Organising Committee, government agencies, businesses, as well as the general public including volunteers, spectators, and NPOs/NGOs are essential for minimizing the input of new resources into the Games, reducing wastes, and promoting reuse and recycling. Therefore, opportunities are going to be created to facilitate all people involved with the Games including volunteers and spectators to actively participate in and cooperate with the waste reduction efforts and spread the circle of efforts by widely distributing information.

Specifically, we will provide training for workforce associated with the 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 segregation rules at competition venues, by communicating, in an active manner, the Japanese concept of mottainai (sense of avoiding waste) and our efforts to reduce, 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

Satoyama is a Japanese word indicating a simple and traditional rural area consisting of communities, secondary forests around the communities, farmlands and paddy fields, reservoirs, grasslands, and other natural features. As seen in such areas, the people in Japan has been developing and maintaining the fine environment in harmony with various human activities. In coastal areas, the Japanese people have also practiced the integrated management of the land and coast thereby to maintain the proper circulation of materials. The Japanese people have thus enjoyed the gifts from the ocean where rich and diverse ecosystem and the natural environment have been maintained and produced the unique food culture of Japan.

Meanwhile, in each city of Japan, the natural environment such as existing green spaces and rivers, and the green and waterside environment newly created by humans have been mixed. In doing so, the city's unique natural environment is composed. The Heritage Zone of the Tokyo 2020 Games consists of many facilities used as competition venues used in the 1964 Tokyo Olympic Games as well as valuable nature with historic values such as the Imperial Palace, Meiji Shrine, and Shinjuku Gyoen National Garden. Also, the Tokyo Bay Zone extending at the coastal area of Tokyo consists of many marine parks such as Odaiba Marine Park and Kasai Kaihin Park constructed on landfill sites developed after around 1900. Actions to restore and build nature are still continuing today in Tokyo.

Not only governmental agencies, but also private companies, local communities, and individuals have participated in the maintenance and production of greenery and the water environment in Tokyo. In the Tokyo 2020 Games as well, we are going to implement measures involving diverse bodies to realise a comfortable urban environment which exists in harmony with nature. These efforts would contribute to the realisation of a model of a new mature city in which the activities of citizens would improve the urban environment which would keep developing into the future.

Figure: Venue zoning

Goal 6 of SDGs is set to “ensure availability and sustainable management of water and sanitation for all” and Goal 15 to “protect, restore, and produce sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt diversity loss.” Thus, the theme of the Tokyo 2020 Games, “Natural Environment and Biodiversity” is relevant in many aspects of SDGs such as the development of resilient infrastructure and the establishment of sustainable consumption and lifestyle patterns.

* “Resilient city” refers to a city with the ability to absorb, recover from, and prepare for future shocks (economical, environmental, social, and systematical). Sustainable development, well-being and inclusive growth are promoted in such cities.

(Reference: OECD website: http://www.oecd.org/cfe/regional-policy/resilient-cities.htm)

Based on the above, the Tokyo 2020 Games set the goal below:
“City Within Nature/Nature within the City”

Looking forward to the legacy, we will restore and form a rich ecological network through the Games and contribute to the creation of a new urban system that will improve comfort and resilience.

2.3.1 Individual targets to achieve the goal

The following individual targets are set to achieve goals, and specific measures are going to be implemented accordingly.

Target 1 To minimise the environmental load of the Games, enhance the functions of water circulation in the city and while improve the comfort that urban environment can offer

Target 2 To develop the urban environment with the rich ecological network by conserving biodiversity, creating lush greeneries and the water environment, and forming an attractive landscape

Target 3 To minimise the environmental load associated with production, distribution, and other operations of the procurement phase of the Games by paying attention to prevent environmental contamination and protect biodiversity

2.3.2 Measures to be implemented to achieve targets

<u>Target 1 To minimise the environmental load of the Games and improve the functions of water circulation in the city while improving the comfort that urban environment can offer</u>

Japan has the history of causing pollution including air pollution, soil contamination, and water contamination in the process of industrial development and overcoming them through environmental regulations and the development of environmental technologies to satisfy the regulations. The Tama River that runs through Tokyo used to suffer serious contamination. Yet, the river was cleaned up through various measures such as the purification of water in the river, and the water quality improved enough for about ten million sweetfish to return to the river by 2012. The TMG also implemented unique environmental regulations such as strict environmental regulations on diesel cars to reduce impact on the environment such as the atmosphere. Environmental impacts which occur through various activities associated with the operation of the Games such as the construction of venues and transportation are

going to be minimised using advanced environmental technologies of Japan.

Also, the Tokyo 2020 Games are going to be held under intense summer heat. Possible causes of the very hot summer in Tokyo include the effect of climate change and heating through heat island phenomenon which originates in urbanisation. Given these circumstances, Tokyo is now implementing measures to alleviate the heat through mid-to-long-term measures to slow down temperature rise such as the production and conservation of green areas in cities and the reduction of artificial waste heat emissions. Tokyo is further going to improve the thermal environment by implementing measures to alleviate heat that people feel.

In regards to the water environment in Japan, steep terrains cover most parts of the lands in Japan, and a large amount of water tends to instantly flow down a river during a heavy rain. Thus, people in Japan have been using water while mitigating damages caused by water and engaged in recycled use of water such as returning used water to rivers and groundwater from ancient time.

In Tokyo, valuable farmlands which remain in cities, greeneries such as trees planted around residences, and parks and open spaces which are still being constructed by the government and private sector today, are contributing to the infiltration of rainwater into the ground. Comprehensive water management measures are being implemented such as the construction of river systems including reservoirs and sewage systems. In addition, water circulation measures are in place at various levels such as rainwater infiltration systems installed in houses. Measures to further improve the water circulation are also being implemented such as using recycled water created from sewage that is treated with advanced treatment technologies including filtration and ozone treatment for toilet flushing in buildings.

Sophisticated water supply system is also being developed in Tokyo in recent years such as supplying safe and tasty water with advanced water treatment while securing stable water supply which would flexibly respond to rapid increase in water demand caused by urbanisation.

TMG needs to continue its efforts to create advanced water circulation as the host city of the Olympic and Paralympic Games while cooperating with various organisations and people.

Specific efforts are described below.

(Heat management)

The Organising Committee is going to implement heat management measures while cooperating with the TMG and the national government based on Guideline for preventing heat illnesses at summer events established by Ministry of the Environment.

<Venues>

Heat management measures to be implemented upon the construction of new permanent facilities include the reduction of thermal load of buildings by blocking heat on outer walls, installation of effective air conditioning methods, planting trees and grasses on the rooftop and walls of buildings, and the installation of roofs above some of the spectator seats. On the outdoors as well, solar heat-blocking pavement is used on the outdoor spectator areas, and shades are created by keeping existing trees as much as possible.

The Organising Committee is going to explore heat management measures such as creating shaded areas such as tents and installing temporary resting facilities for people waiting in line to enter facilities.

<Roadside events>

The TMG is going to install solar heat-blocking pavement on prefectural roads within main areas such as Centre Core Area by 10 km every year and 136 km in total by 2020. (About 106 km has been completed as of the end of March 2017.) It is also going to provide subsidy to wards and municipal governments which install solar heat blocking pavement around competition venues and sport courses to accelerate the installation.

Ministry of Land, Infrastructure and Transport implements general activities to reduce temperature rise such as urban greening using road spaces and private lands along roads and the installation of pavements with the function to reduce surface temperature rise among other measures.

The TMG is going to trim branches of trees along prefectural roads around venues based on plans, environmental characteristics of the roads, and conditions of the trees to provide as much tree shades as possible such as by spreading the top parts of the trees at necessary areas.

< Around venues>

The TMG supports wards, cities, and businesses which develop and install heat management facilities with advanced technologies in about six areas around venues from fiscal year 2017 to 2019 to accelerate heat management in areas where many spectators gather.

The TMG also supports wards, cities, towns, and villages in Tokyo to install heat management facilities such as ultra-fine mist system, lean-to roofs, solar heat-blocking and water-retaining pavements to accelerate the production of cool spots.

<Distribution of information>

The Organising Committee is going to carefully plan methods to distribute information prior to the Games, to call for attention on the days of the Games, and to call the attention of non-Japanese visitors.

The National Government will measure the thermal environment in competition venues and distribute the outcome of heat stress index measurement(WBGT).

The Organising Committee determines heat management to be conducted during the Games based on the outcome of the investigation.

<Operation of the Games>

The Organising Committee will plan heat management operations including preventive measures such as providing shades and providing drinks and the handling of heat illness patients. The Organising Committee will also plan the development of smooth emergency response systems in venues and areas where lines are formed during the Games in cooperation with relevant organisations and the TMG. In addition, first-responders trained to provide emergency care will patrol the venues and detect early signs of heat illness by actively talking to visitors and spectators.

Meals and menus are also prepared so that people can maintain their appetite during hot summer.

To prepare medical services for non-Japanese patients, the TMG is going to provide training for medical front, develop acceptance system, provide support for acquiring third-party certificates, and expand the service hours of medical translation services.

<Inclusion, participation, and other aspects>

People in Japan have practiced *uchimizu* (water sprinkling) as a practical wisdom continuing since

around the 17th century to sprinkle water on roads and gardens to mitigate summer heat and stay cool. The TMG is hosting *uchimizu* events with local people and local businesses using recycled or reused water to make it a standard courtesy of Tokyo to welcome athletes and spectators around Japan and the world. The Tokyo Organising Committee will plan ways to provide cooperative opportunities in heat management.

(Consideration toward chemical substances, atmosphere, and soil in the Games)

- In terms of constructions, the TMG is voluntarily conducting the Tokyo 2020 Olympics and Paralympics Environmental Assessment to check the environmental impact of facility constructions for the Games. In addition, soils will be examined as necessary based on laws such as the Soil Contamination Countermeasures Act. If any soil contamination which exceeds standards is found, the venue owners will immediately explain the conditions to neighbours and relevant organisations and properly remove and dispose of the contamination without spreading it to steadily continue the construction.
- In regards to transportation in the Games, public transport is used as much as possible while using low-pollution and fuel efficient type vehicles such as fuel cell vehicles. Drivers are notified and educated about eco-driving, the driving to avoid sudden acceleration and brakes to reduce environmental load and CO_2 emissions.
- Low-emission and low-noise type construction machineries as well as machineries which comply with the Act on Regulation, Etc. of Emissions From Non-road Special Motor Vehicles are actively used in constructions to protect the nearby environment. Operators are also encouraged to reduce emissions and noise such as by eliminating unnecessary idling.

(Consideration toward water circulation in the Games)

- New venues and facilities are constructed by effectively using valuable water resources based on the Guideline for Effective Use of Water issued by the TMG. Specific measures include the use of filtration facilities, rainwater, and recycled water (greywater) to suit characteristics and conditions of individual facilities. The planned amount of water used for miscellaneous purposes at new permanent venues is going to be the total of about 1,200 m^3 per day.

  *The estimate based on the planned amount of water used for miscellaneous purposes based on the Tokyo Environmental Planning System for Constructions: Actual amount may vary.
- The TMG and the Organising Committee are going to examine measures to prevent the inflow of the coliform group during rain into water areas at Odaiba Seaside Park used for marathon swimming and triathlon.

(Efforts to create healthy water circulation in cities)

- Kokyo Gaien National Garden exhibit beautiful and symbolic landscapes of Tokyo, the capital city that develops in harmony with lush nature and water along with its history since the 17th century. The moats of Kokyo Gaien National Garden is functioning as the valuable water environment that is serving as the habitat of *Ceriagrion nipponicum*, a threatened species, and *Luciola lateralis*, a rare species in the central part of Tokyo. More people than ever from in and outside of Japan are expected to visit the outer garden of the Imperial Palace during and after the Games as it is also used as the venue. The water environment is therefore being further

improved for the Games. Ministry of the Environment installed a new purification facility in 2013 to improve the water quality of the moats of Kokyo Gaien National Garden. The ministry also started water purification through public offering in 2017 for the Games. In the outer moat located on the outside of the moats of Kokyo Gaien National Garden, the TMG is going to dredge the sediment to improve the water quality and create the good environment as a presentable landscape of the host city.

- The merged sewage system which covers the majority of the central area of Tokyo discharges rainwater containing wastewater into rivers and oceans during heavy rain to protect the city from flooding. Therefore, the TMG is going to construct facilities to retain the total of 1.50 million m^3 of water by the Tokyo 2020 Games to reduce the amount of wastewater discharged into rivers and oceans. The facilities to be constructed include the reservoir to retain especially dirty sewage collected at the beginning of rain and high-speed filter to effectively remove impurities.
- To further improve the quality of treated sewage water discharged into the Tokyo Bay and the Sumida River, the TMG is installing advanced treatment and semi-advanced treatment facilities which can remove more nitrogen and phosphorus, two of the causal substances of red tide, at Water Reclamation Centres. The treatment capacity will be increased to 4.30 million m^3per day in total by 2020.
- The TMG will complete sediment dredging and sand-covering at 15 locations in five rivers including the Sumida River and Shingashi River where the flow volume is small and channels such as the Kachima Channel that can be closed to maintain and improve water quality and prevent odor.
- In addition to the TMG, the national government, related local municipalities, businesses, and citizens organisations also work together to regenerate Tokyo Bay such as through the continuous participation in water quality and species monitoring in the bay.

Target 2 To develop the urban environment with the rich ecological network by conserving biodiversity, creating lush greeneries and the water environment, and forming an attractive landscapes

Green areas in the urban areas of Tokyo became scarce along with the advancement of urbanisation. Therefore, the TMG promoted an inclusive effort to increase greens. About 752 hectare of green areas has been created over a decade after 2007. As a result, the investigation in 2013 found that the ratio of green areas in wards with dense residential neighbourhood in Tokyo (the ratio of land surface covered with green as well as park areas and water surface in the total land coverage in an area) showed an increase for the first time since the start of the investigation.

More wild birds are starting to visit these greens created in the central part of Tokyo. In addition, rich aquatic ecosystem and habitats of water birds and aquatic organisms have returned to or additionally created in the Tokyo Bay. These are the indication that the natural environment is being regenerated in Tokyo. The conservation of biodiversity in the city and its sustainable use needs to be further strengthened toward 2020, the target year set in the Aichi Biodiversity Targets adopted in COP10, the Convention on Biological Diversity.

Meanwhile, many farmlands which remain in Tokyo are not only functioning as the ground for the production of crops but also as a part of the green network to nurture biodiversity with the same level of

functions as parks. They are also functioning in various ways such as the source of pleasure and relaxation in the living environment and the supply of food ingredients and evacuation sites in case of emergencies. While Tokyo is a gigantic city where the population exceeds ten million people, it is also a city with abundant farmlands which is not seen in large cities in Europe and the U.S.

On the other hand, there is a demand to further increase the city functions and attractiveness while reducing the renewal of social infrastructures which are soon expected to become old and require updating. The idea of “Green Infrastructure” is now spreading to the world. Green Infrastructure means to increase the sustainability of cities by turning open spaces into green areas and using various functions of the natural environment such as the infiltration of rainwater into the ground, the production of favorable landscapes, and mitigation of heat island, and disaster management and alleviation to increase the sustainability of cities. With the background of these trends, various organisations and groups are expected to further strengthen their activities to create green areas in cities.

In the Tokyo 2020 Games, the above activities of Tokyo that is starting to become the city within nature need to be presented to the world as the symbol of global sustainability. Tokyo thus has to become a model of large cities which would face similar problems in the future. At the same time, Tokyo is expected to further accelerate these activities.

a. Greening at competition venues

Venue zones are filled with greens and water areas. The protection of existing trees and greens shall be considered for these areas such as avoiding effects on existing trees as much as possible.

Upon creating new green areas, the harmony and continuity between existing trees and parks need to be maintained from the design and planning phase. In addition, tree and plant types must be carefully selected based on the original nature, climate, and atmosphere of the area. At venues developed by the TMG and the Tokyo Organising Committee, tree and plant types are selected to match local conditions based on the Guideline for Selecting Native Varieties upon Planting Trees (May 2014) issued by the TMG to produce favorable habitat and foundation for animals and plans.

(Olympic Stadium)

- The Olympic Stadium is surrounded by the lush forests of the outer garden of Meiji Shrine. The green network connecting the outer garden of Meiji Shrine, Shinjuku Gyoen National Garden, Akasaka Palace, and the Imperial Palace is going to be developed with the Olympic Stadium.
- About 17,000 m^2 of green areas is going to be created through the greening on the ground and rooftops while protecting the current flora and fauna communities such as by transplanting existing tree species.

<Competition venues to be developed by the TMG>

- In addition to keeping the existing trees wherever possible, plants are going to be planted in such a way as to satisfy greening standards of ordinances set by local governments located on individual competition venues.

- At competition venues adjacent to marine parks, the harmony and continuity with the parks are respected. An integrated marine landscape is thus created through the selection of suitable plants for the development sites and planting trees and plants along circumference roads.

<Temporary venues, other facilities, and overlays>

- Sites for temporary venues and overlays are selected while avoiding impacts on nearby environment whenever possible such as by selecting unused lands. At the same time, constructions and developments are conducted while protecting nearby habitats for animals and plants.
- When trees need to be cut down or modified within planned zones, cutting and modification must be minimised as much as possible. At the same time, currently available green areas need to be maintained by transplanting cut trees within the same zones or create new green areas on the ground.
- Plans are created for building sites so that they can be turned into green areas that satisfy greening standards under ordinances of applicable areas after using them in the Games. About 7,600 m^2 of the ground at the Olympic Gymnastic Centre is going to be turned into green zones after the Games.

<Venues of road events>

- Main arterial roads in Tokyo which are used for the Games such as for the marathon and roads in areas around competition venues are going to be properly maintained to create tree shades for athletes and spectators.
- In addition, greens around roads are increased using flowers and plants by placing flowerbeds on boulevards so that citizens, tourists, and visitors can enjoy comfort and beauty.

<Olympic/Paralympic Village>

- The Olympic Village is constructed as a town where people can feel close to water and greens and experience relaxation and comfort to blend in with the green areas around Harumifuto Park in preparation for uses after the Games. When the Games are over, the Olympic/Paralympic Village zones are going to be modified to have about 36,400 m^2 of green spaces on the ground and about 450 m^2 of green rooftops to produce open spaces filled with greens for anyone to relax and enjoy.

b. Production of green areas and water spaces in the city and the development of pleasant landscapes

<Production of the network of water and green with parks and trees on streets>

- The TMG spreads green areas in water spaces around rivers in the course of the planned development of urban parks and green spaces. At the same time, parks are intensively developed to create organic network among trees on arterial roads and greens around rivers to create green spots for people including those who are visiting for the Games to feel close to water and relax there and to further expand the network of water and greens in the city.
- Lush urban spaces are developed in areas where public parks are used as green bases in the central part of Tokyo while preserving existing greens in the parks and the original landscapes and connecting them with open spaces around the parks to provide relaxing spaces for visitors.

- Current conditions of trees along prefectural roads around competition venues are examined to secure tree shades by expanding top branches, improve attractiveness by creating flowerbeds, and produce beautiful landscapes of roads by redeveloping boulevards.
- Public marine parks located in Tokyo Bay Zone are developed to be linked with various land uses such as uses as neighbourhoods, for cultural activities, and sport events even after the Games to improve the attractiveness of coastal areas. Also, the marine parks are developed while maintaining continuity with surrounding areas and greens to increase the function of the network of water and greens. Colourful spaces are also going to be created by planting colourful flowers and plants in parks frequented by many tourists.

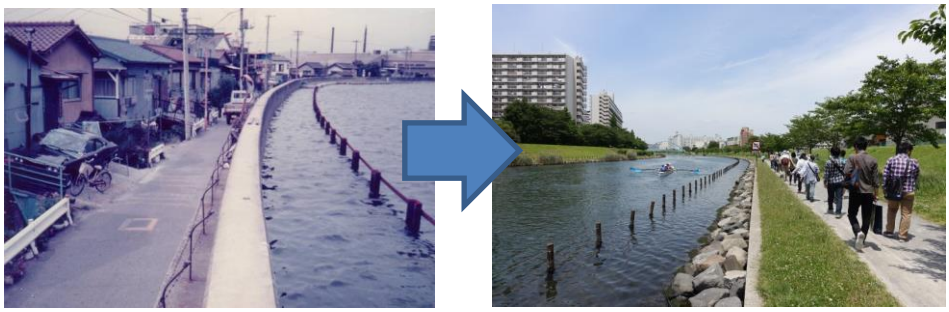
Column: Production of pleasant water spaces through river development

The north part of Tokyo Bay Zone where many competition venues are going to be constructed is the Koto Delta formation between the Arakawa River and Sumida River. Most part of these areas used to be under the ocean or low wetlands, which were reclaimed during the development of the city of Edo. The collective name for the eleven rivers flowing through these areas is the Koto Inland Rivers.

The Koto Delta zone suffered frequent floods and land subsidence caused by the pumping of groundwater that increased with industrial development. To protect the area from water-related problems, the construction of levees, water gates, and the reinforcement of embankments were conducted, which consequently created distances between rivers and towns and people. In addition, the rivers became no longer inhabitable for organisms due to the lowered water quality through industrialization and urbanisation.

Thanks to many years of efforts, Koto Inland Rivers today are safer in terms of flood control, and the water quality has also improved. People can also come closer to the river on the east side of the Koto Inland Rivers and enjoy by the river.

These areas are expected to become spaces for people to gather and enjoy by the water using the opening of Tokyo Sky Tree in 2012 and the Tokyo 2020 Games as opportunities. The river development is therefore now in progress using various functions of the river such as the continuity of spaces and uses as recreation sites while ensuring safety.



Koto Inland River under river development to create water-friendly spaces (former Naka River)

<Development of landscapes filled with flowers and greens>

- The TMG encourages greening to mitigate heat island phenomenon and preserve biodiversity. TheTMG is also promoting activities to decorate cities with flowers in the Tokyo 2020 Games through the Tokyo Greening Project with Flowers and Plants to support the planting of trees and flowers by businesses and the Flower City Project to increase flowers and greens as wards, cities, towns, and villages plant flowers and plants in cooperation with communities and private organisations.

<Production of green areas by the private sector>

- The TMG mandates the submission of Greening Plan from constructions in a property that is 1,000 m^2 or larger (250 m^2 or larger for properties owned by the national government or local government) in urban development. These buildings are advised to prepare plans to create green spaces on 20% or more on the rooftop of the buildings and 20% or more on empty spaces.
- In addition, high quality greens are produced in all spaces of the city to create the network of water and greens covering the central part of Tokyo through the development of open spaces

using various urban development systems and the improvement of areas crowded with wooden houses.

- The TMG supports the development of citizens' farms and projects to turn residential areas into farmlands done by wards, cities, and towns to preserve farmlands in cities and benefit from multiple functions of the farmlands.

Column: Production of relaxing spaces filled with greens by private companies

The construction of large buildings and large-scale development are being conducted in the central areas of Tokyo in recent years. The "Open Space", which is open to the public but privately-owned area, are increasing within such construction and development areas. TMG has set Greening Policy for Public Open Spaces and is encouraging companies to create high quality green spaces. Many companies have been creating high quality green areas to maintain continuity with nearby green areas and develop good sceneries. One of such efforts is the Fukutoku Forest at 2-chome, Nihonbashi Muromachi.

Nihonbashi, located in the Heritage Zone of the Games, was designated as the starting point of five major roads back in the Edo period (15th to mid-17th century). The area developed as the site that connected the Edo period and today while protecting the long-inherited traditions. The area is also playing a role as the bridge that connects green areas of the outer garden of Meiji Shrine, Shinjuku Gyoen, Akasaka Imperial Property, and Imperial Palace to Tokyo Bay Zone at the coastal area.

Fukutoku Forest is the green area surrounding shrines and approaches to the shrines. The green area is regarded as satoyama, the Japanese traditional border zone between mountains and arable lands. Fukutoku Forest is developed to express nature, tradition, and prosperity of satoyama by planing representative plants of satoyama such as Cerasus jamasakura, Acer palmatum var. matsumurae, Ilex macropoda, and Styrax japonica which are deciduous broad leaved trees and the oak tree that has a close tie with shrines. In addition, Cerasus itosakura, Prunus mume f. pendula, and Torreya nucifera, an evergreen needle - leaved tree are also planted to express the beauty which becomes highlighted by desolate winter landscape.

In addition to Nihonbashi, the area developed in harmony between traditional culture and people, areas with high quality green areas and relaxing spaces for people are being developed within cities thanks to the efforts of private companies in urban redevelopment projects in the central parts of Tokyo. Pleasant urban spaces are thus being produced every day in harmony with the history, landscape, and surrounding environment of Tokyo.

Fukutoku Forest

Greens that decorates scenic places

c. Regeneration of the urban natural environment and conservation of biodiversity

<Conservation of biodiversity in prefectural parks>

- Among 31 prefectural parks which function as the bases of local ecosystem, intensive environmental development is going to be conducted at 18 parks by 2020. At the same time, species monitoring and investigation are conducted to ensure proper species management.
- Conservation of rare species is also conducted at other prefectural parks based on characteristics of individual parks to secure habitats and nurturing grounds for various species in the entire prefectural parks.

<Conservation of biodiversity in marine parks>

- The TMG is going to use marine parks adjacent to the Olympic/Paralympic Village and many competition venues as the base of biodiversity conservation in coastal areas which continues after the Games. The environmental conservation functions of the marine parks are improved while utilising the coastal features through the cooperation with various stakeholders and organisations. Especially, the tidal flats of Kasai Kaihin Park are visited by many wild birds. Thus, TMG is trying to register this area as the wetland under the Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat.
- In addition, tidal flat, sandy beaches, and rocky beaches at Tokyo Port Wild Bird Park and nearby areas are going to be expanded to preserve and create the natural environment which would function as the habitat of various species.
- Moreover, for the period after the Games, the proper maintenance of trees along pedestrian malls and the development of near-nature embankments at parks along channels are implemented to create habitats and traveling spaces for organisms.

<Promotion of greening that takes biodiversity into consideration>

- The TMG is going to encourage ecosystem-friendly greening using the following measures: the Guideline for Selecting Native Species upon Tree Planting that provides methods to select native species for a given area and matters to pay attention to upon planting trees and plants; the Species Friendly Greening Assessment Tool for quantitative assessment of ecosystem-friendly level upon the establishment of greening plans; and the Edo Trees and Plants Registration System in which green areas where private organisations are planting native species of Tokyo are registered and released. The greening using native plant species of a given area is thereby implemented in areas where plants are being planted including Olympic and Paralympic venues. Also, the habitat for animals and plants including birds and insects is created in cities by expanding ecological network to secure habitat for organisms by connecting urban greens with ecosystem-friendly vegetation.

<Measures to combat alien species>

- Many materials are transported from around the world into Tokyo during the Tokyo 2020 Games. Thus, measures to block the entry of alien species which affect the health of ecosystem and people as well as agriculture, forestry, and fishery become necessary. In case the entry of these alien species is found, the TMG immediately implements necessary measures with the national

government, wards, cities, towns, and villages including measures to terminate them through capturing and collecting and raising public awareness toward alien species.

Column: Kasai Kaihin Park

The TMG has developed 800 hectares of marine parks at 38 locations so far and promoted the preservation of water environment and increased green spaces at the coastal areas.

Kasai Kaihin Park, located adjacent to the canoe and slalom venues, is one of them. Kasai Kaihin Park is a marine park consisting of two artificial tidal flats including East Nagisa and West Nagisa which are both about 800 m in lengths. The park has about 411 hectare of water areas.

East Nagisa is now an environmental preservation area where water birds and shellfish are inhabiting. West Nagisa is now functioning as a valuable area where people can enjoy nature such as clam digging and shell gathering. The TMG is now working with NPOs and other organisations to create beaches which can be used for swimming for a long time. The regeneration of culture to play in the ocean and local communities near ocean are now being created through these activities.

Today, TMG is trying to register the two tidal flats as the wetland under the Ramsar Convention.

Sea bathing experience event

East Nagisa and West Nagisa

d. Production of ground for people to enjoy nature in the city

<Production of relaxation spaces in parks>

- The TMG is creating the gathering of people by hosting attractive events to entertain visitors from around the world in the entire parks of Tokyo. The park maintenance and management are also being improved to create the environment filled with beautiful trees and clean facilities with which people can enjoy comfortable times.
- In addition, marine parks are being developed to maintain continuity with the nearby areas and greens. Park courses and open spaces facing the ocean are also created to expand areas where people can feel close to the ocean. Cycling courses and running courses are also created so that people can safely and comfortably enjoy sports while feeling the attractiveness of the ocean.
- Harumi area and North Ariake area where the Olympic/Paralympic Village and multiple competition venues are going to be developed to improve attractiveness and facilitate the gathering of people for periods after the Games. Especially, Ariake Shinsui Marine Park is going to be developed as a park in the integrated project with Ariake Arena after the Games. The attractiveness of these areas is also going to be improved from the perspective of the development of water environment such as the development of sandy beaches and rocky shores.
- Marine parks adjacent to the Olympic/Paralympic Village are going to be used as relaxing spaces for international athletes to jog in shades of trees while enjoying the seaside landscapes during the Games. In addition to the mitigation of heat island phenomena, the marine parks are going to be developed as a park which functions as the oasis for citizens to enjoy nature on a daily basis. In addition, Harumifuto Park is developed as an evacuation site in case of emergencies for the safety of the citizens after the Games.

Target 3 To minimise the environmental load associated with production, distribution, and other operations of the procurement phase of the Games by paying attention to prevent environmental contamination and protect biodiversity

a. Prevention of contamination through the production and distribution of items procured for the Games and the management of chemical substances

- Products and services (including constructions) to be procured must be in compliance with relevant environmental laws and Sourcing Code. Materials and items produced with properly managed chemical substances must be selected to prevent air, water, and soil contamination. Resources obtained from forests and oceans must be ones which are collected and cultivated using resource conservation measures.
- Recycled items and raw materials containing recycled resources should be selected as a priority whenever possible. If reuse or recycling cannot be done, wastes must be properly disposed of. In addition, the Tokyo Guideline for the Procurement of Environmentally Friendly Items (public construction projects) and other guidelines should be observed to use environmentally friendly items such as using crushed stones generated from concrete masses whenever possible to reduce environmental load from construction projects.

b. Resource consumption in the Games to preserve biodiversity

- The procurement of timber, wooden products, paper, agricultural and fishery products for the preparation and operation of the Games is promoted to minimise their effects on biodiversity throughout the supply chains based on the Sourcing Code. Specifically, suppliers and licensees are encouraged to reduce impacts on biodiversity and ecosystem through production methods designed to conserve rare organisms and minimise effects on organisms and their habitats. In addition, the use of illegally logged timber and raw materials originating in threatened species should be avoided from the perspective of mitigating deforestation and forest degradation (the spread of efforts toward zero deforestation). Furthermore, Tokyo 2020 will revise the Sourcing Code whenever necessary based on the PDCA cycle via appropriate process.
- Meanwhile, organic farming would greatly improve the natural circulation function of agriculture. At the same time, it drastically reduces environmental load caused by agricultural productions. Thus, the use of organically produced agricultural crops is recommended in the Sourcing Code.
- In addition, the use of agricultural products, forestry products, and fishery products produced in Tokyo and Japan is encouraged to increase the benefit of multiple functions of forests, farming villages, and fishery villages in local communities.
- Furthermore, in procurement of agricultural, livestock and fishery products, efforts such as food safety, environmental conservation and worker safety are required from the viewpoint of ensuring sustainability. As a method to verify these requirements, relevant certification schemes, such as GAP* certification are adopted. The Ministry of Agriculture, Forestry and Fisheries promotes efforts to expand the implementation of and obtainment of the certification schemes such as GAP, taking advantage of the Games. Under these circumstances, Fukushima, Iwate and Mie prefectures have declared themselves to promote such efforts.
- Moreover, the TMG is going to actively promote the use of certificates designated in the Sourcing Codes for agricultural, forestry, and fishery products to realise sustainable agriculture, forestry, and fishery and the supply of foods in the Games. Especially, the TMG has newly established a new “Tokyo GAP certificate system” taking into consideration characteristics of urban agriculture for agricultural products and encourage farmers to implement GAP activities.

*GAP (Good Agricultural Practice): The process management method to ensure sustainability such as food safety, environmental conservation and worker safety in agricultural production.

2.3.3 Management and implementation system

This field includes activities conducted by the Organising Committee and other activities including measures implemented by the national government and the TMG. In addition to activities conducted during the Games, these activities include ones which start with the Games and ones which remain for the long term as the legacy of the Games such as the recovery and development of ecological networks. The Organising Committee is committed to properly check the progress of these activities at various organisations and groups from the planning phase of the Games and the completion of the Game. The committee will also summarise outcomes at the end of the Games to make the findings useful for continuous activities after the Games and for continuous improvement.

2.3.4 Involvement, cooperation, and communication (engagement)

Trees and plants in parks and roads in Tokyo have been maintained through the participation of many people. Awareness raising activities such as biodiversity education through nature encounter are also being conducted.

Ariake Shinsui Marine Park that is going to be turned into a park with Ariake Arena after the Games is going to be developed through the participation of citizens. The park will also be used as the ground of environmental education after it is completed and opened.

Sea Forest, the competition venue for sailing, canoe, and equestrian, will be used to hold events such as tree planting events with the participation of citizens and events held in cooperation with companies and NGOs to develop it as the forest of cooperation.

At Kasai Kaihin Park, sea bathing experiences will be continued while cultivating culture which coexists with the blessing of the ocean such as fishing, clam digging, and seaweed production with NPOs and private businesses to widely publicise the area as the port that coexists with nature to people in Japan and the world.

The TMG will entertain visitors from in and outside of Japan while protecting valuable ecological network and increasing green spaces to create lush urban environment by decorating places crowded with citizens and visitors with flowers and greens which reflect four seasons and culture of Japan using the Tokyo Donation for Flowers and Plants to nurture flowers and plants in Tokyo with the cooperation of citizens and businesses.

The Organising Committee will explore opportunities and means of cooperation using the activities and knowhow of the private sector such as private businesses and organisations to spread the circle of participation and cooperation.

Column: Artificial forests in Tokyo, from Meiji Shrine to Sea Forest

In the central part of Tokyo, greens produced through the participation and cooperation of many people are creating valuable green spaces in cities. One of the symbolic green areas is the forest of Meiji Shrine that was completed in 1920.

The development of the forest of Meiji Shrine started in 1915. About 100,000 trees were donated from around Japan, and a total of about 110,000 young people worked in the forest to plant the trees.

The forest of the village shrine celebrates the 100th anniversary since its enshrinement in the same year as the Tokyo 2020 Games. The forest area expands to about 700,000 m^2 today which is now being loved as the relaxing space for citizens while functioning as the habitat of many insects and organisms.

Then, the forest that is additionally and artificially created through the involvement of many people is the Sea Forest, the venue for boats, canoe, and equestrian.

Sea Forest is one of marine parks that are now under construction developed with the concepts of “forest development for resource circulation” and “cooperative forest development through the participation of citizens.” The development of the parks are being planned on land reclaimed by about 12.30 million tons of wastes generated from 23 wards of Tokyo from 1973 to 1987 and soil generated from constructions. Sea Forest Project is the project to plant young plants on the garbage mountain that is as high as 30 meters to turn it into a beautiful forest.

From 2007 to 2015, about 23,000 citizens and private businesses of Tokyo planted about 240,000 trees including *Castanopsis sieboldii*, *Machilus thunbergii*, and *Celtis sinensis* through young plant nursery projects and tree planting projects. The young plants used for the tree planting were nurtured from acorns at elementary schools in Tokyo. Some of them were also purchased using donations from citizens and businesses.

Now that tree planting has been completed, the green network is being developed by connecting major green areas of Tokyo starting at Sea Forest that is connected to Odaiba, Harumi, Tsukiji, the Imperial Palace, Shinjuku Gyoen National Garden, and Meiji Shrine with trees along arterial roads including Loop Road #2 connecting the Olympic Village and Olympic venues. These green areas will be further developed using the legacy of the Tokyo 2020 Games in the future so that they will grow into rich forests where many people will gather, and many species will be nurtured.

Tree-planting project with the participation of citizens

Sea Forest with grown trees

2.4 Consideration of Human Rights, Labour and Fair Business Practices

The Olympic Charter states in the Fundamental Principle 4 and 6 of Olympism that practice of sport is a human right and the enjoyment of the rights and freedoms set forth in the 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.

The Olympic Agenda 2020 also states that the host city contract should include clauses with regard to the Fundamental Principle 6 of the Olympic Charter as well as to environmental and labour-related matters and Host City contracts after Paris 2024 includes compliance with the UN Guiding Principles on Business and Human Rights (“Guiding Principles” hereafter) . The Elmau Summit in 2015 strongly supported the Guiding Principles and welcomed efforts of developing national action plans. This action plan is being developed in Japan at present.

Moreover, IPC sets it as an ultimate goal to create inclusive society in which everyone can respect diversities, express personalities and abilities and can play an active part by its promotion of the Paralympic Movement, activities that enlighten the public through values and meanings brought by the Paralympic sports and encourage them to make society better. Engagement with human rights issues is widely discussed in the Sustainable Development Goals (SDGs) adopted in 2015, particularly Goal 4, Education and Goal 5 Gender. Many companies and groups are promoting efforts to protect human rights based on these Principles.

However, Japan and other countries, regardless of developed or developing, still have issues related to human rights, such as discrimination and harassment of race, nationality, sex, sexual orientation and impairment/disability and hate speech (expression of hatred) about them. Various efforts have been made around the world, but these problems surely have an impact on mega sport events even today. In working environment, such as sites of resource extraction and production, we also have issues of child labour and forced labour inside and outside of Japan. In our nation, we are facing problems of excessive labour and working poverty. Additionally, fair practices need to be secured to prevent bribery and falsified products.

To tackle with these issues, the Games Foundation plan released in February 2015 states ‘diversity and harmony’ as one of ‘basic concepts’ in the Games vision and Games should be prepared and operated respecting ‘diversity’ and ‘inclusion’. As Olympic and Paralympic Games are the world’s biggest sport events where athletes all over the world participate, they should be open to everyone, allowing diverse people to meet and mutually understand their diversity and everyone to play an active role. Therefore, it is significantly meaningful that the Tokyo 2020 Games are prepared and operated aligning with the Guiding Principles considering diversity ahead of other events.

The Tokyo 2020 Games aim to firmly incorporate diversity and inclusion (D&I) into every area of Games operation to respect human rights of all people involving with the Games following the Olympic Charter.Tokyo 2020 will operate the Games in accordance with the UN’s Guiding Principles on Business and Human Rights. It seeks to prevent or mitigate adverse human rights impacts that are caused through the Games-related activities, even if they are outside of management control area of Tokyo 2020 (i.e. other organisations or individuals). The Tokyo 2020 Games aim to avoid causing or contributing to any discrimination such as race, colour, sex, sexual orientation, language, religion, political or impairment/disability, never encourage any issues of child labour, forced labour and excessive labour through the entire Games-related activities, even indirectly. As the Guiding Principles including human rights due diligence covers adverse human rights impacts with which Tokyo 2020 is involved either through its own activities or as a result of its business

relationships, Tokyo 2020 aims to influence on other organisations to make the Games as a whole responsible for human rights, as the Games are prepared and operated in cooperation with various organisations and parties under different management control such as the national government, Tokyo Metropolitan government, related local municipalities, international sport associations, Olympic and Paralympic Committees of other countries and Olympic Broadcasting Services.

The Games will seek to establish culture of diversity and inclusion in Japanese society as one of Games legacies.

Tokyo 2020 also ensures fair business practices without corruptions or anti-competitive deals.

Embracing 'Celebrating Diversity – Inspiring Inclusive Games for Everyone', where everyone can play an active role, as an goal, Tokyo 2020 will implement various effort considering human rights and labour issues and necessary actions to deal with problems in cooperation with various parties.

Goals for Consideration of Human Rights, Labour and Fair Business Practices

"Cerebrating Diversity – Inspiring Inclusive Games for Everyone -"

2.4.1 Individual Targets to Achieve Goals

Towards the 'Celebrating Diversity – Inspiring Inclusive Games for Everyone', individual targets are set for respect for human and labour rights and handling of problems and specific actions will be taken.

(1) Actions respecting human and labour rights

a. Implement actions for consideration of human right of all parties involving with the Games

Target 1: Raise awareness of D&I and provide training opportunities for staff

Target 2: Cooperate with stakeholders (partners)

Target 3: Secure accessibility (develop and implement guidelines)

Target 4: Promote actions at Games facilities and operations

b. Implement proper consideration of labour

Target 5: Secure diverse human resources

Target 6: Implement and secure flexible working

Target 7: Provide appropriate working environment

Target 8: Implement necessary training

c. Implement consideration of fair business practices

Target 9: Ensure procurement considering fair business practices

d. Implement consideration actions in procurement

Target 10: Develop the Sustainable Sourcing Code and properly implement it

(2) Measure to handle problems

Target 11: Prepare a communication system and properly understand the situation of human rights

consideration issues

Target 12: For management control areas of Tokyo 2020[*1], proactively request correction to abusers and protect victims

Target 13: Establish and properly implement the Grievance Mechanism for the Sustainable Sourcing Code

Target 14: For areas not under Tokyo 2020's direct management control[*2], promptly communicate with responsible organisations/parties and request for their actions

*1&2: Refer to (2) of 2.4.2 Measures to be implemented to achieve targets

2.4.2 Measures to be implemented to achieve targets

(1) Actions considering human rights and labour

a. Actions for consideration of human rights and labour of all people involving with the Games

v. Raise awareness of D&I and provide training opportunities for staff

- Try to penetrate D&I at the Tokyo 2020 Games by understanding concepts and importance of 'what is D&I' and 'why we should engage in D&I' and increasing opportunities to be aware of D&I
- Prepare environment where people involving in the Games could respect each other and exert their utmost abilities. For that, make opportunities (training) to recognize various talents participate in the Tokyo 2020 Games, know their differences and understand each other.

<Specific measures>

- Develop and implement D&I strategies
- The board members send messages; Staff members' declaration; Lectures by outside experts
- Create and distribute D&I handbook
- Deliver training (training on equality of people with disabilities, LGBT, customer-facing support and languages)

vi. Cooperation with stakeholders (partners)

- Promote information sharing with partners at all organisations involving in the Tokyo 2020 Games
- Promote activities jointly taken by Tokyo 2020 and stakeholders
- Spread information about efforts made by Tokyo 2020, Tokyo Metropolitan government and partners utilising websites

vii. Secure accessibility (develop and implement guidelines)

- Based on the Tokyo 2020 Accessibility Guidelines developed and announced in March 2017, we will prepare facilities including competition venues, ensure information availability, publications and communications for example, and deliver training to Games staff and volunteers.
- By preparing the environment ensuring equal accessibility to the Games, we will make a contribution to establishment of inclusive society, where people regardless of disabilities mutually respect their personalities and characters.
- More specifically the Guidelines will be applied to following areas:

- Areas in all venues designated by Tokyo 2020 for activities and movements of stakeholders who require special accessibility consideration.
- Parts of access routes to all venues will be designated by Tokyo 2020 with consideration of traveling of stakeholders who require special accessibility consideration (Accessible Routes).

・ Tokyo 2020 asks owners and administrators of the designated facilities to build and renovate their facilities based on plans aligning with the Guidelines so that they will fulfill requirements as permanent facilities to be legacies in the future. However, if it is difficult to set up the permanent environment, Tokyo 2020 ensures service levels based on the Guidelines by adding temporary equipment and providing flexible assistance (e.g. transit support using dedicated vehicles and assistance by volunteers).

viii. Promote efforts at Games facility and during operation

・ The Olympic Stadium and new permanent venues of Tokyo Metropolitan government built in Tokyo are designed aligning with the Act on Promotion of Smooth Transit, etc. of Elderly Persons, Disabled Persons, etc., the Act on Buildings Accessible and Usable by the Elderly and Physically Disabled (barrier-free building regulation), the Act on Building Welfare City of the Tokyo Metropolitan Government and the Tokyo 2020 Accessibility Guidelines.
・ Specifically, at the Olympic Stadium all seats will be accessible by people in wheelchairs, and seats are allocated so that a person in a wheelchair and his or her companion can sit side by side; large-size elevators, multi-purpose toilets and signage are equipped.
・ At venues, food considering religions and cultures will be served to athletes (e.g. halal dishes, vegetarian dishes) according to operational requirements and prayer spaces will be prepared for athletes (for Christians, Jews, Moslems, Buddhists and Hindus).
・ Include activities reflecting D&I in the Games Operation Plan and support implementation by each functional department through frameworks such as working groups.
・ Create environment where the Games are operated making all athletes, operation staff members, volunteers and spectators feel included without experiencing discrimination or harassment such as race, colour, sex, sexual orientation, gender identity, language, religion, political opinion, status in society, age, impairment/disability
・ Respect freedom of media, expression and assembly concerning the Games
・ Try to secure labour rights of all workers involving in construction of the Games facility regardless of their nationality

ix. Other efforts

・ The national government conducts procurement with companies promoting good work-life balance based on the Act on Promotion of Women's Participation and Advancement in the Workplace (2015, law no. 64) and other related parties make the same efforts in procurement.

b. Appropriate consideration actions for labour

Provide the environment where staff members can work safely, and volunteers can participate in activities with a sense of security.

Specific measures to be adopted are as follows:

i. Avoid discrimination and harassment to make a workplace that allows various people to actively

work

Create a workplace where no discrimination or harassment occurs, such as race, colour, sex, sexual orientation, gender identity, language, religion, political opinion, status in society, age, and impairment/disability where and various employees' talents are developed regardless of nationalities and are facilitated to feel included.

ii. Implement and secure flexible and diverse working styles

Towards diverse and flexible working styles fitting with individual's work and life stages, we will improve systems such as tele-working and flexible hours in addition to ongoing effort such as staggered commuting hours and try to reduce overtime .

iii. Prepare proper working environment

In addition to promoting activities to reduce overtime to secure well-being of workers and good work-life balance, we will promote utilisation of a consultation centre.

Moreover, we will act in compliance with the law to deliver the environment where Tokyo 2020's staff can work, and volunteers can participate in activities free from undue concern.

iv. Deliver training properly

To secure proper workplace management aligning with the labour laws, we will educate the managers through training

c. Measures considering fair business practices

In preparing for and operating the Games, unfair transactions will never be allowed. Tokyo 2020 defines fair business practices as one of the most important themes when delivering training about sustainability to Tokyo 2020's staff, volunteers and employees of other related projects to ensure fair business practices.

Products and services that Tokyo 2020 procures are required to be supplied in a sustainable manner throughout the supply chain, respecting human rights and considering fair business practices (for details, refer to 4. 4). 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.

Therefore, Tokyo 2020 encourages companies in Japan to make efforts for sustainable sourcing, in cooperation with TMG which implements various initiatives including Business Chance Navi 2020.

Additionally, Tokyo 2020 will implement appropriate consideration of human rights and labour of Games staff and volunteers.

d. Implement measures for procurement

Tokyo 2020 developed the Sustainable Sourcing Code to require suppliers, licensees and their supply chains to give due consideration to sustainability for production and distribution of products and services Tokyo 2020 procures.

From the perspective of not only compliance with relevant laws and regulations, but also reduction of environmental impacts, respect for human rights, ensuring of appropriate working conditions, and promotion of fair business practices, the Sourcing Code established standards for sustainability, and procedures for ensuring compliance. Furthermore, the Code defines individual codes for timber, agricultural products, livestock products, fishery products, paper and palm oil to ensure consideration for sustainability at the production stage.

Tokyo 2020 will revise the Sourcing Code whenever necessary based on the PDCA cycle via appropriate process.

(2) Measures to handle problems

a. Prepare a communication system and properly understand the situation of human rights consideration issues

Based on UN's Guiding Principles on Business and Human Rights, Tokyo 2020 sets up a system under a designated section in charge to grasp issues of human rights and labour.

Tokyo 2020 addresses adverse human rights impacts with which it is involved. Besides, the Games are prepared and operated with collaboration with external parties that Tokyo 2020 does not have direct management control, such as the national government, Tokyo Metropolitan government, related local municipalities, international sport associations and Olympic Broadcasting Services.

> Management control area of Tokyo 2020:
> Tokyo 2020 (paid staff, volunteers), its contractors (service providers), those who related to Tokyo 2020's supply chains and spectators in venues
>
> Areas not under Tokyo 2020's direct management control (i.e. other related organisations and parties participating in the Tokyo 2020 Games):
> Tokyo Metropolitan government, Government of Japan, related local municipalities, IF (International Federation), NOCs/NPCs (National Olympic /Paralympic Committees of each country), OF/PF (Olympic /Paralympic Families), athletes, marketing partners, OBS (Olympic Broadcasting Services), rights holders (broadcast businesses that have broadcasting rights of Olympic and Paralympic Games), press and schools

Issues of human rights and labour could happen in these parties or areas controlled by these parties. Tokyo 2020 seeks to mitigate adverse human rights impacts caused under other related organisations and parties participating in the Tokyo 2020 Games, even if Tokyo 2020 has not contributed to those impacts, by establishing a system to notify such responsible parties whenever it finds such issues and to appropriately encourage them to take actions, for example.

b. For management control areas of Tokyo 2020, proactively request correction to abusers and protect victims

For human right issues caused in the management control areas of Tokyo 2020, it takes proper actions; for instance, if a spectator abuses human rights, it requests him or her to address the conduct and makes the spectator leave the venue or transfers him or her to the police if he or she refuses to address the situation. It also takes an action to protect victims.

c. Establish and operate the Grievance Mechanism for the Sustainable Sourcing Code

Tokyo 2020 has established the Grievance Mechanism for accepting and properly dealing with reports of non-compliance with the Sourcing Code. This mechanism is based on the concept of the "Remedy" stated in the United Nations Guiding Principles on Business and Human rights and intended to resolve cases based on mutual agreement by facilitating constructive discussion among parties concerned.

d. For areas not under Tokyo 2020's direct management control, promptly communicate with responsible organisations/parties and request for their actions

When Tokyo 2020 knows any human rights or labour issues happening related to external organisations and parties, it first notifies them and then appropriately encourages them to take actions whenever necessary.

(3) Involvement, Cooperation and Communications (Engagement)

It is necessary that all parties get involved in and cooperate with each other to implement these actions in order to prepare and operate the Tokyo 2020 Games without any discrimination such as race, colour, sex, sexual orientation, gender identity, language, religion, political opinions, social status, age, impairment/disability or any involvement with issues of child labour, forced labour and excessive labour directly or indirectly and to leave diversity and inclusion to Japanese society as a legacy of the Games.

For this, the Tokyo 2020 Games implement and communicate actions in cooperation with various groups such as the Sponsors' Sustainability Network, international organisations such as ILO and NGOs and labour organisations in Japan and the world.

Column: Promotion of Decent Work in cooperation with ILO

Tokyo 2020 and International Labour Organisation (ILO) signed a memorandum of cooperation for the Tokyo 2020 Games in April 2018. This is the very first time that Olympics and Paralympics Organising Committees to conclude a memorandum with ILO.

ILO is a UN agency consisting of representatives of the government, labour and management of 187 member states aims to promote international labour standards and Decent Work (work with satisfaction respects right of the human person) through them.

The Sustainable Sourcing Code of Tokyo 2020 requests suppliers for commitments aligning with international labour standards such as respect for freedom of association and the right of collective bargaining, ban on child labour, ban on forced labour and ban on discrimination based on the Declaration of Principles concerning Multinational Enterprises and Social Policy of ILO.

Tokyo 2020 and ILO jointly promote international labour standards, conduct surveys on advanced actions of corporations, provide technical advice and develop and distribute educational tools to companies, promoting Decent Work in production and distribution of purchased goods.

2.5 Involvement, Cooperation and Communications (Engagement)

Because delivering the Games considering sustainability requires engagement and cooperation of the public, volunteers and spectators, as well as efforts from stakeholders of the Games, it is essential to promote actions based on participation and cooperation through interactions and training of various parties beyond countries and generations.

As SDGs define ‘partnership’ as the Goal 17, we must build society ensuring diversity and inclusion, where various bodies can participate in.

Following individual actions are set to achieve this goal, to create the Tokyo 2020 Games open to everyone through participation and cooperation of entire society as well as to share such expertise and experience with people in society.

Goals for Involvement, Cooperation and Communications

“United in Partnership & Equality – Inspiring Inclusive Games for Everyone -”

2.5.1 Individual Targets to Achieve Goals

To achieve the Games open to everyone through participation and cooperation of many people, following individual targets are set to implement specific actions.

Target 1: Promote preparation and operation of the Games through collaboration and engagement of various parties

- Cooperation with Sponsors (establish and operate a sponsors’ sustainability network
- Cooperation with other parties

Target 2: Inclusion of a wide range of people through talent development

- Promote volunteer activities by Staff
- Utilise and nurture volunteers
- Promote inclusion through environment education

Target 3: Create broad inclusion through projects with the public

- Implement project in which the public participate
- Promote inclusion and cooperation through education
- Support and promote voluntary inclusion and cooperation

Target 4: Provide communication to encourage understanding and actions for consideration of sustainability

- Provide information to spectators
- Provide information to Games stakeholders
- Provide information to the media

2.5.2 Measures to be implemented to achieve targets

(1) Promote preparation and operation of the Games through collaboration and engagement of various parties

Tokyo 2020 aims to make the Tokyo 2020 Games more sustainable through collaboration and engagement with various parties, the national government, Tokyo metropolitan government, related local municipalities, groups such as NPOs/NGOs, opinion leaders and the private sector such as Olympic and Paralympic Sponsors in developing plans and implementing measures.

Specifically, the following programmes with various parties have been launched. More programmes are under consideration.

a. Establish and operate the Sponsors Sustainability Network

Tokyo 2020 established the Sponsors Sustainability Network (SSN hereafter) as a place for cooperation of Sponsors to exchange ideas and reflect various views into operation plans, towards the specification of the plans and continuous improvement. Consideration of sustainability at the Tokyo 2020 Games will be maximized through this network.

Today 43 of 60 Olympic sponsors and 41 of 52 Paralympic sponsors have joined the SSN. Various projects to maximize sustainability consideration are planned based on exchanged ideas about resource management, such as maximization of reuse and recycle of procurement items, and CO2 emission measures. Since the necessity of consideration of sustainability in processes of the Games, such as procurement, should be shared and understood by all parties involved, advanced consideration and leading actions of SSN member sponsors are shared to wide range of stakeholders via the website as guiding examples of sustainability consideration.

b. Implement the Tokyo 2020 Accessibility Guidelines

Tokyo 2020, the government of Japan (Cabinet Secretariat) and the Tokyo Metropolitan Government have established the Accessibility Council and reflected opinions of a wide range of participating stakeholders such as related ministers, municipal governments, sports associations for people with disabilities, associations of people with disabilities, opinion leaders and related industry groups on the Guidelines.

When discussing accessible routes based on the Guidelines, council members observe the accessibility of routes between stations that spectators are assumed to use and the venues with association members and opinion leaders; their opinions will be considered in the future discussion as well.

c. Include and cooperate with the promotion networks of sustainability volunteers mainly consisting of junior and senior high school students established by the Ministry of the Environment

In August 2017, junior and senior high schools interested in active and pragmatic volunteer activities in San-Tama areas of Tokyo metropolitan area signed the Memorandum of Promotion of improvement of Global Environment and Talent Development, aiming to make a contribution to sustainable implementation of the Tokyo 2020 Games as sustainability volunteers and nurturing children who promote 3Rs after the Games.

This action was caused by joining volunteer training programmes of 3Rs Talent Development Conference Leveraging the Tokyo 2020 Olympic and Paralympic Games of the Ministry of the Environment, and the Conference is preparing 3Rs Talent Development Platform to establish and support a sustainability volunteer network mainly for high school students; we will align and cooperate with such activities.

d. Cooperation with other parties

We will promote actions in cooperation with various parties, such as municipal governments that offer Pre-Games training camps and vocational schools and schools other than collages.

Column: Volunteers of the Tokyo 2020 Games

Games volunteers managed by Tokyo 2020 will provide service to the spectators, support for Games operation and the media at Games facilities such as competition venues and Olympic Village. Volunteers managed by host cities, Tokyo Metropolitan Government and other cities will provide guidance for sightseeing and transport to travelers from Japan and the world, guide spectators at public transport stations closest to the competition venues.

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.

(2) Creation of involvement through education

To prepare and operate the Games considering sustainability through collaboration and engagement, it is essential that everyone participating should understand the concept of “sustainability” and how it is relevant to the Tokyo 2020 Games in the first place and furthermore how it could influence on 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.

Education and volunteer training should be implemented effectively and efficiently through cooperation with NPOs/NGOs which have knowledge about such activities.

Specifically, the following programmes have been launched. More programmes are under consideration.

a. Volunteer training by Tokyo 2020 and Tokyo Metropolitan Government

Tokyo 2020 and the Tokyo Metropolitan Government will jointly provide training that is necessary for both Games volunteers and city volunteers such as knowledge about Olympic and Paralympic Games because it is essential for volunteers to understand the importance of each role, acquire necessary knowledge and create unity among them as they work as volunteers.

Additionally, various plans will be implemented to increase benefits of volunteering.

For example, an idea to invite volunteers to events related to Olympic and Paralympic Games held by the Tokyo Metropolitan Government and Tokyo 2020 as well as an action to make volunteers feel joy of networking such as increasing interactions among them via the social media are discussed. Moreover, actions necessary for safe volunteer activities including a measure against heat as the Tokyo 2020 Games will be held in the summer will be implemented .

b. Cooperate and coordinate with the 3Rs Talent Development Conference Leveraging the Tokyo 2020 Olympic and Paralympic Games of the Ministry of the Environment

Cooperate with the Ministry of the Environment which discusses development of 3Rs talents triggered by the Tokyo 2020 Games in promoting participation of young people who understand sustainability through education such as sustainability programmes for the Games volunteers which is provided as a part of environmental education.

c. Tokyo Metropolitan Education Commission provides ‘education for sustainable development’

Environment conservation efforts, such as “School action *mottainai* operation, are promoted at public schools in City of Tokyo as a part of Olympic and Paralympic education, and ‘education for sustainable development’ will be reinforced.

d. Other programmes to raise awareness by Tokyo 2020

Tokyo 2020 will implement seminars for its own staff and staff of the Games-related organizaions to increase awareness of sustainability. It also supports seminars and symposiums for wider people, which are organized by other parties to promote activities considering sustainability and inclusion and cooperation. Ambassador Olympians, Paralympians and other athletes are expected to help such awareness campaigns.

(3) Creation of wider involvement through the project with the public

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. 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.

Specifically, following activities are undertaken:

a. Implement Tokyo 2020 Medal Project: Towards an Innovative Future for All

Through this project, gold, silver and bronze medals for use at the Tokyo 2020 Games will be manufactured from gold, silver and copper metal materials recovered and extracted from used consumer electronic appliances such as used mobile phones, so-called “urban mines”, donated by people across Japan. This project which is supported by people’s effort will be a good demonstration of ways to build a more sustainable society using resources more efficiently.

Activities are implemented considering following social backgrounds and meanings.

<Project Background and Purpose>

Scientific surveys suggest that the estimated remaining amount of gold and silver-containing resources stored on ground is in the ratio 7: 3 compared to that of underground. The demand for metal materials from the ground resources called “urban mines”, i.e., consumer electronics such as mobile phones, is increasing every year.

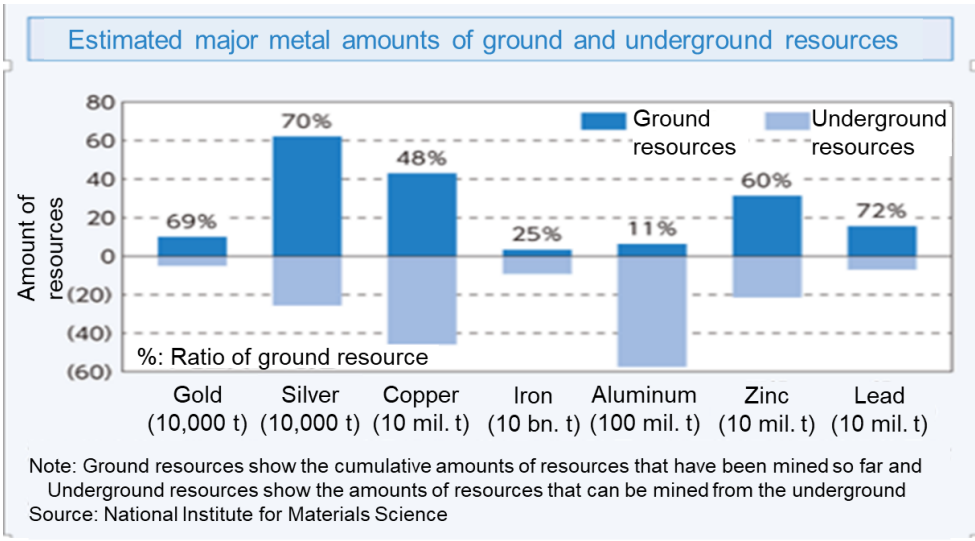


Figure: Ratios of major metals of ground to underground

Table: Content of of gold and silver

Type	Content	Content per ton
Gold mine	5 ppm	5 g
Cell phones	340 ppm	340 g
Silver mine	250 ppm	250 g
Cell phones	1400 ppm	1400 g

The 68 times more gold and 5.6 times more silver is included in the cell phone in terms of content ratio compared to the underground mine. Utilisation of urban mines is promoted globally as the urban mines contain far more minerals than the underground resources (mines).

In Japan, although laws and regulations to promote recycle of useful precious metal such as the Act on Promotion of Recycling of Small Waste Electrical and Electronic Equipment enacted in 2013 have been prepared, only less than 20% of cell phones discarded for instance is recycled in a year. Implementation of this project could raise attention of Japanese citizens again to recycling and stimulate recycle of useful resources abandoned in Japan, eventually becoming one of the legacies.

Under such circumstances, “Tokyo 2020 Medal Project: Towards an Innovative Future for All” aims to achieve that the whole amount (100%) of the gold used in the medals for the Tokyo 2020 Games will be applied by recycled gold material from collected used consumer electronic appliances donated by people through making the best use of Japanese technological expertise as well as with support from many Japanese citizens towards utilising eco-friendly recycled metals to create medals.

Through these activities, the Tokyo 2020 Games encourage the Japanese to re-discover the value of recycling (recycled products can maintain the quality) and be a start point of reuse and recycle of useful resources in Japan, a part of which remain unused now. This could be a great legacy if the Games can promote circulation of useful precious metals in the nation. Tokyo 2020 is calling for extensive support from the Japanese citizens to gather enough amount of precious metals for this project in cooperation with NTT DoCoMo, the Japan Environmental Sanitation Centre, the Ministry of the Environment, the Tokyo Metropolitan Government and other organisations.

b. Cooperate with colleges and universities

The Olympic Agenda 2020 discusses the importance of “Engage with youth (interact with the youth) ”.

In June 2014, Tokyo 2020 started to conclude collaboration agreements with colleges and universities based on the spirit of Olympism and the recommendations of the Agenda 2020 to produce various opportunities for the youth to participate in the Games and eventually spread a new movement among them. Currently approximately 800 schools all over the nation take part in this collaboration.

The college collaboration produces many activities following three key concepts: education, experience and legacy.

- Share information about Olympic and Paralympic Games (e.g. holding communication and briefing meetings)
- Provide seminars and special lectures on ideals and history of Olympic and Paralympic Games and plans and operation of the Tokyo 2020 Games (Visiting Lecture Programmes)
- Implement events and programmes to build up momentum for participation in the Tokyo 2020 Games

This college collaboration provides lectures on sustainability where the young people can learn and think about it and encourages them to actively participate in events about sustainability as a part of the Tokyo 2020 Medal Project: Towards an Innovative Future for All and the Tokyo 2020 Participation Programme.

c. Implement Tokyo 2020 Nationwide Participation Programmes

Tokyo 2020 Nationwide Participation Programme is a mechanism whereby various events and projects related to Action & Legacy Plan concepts can use authorised logo marks to promote engagement activities when people want to conduct initiatives aimed at building momentum for the Games and the creation of post-Games legacies. 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.

Participation Programmes falls into 8 categories including sustainability and the total number of approved programmes is 13,239 as of September 10, 2017 since October 2016.

The number of Participation Programmes by sustainability legacy concept is as follows.

Legacy concept	Number of approved programmes
Create sustainable low-carbon/decarbonised cities	4
Implement sustainable recycling	7,615
Create a comfortable city environment considering water, trees and biodiversity	46
Create a society considering human Rights, labour and customary practices	3
Inclusion and cooperation towards sustainable society	0
Total	7,668

*Approved programmes are as of September 10, 2017

*7,595 approved programmes of 7,615 for “Implement sustainable recycling” are for the Tokyo 2020 Medal Project: Towards an Innovative Future for All.

d. Promotion of efforts through the Tokyo 2020 education program

Following actions are implemented as a part of the Tokyo 2020 education program:

- We provide Olympic and Paralympic education material to school teachers. The official Paralympic material of International Paralympic Committee (IPC), ‘I’m POSSIBLE’ describes Paralympic values and Para-sports through classroom lectures and hands-on activities; one of its goals is that children understand many differences such as disability, race, language and gain strength to cooperate, support and help each other.
- For vote for the mascot by elementary school children around the nation, children learn ideals of Olympic and Paralympic Games.
- ‘Tokyo 2020 Olympic and Paralympic Flag Tour’ events visiting elementary schools around Japan, children enjoy learning Olympic and Paralympic values and attractions easily by directly interacting with athletes.

e. Implement carbon offset through participation

We will promote activities to increase awareness of the climate change and CO_2 reduction through participation and cooperation of various parties.

f. Promotion of other efforts

Tokyo 2020 promotes environmental behaviour among other related businesses such as 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)

(4) Information sharing to raise public awareness of the importance of sustainability

Taking advantage of the Olympic and Paralympic Games' 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.

The Tokyo 2020 Games will actively communicate sustainability activities such as cutting edge environmental technologies used for the Games, behaviour and key messages considering sustainability and sustainable life styles and contribute to achieve global sustainability aligning with Olympic Movement and Paralympic Movement.

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.

Meanwhile, Tokyo 2020 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.

More specifically, the Tokyo 2020 Games 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.

Also, Tokyo 2020 aims 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.

3. Action Plans and Progress Status by Parties (Action Progress Report)

This section describes progress of activities by responsible organisations and actions to be done in the future to deliver organisational management of sustainability measures for the Tokyo 2020 Games and effective and appropriate implementation.

First, progress confirmation is ensured by identifying roles and activities by each organisation in activities including carbon management.

Moreover, for preparation of venues happening prior to the Games, sustainability activities made in the past are identified and future are listed here.

3.1. Actions by Functional Areas and Agencies

To maximize CO_2 reduction measures, CO_2 emissions and reduction measures and overview of measures against climate change and resources management of each organisations (by each Functional Area) are listed as follows and a system to continuously manage progress will be implemented.

3.1.1 Carbon Management

Specify organisations involved in measures against carbon footprint emissions and reduction and build a system to continuously manage progress. Sustainability Functional Area (SUS FA) supports activities of each FA within a framework set aligning with ISO20121.

Carbon Management Table (overview)

Carbon footprint item						Management items concerning reduction measures
Target			Related organisations	Emissions (BAU) (CO_2; 1,000 t)	Emissions (after review of venues) (CO_2; 1,000 t)	
Construction (by venue)	Newly constructed venues	Tokyo Met. Gov. new venues	Tokyo Metropolitan Government	511	337	● Strategic venue planning to maximize use of existing venues and public transport method ● Securing eco-friendly functions of venues - Adopt passive design - Use amount of recycled material ● Adopting recyclable energy facilities at permanent venues - Adoption and utilisation of solar power and heat and geothermal heat ● Venue construction actively using energy-saving technologies - Evaluation based on Tokyo Metropolitan ● Government's Green Building Program - CASBEE evaluation
		Olympic Stadium	Government of Japan/ JSC	465	312	
		Olympic Village	Tokyo Metropolitan Government	446	610	
		New venues (temporary parts)	Organising Committee	95	88	
	Temporary venues		Organising Committee	85	104	
	Existing permanent venues		Organising Committee Other facility administrator	58	128	
	Sub total			1,660	1,579	
Operation		Energy consumption	Organising Committee (NRG)/Tokyo Metropolitan Government/Other facility administrators	53	54	● Amount of used renewable hydrogen power except for vehicles Energy management for venue operations and adoption and utilisation of BEMS at new and existing venues Optimization of lighting and room temperatures of office facilities ● Status of adoption and utilisation of BEMS - Maximize use of recyclable energies - Amount of used renewable electricity during operations - Offset amount by green power certificate when renewable energy cannot be used
		Overlay	Organising Committee (VNI)	149	150	● Maximize recycling of goods to reduce CO_2 emissions - Utilisation status of goods rentals and leases and reuse status ● Maximize procurement of highly eco-friendly goods - Use amount of highly eco-friendly goods
		IT service	Organising Committee (TEC)	37	37	● Maximize recycling of goods to reduce CO2 emissions - Utilisation status of goods rentals and leases and reuse status ● Maximize procurement of highly eco-friendly goods - Use amount of highly eco-friendly goods
	(Other operation)	Various ceremonies	Organising Committee (CER)	17	17	● Maximize adoption of highly energy efficient equipment and devices - Adoption status of highly energy efficient devices ● Maximize procurement of highly eco-friendly goods - Use amount of highly eco-friendly goods ● Maximize recycling of goods to reduce CO_2 emissions - Utilisation status of goods rentals and leases and reuse status ● Maximize reduction of greenhouse gas other than CO_2 (e.g. HFCs) - Adoption status of devices using natural refrigerants
		Torch relay	Organising Committee (OTR)	3	3	
		Security	Organising Committee (SEC)	8	8	
		Medical care	Organising Committee (MED)	3	3	
		Internet	Organising Committee (TEC)	2	2	
		Promotion/Publicity	Organising Committee (COM)	18	18	
		Logistics	Organising Committee (LOG)	5	5	● Status of effort in logistics with less environmental load
		Commemorative coin	Organising Committee (LIC)	1	1	● Understand status of coin issue
		Medal	Organising Committee (PRT)	0.1	0.1	● Progress status of "Making medals using urban mines"
	Stakeholders	Catering/Accommodation/Uniform/Office use/Equipment for stakeholders	Organising Committee (FNB, ACM, Administration, PEM)	233	233	● Maximize adoption of highly energy efficient equipment and devices - Adoption status of highly energy efficient devices ● Maximize procurement of highly eco-friendly goods - Use amount of highly eco-friendly goods ● Maximize recycling of goods to reduce CO_2 emissions - Utilisation status of goods rentals and leases and reuse status ● Maximize reduction of greenhouse gas other than CO_2 (e.g. HFCs) - Adoption status of devices using natural refrigerants
		Stakeholders' transport	Organising Committee (TRA, NCS)			● Promote transport with less environmental load - Passenger cars: ratio of fuel-efficient and low-pollution vehicles: 100% - Average CO_2 emission factor of Games related cars
		Sub total		530	532	
Spectators		Accommodation	Organising Committee (TKT)	159	159	● Education about reduction of CO_2 emissions
		Food and beverages (inside Games venues)	Organising Committee (FNB)	41	41	● Maximize adoption of highly energy efficient equipment and devices - Adoption status of highly energy efficient devices ● Maximize recycling of goods to reduce CO_2 emissions - Utilisation status of goods rentals and leases and reuse status ● Maximize reduction of greenhouse gas other than CO_2 (e.g. HFCs) - Adoption status of devices using natural refrigerants
		Procurement (official goods)	Organising Committee (LIC)	46	46	● Maximize recycling of goods to reduce CO_2 emissions - Utilisation status of goods rentals and leases and reuse status
		Spectator transport	Organising Committee (TRA, TKT)	575	575	● Education about use of public transport
		Sub total		821	821	
Total				3,011	2,932	

(For reference)

Functional Area（FA）List		
	English	Abbreviation
1	Accommodation	ACM
2	Accreditation	ACR
3	Arrivals & Departures	AND
4	Brand Protection	BRP
5	Brand, Identity & Look of the Games	BIL
6	Broadcast Services	BRS
7	Business Development	BUS
8	Ceremonies	CER
9	City Activities & Live Sites	LIV
10	City Operations	CTY
11	Cleaning & Waste	CNW
12	Communications (including Digital Media and Publications)	COM
13	Communications, Coordination & Command/Control	CCC
14	Culture	CUL
15	Doping Control	DOP
16	Education	EDU
17	Energy	NRG
18	Event Services	EVS
19	Finance	FIN
20	Food & Beverage	FNB
21	Government Relations	GOV
22	IF Services (included under Sport)	INS
23	Information & Knowledge Management	IKM
24	Language Services	LAN
25	Legacy	LGY
26	Legal	LGL
27	Licensing	LIC
28	Logistics	LOG
29	Marketing Partner Services	MPS
30	Medical Services	MED
31	NOC & NPC Services	NCS
32	Olympic & Paralympic Family Services (including Dignitary Programme and Protocol)	OFS,PFS, DIP,PRT
33	Operational Readiness	OPR
34	Paralympic Games Integration	PGI
35	People Management	PEM
36	Planning & Coordination	PNC
37	Press Operations	PRS
38	Procurement (including Rate Card)	PRC,RTC
39	Risk Management	RSK
40	Security	SEC
41	Signage	SIG
42	Spectator Experience	SPX
43	Sport	SPT
44	Sustainability	SUS
45	Technology	TEC
46	Test Events Management	TEM
47	Ticketing	TKT
48	Torch Relay	OTR
49	Transport	TRA
50	Venue Management	VEM
51	Venues & Infrastructure (including Venue Development and General Infrastructure)	VNI
52	Villages Management	VIL

3.1.2 Roles of Each Parties in Climate Change and Resources Management

To promote measures against climate change and management of resources, FAs and organisations bear following roles and perform PDCA process, planning, execution and confirmation. Roles will be reviewed and changed on a regular basis (for FA names, refer to 3.1.1).

FA/Department/Agency		Climate Change Measures	Resources Management Measure
For all FAs		Reduce CO_2 emissions by energy saving efforts in the office	Reduce waste produced from the office and operations
Paralympic Games Integration Office	PGI	-	Minimise wastes in transition from Olympics to Paralympics (look/items)
Administration	LGL	-	Legal support for resource management area
	PEM	Control and manage waste to produce uniforms	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce CO_2 emitted to produce uniforms for Games stakeholders	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
		Reduce CO_2 by rental and leasing services of items	Utilise rental and leasing services
		Reduce environmental burden (CO_2) via procurement following the Sourcing Code	Utilise recycled material for stakeholders' uniforms
			Minimise use of packing and wrapping materials, disposal containers and plastic bags
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
			Support sustainability volunteers
	RSK	-	Support measures against risks of resource management
	SUS	Support CO_2 reducing measured by each function	Support resource management of each function (develop process plans to recycle them after the Games and provide technical information on 3Rs)
		Manage and control overall CO_2 emissions	Estimate the amount of waste and obtain actual data and implement and manage 3Rs for procurement items
		Influence on accommodation business	Discuss reprocess waste such as pet bottles produced during the Games operations into recycled resources
		Support procurement of renewable electricity	Discuss recycling of food waste
		Carbon offset (official credit/renewable electricity/public participation)	Develop unified signs for trash sorting
		Communicate environmental technologies (back yard tours/communication at events)	Reduce waste through participation and cooperation of participants of competitions and events
		National movement to reduce CO_2	Inform sorting rules and promote understanding of 3Rs
			Provide sustainability training to the staff
	Administration	Reduce CO_2 by rental and leasing services of items	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce environmental burden (CO_2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Utilise rental and leasing services
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
	Integrated coordination	-	Support coordination with the Tokyo Metropolitan Government and other municipal governments about resource management
	Coordination of use of lands and facilities	-	-
Planning and Finance	CER (Opening and Closing Ceremonies dept.)	Reduce CO_2 by rental and leasing services of items	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce environmental burden (CO_2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
		Discuss reducing CO_2 in use of items and electricity	Utilise rental and leasing services
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
			Minimise use of packing and wrapping materials, disposal containers and plastic bags
	CUL	Reduce CO_2 by rental and leasing services of items	Implement and manage 3Rs by vendors for procurement items and estimate the amount of waste and obtain actual data

FA/Department/Agency		Climate Change Measures	Resources Management Measure
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Utilise rental and leasing services
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
			Minimise use of packing and wrapping materials, disposal containers and plastic bags
	EDU	-	-
	FIN		Utilise rental and leasing service
			Support the reused item market
	LGY	-	-
	PRC/RTC	Reduce CO2 by rental and leasing services of items	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Utilise rental and leasing services
	Coordination	Reduce environmental burden (CO2) via procurement following the Sourcing Code	Manage items from procurement to disposal
			Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Produced wastes: sort, process and manage wastes considering recycle/reuse
	Planning	-	-
	Tokyo 2020 approval promotion dept.	-	-
Communications and Engagement	COM	Reduce CO2 by rental and leasing services of items	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Utilise rental and leasing services
			Ensure proper management of wastes
			Resort and process wastes considering recycle
			Recover heat from waste that cannot be reused or recycled
			Media communication about resource management
	DIG	Reduce CO2 by rental and leasing services of items	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Utilise rental and leasing services
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
	PRS	Reduce CO2 by rental and leasing services of items	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Utilise rental and leasing services
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
	PUB	Reduce CO2 by rental and leasing services of items	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Utilise rental and leasing services
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
	Coordination	-	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
	Business	Reduce CO2 by rental and leasing services of items	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Utilise rental and leasing services
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
			Support contribution of procurement items to museums

FA/Department/Agency		Climate Change Measures	Resources Management Measure
Marketing	BIL	Reduce CO2 by rental and leasing services of items	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Utilise rental and leasing services
			Minimise wastes in transition from Olympics to Paralympics (look/items)
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
	BRP	Reduce CO2 by rental and leasing services of items	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Utilise rental and leasing services
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
	BUS	-	-
	LIC	Manage and control emissions from licensed goods	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Discuss reduction of CO2 emissions from licensed goods	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
		Reduce CO2 by rental and leasing services of items	Utilise rental and leasing services
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Minimise use of packing and wrapping materials, disposal containers and plastic bags
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
	MPS	Reduce CO2 by rental and leasing services of items	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Utilise rental and leasing services
			Minimise use of packing and wrapping materials, disposal containers and plastic bags
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
	TKT	Reduce CO2 by rental and leasing services of items	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
		Carbon offset programmes by ticket holders	Utilise rental and leasing services
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
	Coordination	-	-
	DIP/PRT	Reduce CO2 by rental and leasing services of items	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Utilise rental and leasing services
			Create medals from urban mines
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
International Relations	LAN	Reduce environmental burden (CO2) via procurement following the Sourcing Code	Manage items from procurement to disposal
			Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Sort and process wastes considering recycle
			Ensure proper management of wastes
			Sort, process and manage wastes considering recycle/reuse
	NCS	Reduce environmental burden (CO2) via procurement following the Sourcing Code	Manage items from procurement to disposal
		Promote and confirm airline carbon offset programmes via NOCs/NPCs of all counties/regions	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Sort and process wastes considering recycle

FA/Department/Agency		Climate Change Measures	Resources Management Measure
			Ensure proper management of wastes
	OFS/PFS	Reduce CO2 by rental and leasing services of items	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Utilise rental and leasing services
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
Sports	SPT/INS	Manage and control emissions CO2 from Competition venues	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce CO2 by optimization and minimizing venue plans such as changing venues	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
		Reduce CO2 by rental and leasing services of items	Utilise rental and leasing services
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Utilise existing venues
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
Games Operations	ACR	Reduce CO2 by rental and leasing services of items	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Utilise rental and leasing services
			Sort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
	BRS	Support for management and control of CO2 from broadcasting services	Implement and manage 3Rs for Procurement Items by FAs and wasted items through collaboration projects of OBS and RHB and estimate the amount of waste and obtain actual data
		Discuss reduction of CO2 from broadcasting services	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes and communicate OBS and RHB to do the same
		Reduce CO2 by rental and leasing services of items	Utilise rental and leasing services
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Sort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
	CCC	Reduce CO2 by rental and leasing services of items	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Utilise rental and leasing services
			Sort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
	CER (Victory Ceremonies)	Reduce CO2 by rental and leasing services of items	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Utilise rental and leasing services
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
	DOP	Reduce CO2 by rental and leasing services of items	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Utilise rental and leasing services
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
	FNB	Manage and control emissions CO2 from food and beverages	Estimate the amount of waste and obtain actual data and implement and manage 3Rs for procurement items
		Promote environmental consideration for CO2 reduction by caters	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
		Reduce CO2 from utilising food from neighbouring areas	Utilise rental and leasing services

FA/Department/Agency		Climate Change Measures	Resources Management Measure
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Effort to recover heat from waste that cannot be reused or recycled
			Control production of food waste
			Recycle food waste as a resource
	IKM	Reduce environmental burden (CO2) via procurement following the Sourcing Code	Manage items from procurement to disposal
			Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Sort and process wastes considering recycle
			Sort, process and manage wastes considering recycle/reuse
			Ensure proper management of wastes
	LIV	Manage and control CO2 emissions from Live Sites	Implement and manage 3Rs of vendors for procurement items and estimate the amount of waste and obtain actual data
		Discuss reduction of CO2 from Live sites	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
		Reduce CO2 by rental and leasing services of items	Utilise rental and leasing services
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
	MED	Reduce CO2 by rental and leasing services of items	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Utilise rental and leasing services
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
	OPR/TEM	Reduce CO2 by rental and leasing services of items	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Utilise rental and leasing services
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
	OTR	Manage and control CO2 emissions from Torch Relay	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Discuss reduction of CO2 from Torch Relay	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
		Reduce CO2 emissions by selecting appropriate cars for Torch Relay	Utilise rental and leasing services
		Reduce CO2 by rental and leasing services of items	Resort and process wastes considering recycle
			Ensure proper management of wastes
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Recover heat from waste that cannot be reused or recycled
	PNC	-	-
	SPX	Reduce CO2 by rental and leasing services of items	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Utilise rental and leasing services
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
	Coordination	-	-
	Planning	-	-
	Integrity	-	-
Games Venue Management, Transportation and Accommodation	ACM	Manage and control CO2 emissions from accommodations	-
		Communicate with accommodations to take measures to reduce CO2	
	CNW	Manage and control CO2 emissions in disposal of waste	Estimate the amount of waste and obtain actual data and implement and manage 3Rs for procurement items

FA/Department/Agency		Climate Change Measures	Resources Management Measure
		Reduce CO2 via promoting eco driving	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
		Reduce CO2 via efficient transport	Utilise rental and leasing services
		Reduce CO2 by rental and leasing services of items	Resort and process wastes considering recycle
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
			Process waste such as pet bottles produced during the Games operations considering 3Rss
			Recycle food waste
			Unify sorting signs
			Inform sorting rules
	CTY	Reduce CO2 by rental and leasing services of items	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Utilise rental and leasing services
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
	EVS	Reduce CO2 by rental and leasing services of items	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Utilise rental and leasing services
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
			Reduce waste through participation and cooperation of participants of competitions and events
	GOV	-	-
	SIG	Reduce CO2 by rental and leasing services of items	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Utilise rental and leasing services
			Minimise wastes in transition from Olympics to Paralympics (look/items)
			Sort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
	VEM	Manage and control CO2 emissions from venues	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Save energies and reduce CO2 via lighting and air condition management	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
		Reduce CO2 by rental and leasing services of items	Utilise rental and leasing services
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Resort and process wastes considering recycle
		Reduce CO2 emissions by preventing CFC leak at the time of removal	Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
	VIL	Manage and control CO2 emissions from Athletes' Village	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Save energies and reduce CO2 via lighting and air condition management	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
		Discuss reduction of CO2 related to recycled hydrogen of Fukushima (Athletes' Village)	Utilise rental and leasing services
		Discuss reduction of CO2 from non-CFC refrigerants	Resort and process wastes considering recycle
		Reduce CO2 emissions by preventing CFC leak at the time of removal	Ensure proper management of wastes
		Reduce CO2 by rental and leasing services of items	Recover heat from waste that cannot be reused or recycled
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	

FA/Department/Agency		Climate Change Measures	Resources Management Measure
	Fire prevention coordination	-	-
Security	SEC	Reduce CO2 by rental and leasing services of items	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Utilise rental and leasing services
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
Technology Services	TEC	Manage and control CO2 emissions from technologies	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce CO2 by rental and leasing services of items	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Utilise rental and leasing services
		Promote paperless operations utilising IT	Resort and process wastes considering recycle
		Utilise meeting rooms and optimize personnel transportation by adopting online meetings	Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
			Promote paperless operations utilising IT
			Reduce asset investment by promoting cloud services
Venues	NRG	Manage and control CO2 emissions from energy	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce CO2 emissions by controlling emergency electricity and utilising commercial electricity	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
		Reduce CO2 emissions by procuring power efficient and electricity saving products, materials and low pollution construction machines (for Games venues)	Utilise rental and leasing services
		Save energies and reduce CO2 via lighting and air condition management	Resort and process wastes considering recycle
		Save energies and reduce CO2 via managing energy using BEMS and smart meters	Ensure proper management of wastes
		Reduce CO2 by obtaining green electricity and heat certifications	Recover heat from waste that cannot be reused or recycled
		Reduce CO2 by gaining renewable electricity	
		Promote use of recyclable energies (bio fuel/hydrogen/solar power)	
		Reduce CO2 by rental and leasing services of items	
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	
	VNI	Manage and control CO2 emissions from venue infrastructure	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce CO2 by utilising construction materials considering environment preservation	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
		Reduce CO2 by using recycled materials	Utilise rental and leasing services
		Reduce CO2 emissions by procuring power efficient and electricity saving products, materials and low pollution construction machines (for Games venues)	Reusable materials and structures for temporary facilities after the Games
		Reduce CO2 by using non-CFC refrigerants	Reuse of materials of temporary venues
		Reduce CO2 emissions by preventing CFC leak at the time of removal	Utilise recycle material for constructions
		Reduce CO2 by creating tree shades	Utilise eco-materials for venues constructions
		Reduce CO2 by building sun blind	Minimise use of packing and wrapping materials, disposal containers and plastic bags
		Reduce CO2 by indicating the CO2 level	Sort and process wastes considering recycle
		Reduce CO2 by rental and leasing services of items	Ensure proper management of wastes

FA/Department/Agency		Climate Change Measures	Resources Management Measure
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Recover heat from waste that cannot be reused or recycled
		Manage and control emissions at temporary venues, Overlay and facilities	
		Reduce CO2 by optimization and minimizing venue plans such as changing venues	
		Manage and control emissions at temporary venues, Overlay and facilities	
Transport	TRA	Reduce CO2 by rental and leasing services of items	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
		Save energies and reduce CO2 via utilising public transport	Utilise rental and leasing services
		Shuttle bus for spectators: Save energies and reduce CO2 via using HVs and FCVs as much as possible	Resort and process wastes considering recycle
		Save energies and reduce CO2 via traffic demand management (TDM) and realise efficient transport	Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
		Support and manage CO2 emissions from Games related vehicles	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Games related vehicles: Save energy and reduce CO2 by introducing low-energy and low pollution FCVs and HVs	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
		Promote eco driving and reduce CO2 emissions	Utilise rental and leasing services
		Reduce CO2 by rental and leasing services of items	Resort and process wastes considering recycle
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
	AND	Reduce CO2 by rental and leasing services of items	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
			Utilise rental and leasing services
			Resort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
	LOG	Manage and control CO2 emissions from logistics	Implement and manage 3Rs for procurement items and estimate the amount of waste and obtain actual data
		Reduce CO2 by eco driving	Procurement: purchase products considering resource saving from the procurement process or producing no or small wastes
		Reduce CO2 emissions by panning efficient transport	Utilise rental and leasing services
		Reduce CO2 by rental and leasing services of items	Minimise use of packing and wrapping materials, disposal containers and plastic bags
		Reduce environmental burden (CO2) via procurement following the Sourcing Code	Sort and process wastes considering recycle
			Ensure proper management of wastes
			Recover heat from waste that cannot be reused or recycled
Tokyo Metropolitan Government		Adopt recycled power facilities and energy saving technologies at venues	Promote using environment friendly and reused materials for constructions
		Reduce environmental burden via procuring eco-friendly goods	Reduce environmental burden by procuring environment friendly items
		Use renewable electricity for venue operation (cooperation with the Organising Committee)	Support reuse of procurement goods after the Games
		Save energies and reduce CO2 by conducting traffic demand management (TDM) and utilising fuel cell buses	Promote 3Rs via projects including Medal Project
		Promote smart energy cities such as using LED	
Government of Japan		Adopt power generators using recyclable energies and advanced energy saving technologies for venues	Promote using environment friendly and reused materials for constructions

FA/Department/Agency	Climate Change Measures	Resources Management Measure
	Use low-carbon energies (partial use at the sites) and low-environment burden materials	Reduce environmental burden by procuring environment friendly items
	Promote decarbonisation within a host country framework	Promote decarbonisation within a host country framework
Other facility administrators (including municipal governments)	Promote and manage CO2 reduction activities *Roles are added or removed according to future adjustment and progress	Promote and manage resource management activities *Roles are added or removed according to future adjustment and progress

3.2 Venue-related Activities

3.2.1 Background

The Venue Plan for the Tokyo 2020 Games set two zones: Heritage Zone, succeeding the legacies of the Tokyo 1964 Games and Tokyo Bay Zone representing future of the city. The concept of the Venue Plan, 'Infinite excitement' comes from these two oval zones that intersect at the Olympic Village, forming an infinity symbol and embodies inexhaustible passion ignited by world's top athletes, infinite potentials of the next generation and legacies to be passed down to the future generations forever.

Figure: Venue zoning

Competition venues fall into three groups. First group is the existing venues such as venues with the long history used for the Tokyo 1964 Games and competition venues outside of Tokyo Metropolitan area provided by municipal entities. Second is newly constructed permanent venues to become new legacies that are necessary for urban life even after the Games. The last group is temporary venues built only for the Games. (See Appendix 2 for the Tokyo 2020 Games Venues.)

Development of these venues and facilities has a particularly large impact on sustainability among all activities done for the Games. For this reason, the Tokyo 2020 Games will be made maximum consideration for sustainability at all stages from the design stage to post-Games, including the construction phase and Games operation.

Furthermore, advanced activities and efforts will be presented to the world based the concept of "Tokyo 2020 Games making sustainability a top priority"; state-of-the-art technologies in Japan; energy saving efforts by utilising the environmental technologies; a new city model towards the hydrogen society; the advanced resource circulation from procurement of goods to reuse after the Games for preparation of venues; consideration of diverse living things in the venue zone which have rich greenfield lands and waterfronts; creation of abundant green space.

3.2.2 Construction Policies

In addition to compliance with the law, we will pay careful attention to following sustainability plans when constructing venues. Plans of municipal governments providing venues inside and outside of the Tokyo Metropolitan area are also considered.

(1) Climate change

- Large temporary venues to be constructed and Olympic Gymnastic Centre, a temporary venue, are evaluated based on a Japanese green building rating system called CASBEE (Large Comprehensive Assessment System for Built Environment Efficiency).
- The Green Building Program of the Tokyo Metropolitan Government obliges permanent buildings with more than 2,000 m^2 of the total floor area to take environmental measures such as rationalizing energy usage and mitigation of the heat island effect.
- Venues constructed by the Tokyo Metropolitan Government must consider to applying technologies to architecture, electric equipment and mechanical equipment and rationalise the energy use as much as possible based on the Tokyo Specifications of Energy Saving and Recycled Energy (revised in June 2016).

(2) Resource management

- Following the Policy for Promotion of Procurement of Eco-Friendly Goods and Services (cabinet decision on revision on February 7, 2017) based on the Act on Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities, and the Policy for Procurement of Eco-Friendly Goods and Services of the Tokyo Metropolitan Government (Public Works) and the Resource Circulation and Disposal Plan of the Tokyo Metropolitan Government (March 2016), we will not use or control use of goods with environment load, whose resource procurement or production damages environment, usage harms environment or consumes energies and resources as well as procures eco-friendly goods including construction materials (goods and services defined in the Article 2 of the Act on Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities).
- We will comply or respect the Sustainable Sourcing Code for Timber (June 2016) set by the Tokyo 2020 Organising Committee when procure timbers.
- We will suppress production of construction waste, following the Promotion of the Recycling of Construction Waste Plan 2014 (September 2014) set by the Ministry of Land, Infrastructure and Transport and the Promotion of the Recycling of Construction Waste Plan of the Tokyo Metropolitan Government (April 2016)

(3) Natural environment and biodiversity

- We will plan for Reduction of Total Consider houses standing along the routes that construction vehicles run based on the Amount of Nitrogen Dioxide and Particulate Matters Originating from Automobiles of the Tokyo Metropolitan Government (July 2013).
- We will utilise valuable water resource following the Guidelines for Promotion of Efficient Use of Water Resources of the Tokyo Metropolitan Government (August 2013).
- We will develop greenery areas considering the balance and links between the existing parks, local history and nature and select plants that match local climate and surroundings. For the venues constructed by the Tokyo Metropolitan Government and the Tokyo 2020 Organising

Committee, select kinds of trees that match locations referring to the Guidelines for Selecting Native Plant Species for Greening (May 2014).

- Based on the Landscape Plans of the Tokyo Metropolitan Government (enacted in April 2007; 6th revision in August 2016), we will reduce a feeling of oppression of the building, design the building ‘s exterior matching the surrounding areas and create green areas linking to neighbouring nature, harmonising the buildings with the landscape.

(4) Consideration of human rights, labour and fair operating practices

- We will prepare accessible environment in accordance with the Tokyo 2020 Accessibility Guidelines (March 2017) set by the Tokyo 2020 Organising Committee to promote both tangible and intangible barrier-free environment.
- The Council of Safety and Health of Construction of Tokyo 2020 Olympics and Paralympics Competition venues was set by related ministries, contractee organisations and construction industry associations in 2016 developed the Basic Policy for Safety and Health of Construction of Tokyo 2020 Olympics and Paralympics Competition venues. Based on this policy, we will create a work environment where women and the young can work without difficulties by implementing advanced safe and health measures that can be a model case of comfortable and safe Games construction.

3.2.3 Monitoring of Venue Construction

To achieve goals described in this Plan, we will confirm the status of actions taken for Venue construction at every stage from preparation to closing of the Games and ensure to implement actions stated by the Operation Plans.

3.2.4 Olympic Stadium

(1) Background

The Tokyo 1964 Games was represented Japan that recovered from the damage from post WWII and was returning to the international society. For this national project, the National Stadium was used as the main venue and was loved by the Japanese citizens after the Games as an Olympic legacy.

However, the National Stadium had been very much degraded over half a century and it also became difficult to hold international competitions as it had only 8 lanes.

In December 2011, the both houses of the Diet voted that Japan must provide necessary support and prepare the competition environment as a nation to bid to host the 2020 Olympic and Paralympic Games.

In the Sport basic plan set in 2012 based on the Basic Act on Sport established in June 2011, the Japan Sport Council stated that it will construct and improve facilities including the National Stadium to support hosting large international competitions such as Olympics and World Cups, and the construction of the Olympic Stadium is defined as so-called a national project.

After the withdrawal of the previous construction plan in July 2015, the construction is conducted based on the present plan.

(2) Overview of venues

(Overview)

The Olympic Stadium is planned to be used for the opening and closing ceremonies, athletics and football games of the Olympics as well as for the opening and closing ceremonies and athletics of Paralympics. The capacity will be approximately 60,000 persons (for Olympics Games).

The Basic Idea of Construction of the New National Stadium (Olympic Stadium) in the Required Service Level of Olympic Stadium Construction Project says that Olympic Stadium should be a place where all athletes exert their utmost abilities and move people around the world, leading the Tokyo 2020 Games to success; eventually it should be a great legacy loved and utilised by future generations for a long time. Following items are defined as the concepts of venue construction:

a. A stadium which is opened to everyone, makes people gathered feel secured and allows them to enjoy competition
    - We aim to make a facility with world's best universal design.
    - We will create a space where athletes and spectators can have a sense of unity and pulls athletes' utmost ability.

b. A stadium matches the surrounding environment, gathers state of the art technologies and represents the climate, nature and traditions of Japan in a modern way.
    - We will create the core of the sports cluster with green environment
    - We will express the Japanese traditional culture in a new format using the modern technologies.

c. A stadium contributes to disaster prevention in a local area and conservation of the environment globally
    - We will contribute to evacuation and rescue in case of natural disasters and the reduction of global environment burden.

(Location)

10-1, Kasumigaokamachi, Shinjuku-ku and 1-15-1 Sendagaya Shibuya-ku, approximately 113,000 m^2

(Overview of Area)

The Meiji Jingu Gaien located adjacent to the construction site is built based on the city structure of the Meiji Jingu Gaien constructed during the Taisho era (1912-1926) and has the sophisticated urban landscape decorated with great natural environment, trees in the garden. The area also accumulates many major sports facilities in Japan where the public and athletes enjoy sports. Sports facilities, such as the Meiji Jingu Stadium, the Chichibunomiya Rugby Stadium, rubber baseball grounds/tennis courts, ice skate rinks and the Tokyo Metropolitan Gymnasium, and art/cultural facilities, such as the Meiji Memorial Picture Gallery and the Kenkoku Memorial Library, are in this area.

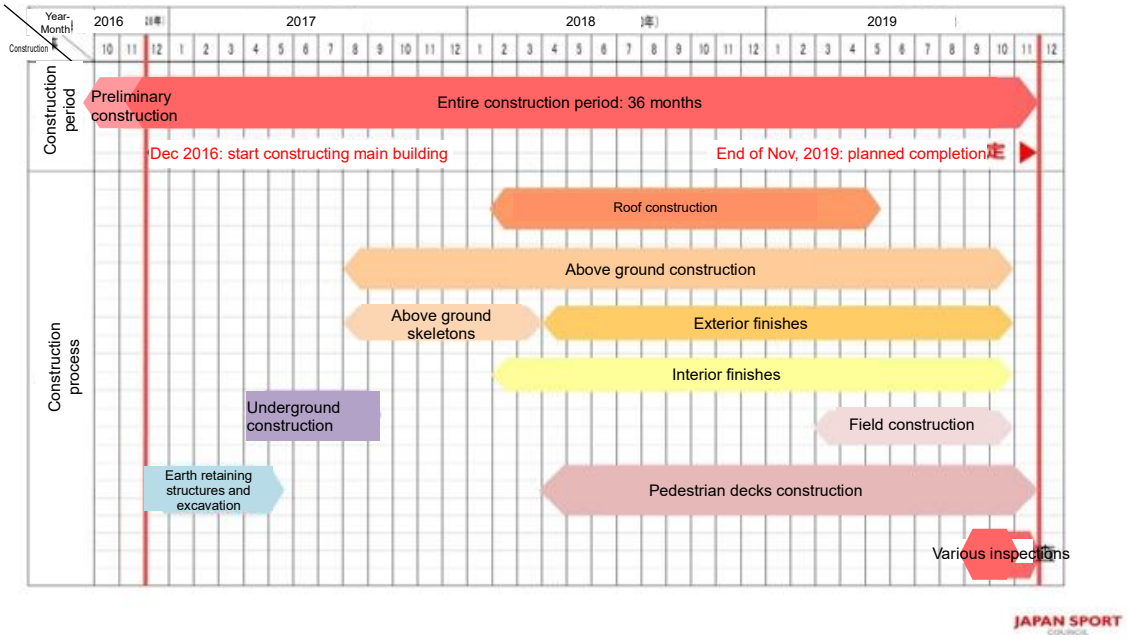
Design Works and Construction Works of Taisei Corporation, Azusa Sekkei Co., Ltd. and Kengo Kuma and Associates JV／Courtesy of JSC

Note: The illustration is an image and could be different from the real building)

The above illustration shows trees and green after approximately 10 years from the completion

(3) Construction process

Schedule of Olympic Stadium Development



(4) Specific activities in the past

a. Climate change

<Reduce emissions by Revision of Venue Plan>

- As a result of the revision of Venue Plan, CO2 emissions are reduced by 153,000 tonnes compared to the previous plan (BAU).

<Adopt passive design>

- Grand Eaves of the Wind efficiently channel seasonal winds into the upper tier of the stadium. Channeling winds into upper tier of the stadium and utilizing the upward current effectively generated from the field by being heated by the sunlight, heat and moisture generated in the stadium are discharged.
- The Terrace of the Wind, rest area for spectators channels winds into the concourses and the lower tier of the stadium and improves the thermal environment of the spectators' seats.
- We will reduce areas requiring supplemental lighting equipment by adopting roof light windows.

<Energy conservation of buildings>

- The level of the facility design is confirmed to attain a rating of S, the best on a scale of one to five according to CASBEE (Large Comprehensive Assessment System for Built Environment Efficiency), the Japanese green building rating system.
- The stadium is estimated to gain a level 3, the best grade based on the Green Building Plan of the Tokyo Metropolitan Government, with an energy reduction rate (ERR) of the facility systems

of more than 30% and the reduction of perimeter annual load (PAL*) of the building of more than 20%.

- We will conserve energy by careful energy management such as adopting individual room air conditioning systems for rooms used for purposes other than competition events to reduce the burden on the central heating system as well as splitting electric systems by the stand layers and the seats zones.
- To achieve a long-life of the stadium, we will adopt highly durable member and finishing materials. We will increase the durability by using the soft-first-story configuration to ensure quake resistance and prevent damage by earthquakes.

*A configuration to have lower floors with relatively soft frames and intensively equipped oil dampers that efficiently absorbs the earthquake energy and suppresses shakes

<Adoption of recyclable energies>

- Built-in solar cells will be built into the tips of the roof, following the Energy Basic Plan (decided by the cabinet in April 2014)

b. Resource management

<Reuse/Recycle>

- For construction, we will procure eco-friendly building materials and suppress the used of goods with environment burdens, aligning with the Policy for Procurement of Eco-Friendly Goods set by the Ministry of Education, Culture, Sports, Science and Technology based on the Act on Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities. Specifically, eco-friendly goods shown in the below table are mainly planned to be used.

Goods	Used amount
Recycled crushed stones (recycled crusher run/recycled mechanically stabilized crushed stone)	Approximately 4,700 m^3
Fresh concrete (blast furnace)	Approximately 76,400 m^3
Ceramic tiles using recycled materials	Approximately 7,400m^2
Vinyl flooring materials using recycled materials	Approximately 13,500m^2

Note: Goods requirements are based on the Policy for Procurement of Eco-Friendly Goods (February 2017). The volumes in the table are planned values at the designing phase and are subject to change.

c. Natural environment and biodiversity

<Measures against heat>

- The ‘airflow generating fans’ will be built as a countermeasure against heat when the external winds is weak and much airflow is not expected and seats are directly exposed to the sunlight. This will decrease spectators’ apparent temperatures and improve spectating environment.

- Mist cooling systems utilising heat of vaporization of the water will be set up in areas where people gather around the external gates and part of areas inside the Stadium. They could lower the temperature in a surrounding area by scattering fine water droplets.
- We will take countermeasures against heat in the pedestrian zones of the premises by cover the building envelop with greenery, water and water-holding paving.

<Environmental consideration of atmosphere, soil, etc.>

- In terms of the construction, we will use low-emission type construction machine (second reference value) and also try to use Cutting-edge low-emission type construction machine (Third reference value).
- We will use a low-noise type construction machine and make efforts to adopt a low-noise / low-vibration construction method to minimise the generation of noise and vibration.
- We adopt low-pollution type construction vehicles as much as possible, use high-quality fuels, raise awareness, thoroughly implement eco-drives such as appropriate idling stops and check vehicles regularly.
- As a result of the soil contamination survey, contaminated soil was confirmed. Appropriate soil contamination countermeasures were implemented based on the Soil Contamination Countermeasure Act and the Environment Securing Ordinance.

<Consideration of water environment>

- The rainwater in the site is planned to be gathered to the underground reservoir and partially used for toilet flushing and watering of lawns. By this, 930 m^3 per day of non-portable water, the rainwater and recycled water (reclaimed water) is planned to be used*.

*This amount is estimated based on the planned non-portable water consumption amount by the Tokyo Metropolitan Government's Green Building Plan System and is subject to change by actual consumption.

<Ensuring greening and bio-diversity in consideration of landscape>

- The Stadium surrounded by great nature is planned to connect with the parks and green spaces, Meiji Jingu Gaien, Shinjuku Gyoen, Akasaka Goyochi and the Palace, forming a green network.
- The present flora and plant communities are planned to be preserved by transplanting existing trees, and afforestation of approximately17,000 m^2 is planned through planting trees in the over ground areas
- The planting plan tries to harmonize the Stadium with neighbouring nature landscape saying that kinds of trees to be planted will be selected mainly from those constituting the potential natural vegetation of the planned site, and the existing trees are preserved or transplanted actively. Furthermore, the plan aims to create a lager green area by planting these trees, ensures unity between nature around the site and considers creating pathways and habitat environment for plants and animals living in trees of the surrounding areas.

<Utilisation of domestic timber>

- Spectators will feel the warmth of wood through the combination of timber and steel for the truss of the Large Roof. Timber will also be prominently used inside the stadium and for the eaves of

the outer perimeter to achieve a very Japanese and world-class stadium. Domestic timber(Approximately 2,000m^3) obtaining forest certification will be used for the Large Roof and eaves.

d. Consideration of human rights, labour, fair business practices

<Consideration of accessibility>

- As consideration for those in wheelchairs, we will make all wheelchair seats accessible via the elevators and arrange seats for companions next to the wheelchair seats so that they can sit side by side. We will build low counters in addition to regular-height counters at information centres, ticket boxes and shops.
- As consideration for visually impaired people, we will prepare the guidance tactile, voice guidance devices, intercoms at information centres, tactile graphics and braille signs.
- As consideration for auditory impaired people, we will disperse seats with hearing aids in balance, prepare written conversation devices at the integrated information centre and information centres of each floor and flash lights installed in major toilets, resting rooms, and nursing rooms inform persons with hearing disabilities about emergency events.
- As consideration for people with intellectual/mental disabilities and developmental disability, we will select soft material for the walls of designated rest rooms and make them soundproof.
- As consideration for those with children, we will build handrails with spindles for open ceiling spaces and the periphery of concourses and nursing rooms independent of toilets.
- As consideration for the elderly, we will make elevators and escalators accessible from the second basement to fifth floor and the first to the fourth floors respectively and build handrails to all vertical paths in the seats areas. In the area outside of the building, benches are set at least every 50 meters.
- As consideration for users from abroad, we will adopt pictogram icons for guiding signs with descriptions in multiple languages.
- Build more “caregiver-together-toilets (provisional)” and unisex private toilets as a consideration of those who have difficulty to use gender toilets, such as people with disability attended by different gender caregivers or with gender identity and sexual orientation, etc.
- Make signs easy to understand for many people in terms of text sizes, display height, colouring and lightness contrasts.
- As consideration for spectators using toilets, we will build toilets with separate entrances and exits to maintain the flow of spectators and place ostomy toilet rooms near the entrance so that can be easily found.

<Consideration of labour, fair business practices, etc.>

- We will implement construction, giving the top priority to safety and creating a great working environment for women and young people based on the Basic Policy for Safety and Health Measures for Facility Construction of Tokyo 2020 Olympics and Paralympics Games. Safety and health measures will be implemented in a uniformed manner regardless of prime or sub-contractors in cooperative relations between labour and management.
- As the safety and health measures, we will conduct comprehensive risk assessment, take drastic measures for risk reduction, including selection of construction methods, and educate

construction workers about safety and health. To motivate the workers to keep safety and health, manage their health conditions, set up lady's toilets and dressing rooms, take action to prevent second hand smoking and reduce long working hours.

(5) Major activities in the future

a. Climate change

<Energy management during the Games operation>

- In addition to the functions of general BEMS (Building and Energy Management System, it is being discussed to adopt the next-generation BEMS, which supports optimum management considering demands on electricity and characteristics of facilities and minimises total energy cost and environmental burden, to optimize energy use during the Games.

b. Resource management

<Controlling construction waste>

- Based on the Construction Recycling Promotion Plan 2014, all possible excavated soil and waste from construction will be recycled, and items that are not easily recyclable will be properly processed. More specifically, materials contaminated the construction waste which can be separated will be separated at construction sites, carried out of the sites as individual materials, and shipped to recycling facilities, especially ones with fine capacities, aiming to achieve 100% recycle and reduction rates. More utilisation will be implemented for excavated soils will to achieve 100% of recycling.

c. Natural environment and biodiversity

<Environmental consideration of air, soil, etc.>

- We will continue appropriate monitoring of the soil, and if pollution is found during construction, we will immediately implement proper countermeasures based on laws and regulations.

d. Consideration of human rights, labour, fair business practices, etc.

<Consideration of labour, fair business practices, etc.>

- Constructers (including sub-constructors) hold accident prevention meetings to promote prevention of industrial accidents and compliance. Moreover, we will prepare working environment in line with progress of construction in cooperation with the constructers.
- We will participate in the Council of Safety and Health of Construction for the Tokyo 2020 Olympic and Paralympic Games and report the status of the measures, utilising this opportunity to exchange information on safety and health and knowledge.

3.2.5 Venues Constructed by the Tokyo Metropolitan Government

(1) Background

New permanent venues to be built are located in the Tokyo Bay Zone, mostly the bayside area of Tokyo Bay, the landfill generated post WWII, and sports are bringing a new element to long-term development of the area. This area will embody the future of Tokyo as a sustainable city and, with commercial, residential and entertainment facilities newly constructed or re-developed, the area is

expected to be developed even further, satisfying demand in a vibrant metropolis.

The Tokyo Metropolitan Government will construct these new permanent venues.

(2) Revision of Venue Plan

To gain understanding of the citizens of Tokyo on the venue plan as of the bidding and implement it, the Tokyo Metropolitan Government and the Organising Committee have been re-discussing venue plans in terms of following three points: what can be legacies; impact on residents' life; how to manage anxiety about increased construction cost. Moreover, facility allocation for Seaside Park Hockey Stadium and Dream Island Archery Field were changed in 2015, and construction cost of Sea Forest Waterway and Ariake Arena and seats of Olympic Aquatics Centre were reduced in 2016. These changes made to venues contribute to lighten environmental burden including reduction of CO2 emissions and construction materials as well as cost cut.

In addition to utilisation of existing venues, which had been decided already, existing facilities cover nearly 60% of the total venues (25 of 43 as of February 2018) as a result of further revision of the venue plan.

	Before revision			After revision		
	Venue Name	Planned Sports		Venue Name	Planned Sports	
		Olympics	Paralympics		Olympics	Olympics
1	Ariake Arena	Volleyball (Volleyball)	Sitting volleyball	Ariake Arena	Volleyball (Volleyball)	Wheelchair basketball
2	Seaside Park Hockey Stadium	Hockey	Football 5-a-side Cerebral Palsy Football 7-a-side※	Seaside Park Hockey Stadium	Hockey	—
3	Sea Forest Waterway	Canoe (Sprint) Rowing	Canoe Rowing	Sea Forest Waterway	Canoe (Sprint) Rowing	Canoe Rowing
4	Canoe Slalom Course	Canoe (Slalom)	—	Canoe Slalom Course	Canoe (Slalom)	—
5	Dream Island Archery Field	Archery	Archery	Dream Island Archery Field	Archery	Archery
6	Olympic Aquatics Centre	Aquatics	Aquatics	Olympic Aquatics Centre	Aquatics (Swimming, Diving, Artistic Swimming)	Swimming
7	Youth Plaza Arena A	Badminton	Wheelchair basketball Wheelchair fencing	Musashino Forest Sport Plaza	Badminton	Wheelchair basketball

8	Youth Plaza Arena B	Basketball	Wheelchair basketball	Saitama Super Arena	Basketball	—
9	Musashino Forest Sport Plaza	Modern Pentathlon (Fencing)	—	Musashino Forest Sport Plaza	Modern Pentathlon (Fencing)	—
10	Wakasu Olympic Marina	Sailing	Sailing	Enoshima Yacht Harbour	Sailing	—

* Cerebral palsy 7-a-side football is excluded from the Games after Tokyo 2020 was decided to hold.

(3) Post-Games venue use

In April 2017, the Tokyo Metropolitan Government developed the Operation Plan for New Permanent Facilities, a principle for post-Games facility operation. The Plan discusses operation from following three viewpoints: 1) from an individual facility to a network of an area; 2) from cost to investment for the future; 3) from the public to private. It stated that new permanent venues will build a new core of sports in the Tokyo bay area to provide residents and Japanese people a place to enjoy sports and try to create a wider circle of legacy in this area through coordination with neighbouring parks and sports and commercial facilities

Furthermore, the venues will utilise energies using recyclable energies and super-efficient energy technologies equipped for the Games to control CO2 emissions after the Games, providing maximum efforts to be eco-friendly and will promote sports for people with disability as facilities accessible for everyone.

(4) Issuance of Green Bonds

As environmentally conscious activities have been emphasized, more and more companies and municipal governments in Japan and the world issue Green Bonds to collect resource for environmental business and the demand for the Green Bond is on the rise.

In 2017, the Tokyo Metropolitan Government started issuance of Tokyo Green Bonds as it engages in bringing resolutions to environmental problems and promotes expansion and activation of the Green Bonds market in Japan. One of the major purposes of the bond is that the government, which has aspired to be a smart city, will strongly promote new environmental measures in addition to existing ones with support from residents and companies in the City of Tokyo through this bond.

‘Environmental measures for Competition Venues’ to adopt renewable energy equipment to Competition venues is one of programs that Tokyo Green Bonds are planned to be allocated.

(5) Overview of Venues *Below illustrations are subject to change

Ariake Arena

≪Sport≫

・Olympic Games：Volleyball(Volleyball)

・Paralympic Games：Wheelchair basketball

<<Post-Games use>>

A new platform for sports and culture that can be used for sport events including international competitions and various types of events

<<Location>>

1-11, Ariake, Koto-ku

Area of planned site: approximately36,600 m^2-

Image (as of October 2015)
Source: Tokyo Metropolitan Gov.

Ariake Tennis Park

≪Sport≫

・Olympic Games：Tennis

・Paralympic Games：Wheelchair tennis

<<Post-Games use>>

A centre for sports and recreations with newly developed tennis courts with approximately 3,000 seats, a clubhouse and indoor courts

<<Location>>

2-2, Ariake, Koto-ku

Area of planned site: approximately163,000 m^2

Image (as of May 2017)
Source: Tokyo Metropolitan Gov.

Seaside Park Hockey Stadium

≪Sport≫

・Olympic Games：Hockey

<<Post-Games use>>

A sport centre with one of the best multiple-purpose artificial turf ground for hockey and other sports

<<Location>>

4, Yashio, Shinagawa-ku and 1, Tokai, Ota-ku

Area of Oi Central Seaside Park Sports Forest where the planned site is located: approximately282,000 m^2

Image (as of June 2016)
Source: Tokyo Metropolitan Gov.

Sea Forest Waterway

≪Sport≫

・Olympic Games：Canoe (Sprint)　Rowing

・Paralympic Games：Canoe　Rowing

<<Post-Games use>>

A sport centre for canoe and rowing which can hold international competitions; a recreation and resting place for residents where they can use waters for many purposes

<<Location>>

Central Breakwater Area at the end of 3, Aomi, Koto-ku

Area of planned site: approximately79ha (including water area)

Image (as of December 2016)
Source: Tokyo Metropolitan Gov.

Canoe Slalom Course

≪Sport≫

・Olympic Games：Canoe (Slalom)

<<Post-Games use>>

A facility for water sports and recreation including canoeing and rafting, creating a new vibrant area by the water through integrated use with surrounding facilities

<<Location>>

Rinkai-cho, Edogawa-ku

Area of planned site: approximately76,000 m^2

Image (as of May 2016)
Source: Tokyo Metropolitan Gov.

Dream Island Archery Field

≪Sport≫

・Olympic Games：Archery

・Paralympic Games：Archery

<<Post-Games use>>

A venue newly built for qualifying rounds provides opportunities for various sports, mainly archery, to residents of Tokyo City and visitors of the park

<<Location>>

2, Yumenoshima, Koto-ku

Area of construction: approximately20,000 m^2

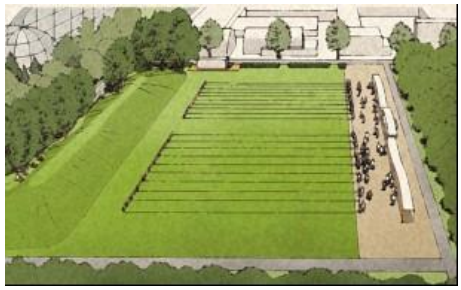


Image (as of November 2017)
Source: Tokyo Metropolitan Gov.

Olympic Aquatics Centre

≪Sport≫

・Olympic Games：Aquatics (Swimming, Diving, Artistic Swimming)

・Paralympic Games：Swimming

<<Post-Games use>>

Aquatics swimming facility for international competitions which can be used by residents of Tokyo City

<<Location>>

2-2, Tatsumi, Koto-ku

Area of planned site: approximately161,000 m^2

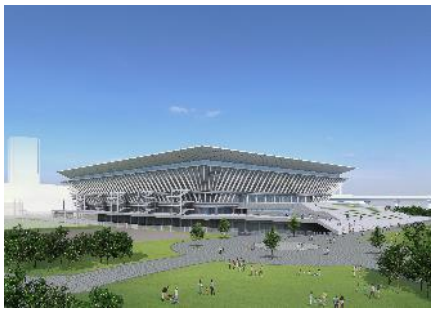


Image (as of November 2017)
Source: Tokyo Metropolitan Gov.

Musashino Forest Sport Plaza

≪Sport≫

・Olympic Games：Badminton
Modern Pentathlon (Fencing)

・Paralympic Games：Wheelchair basketball

<<Post-Games use>>

An integrated sport facility responding to various sport's needs in Tama area, one of core areas of the Greater Tokyo Area

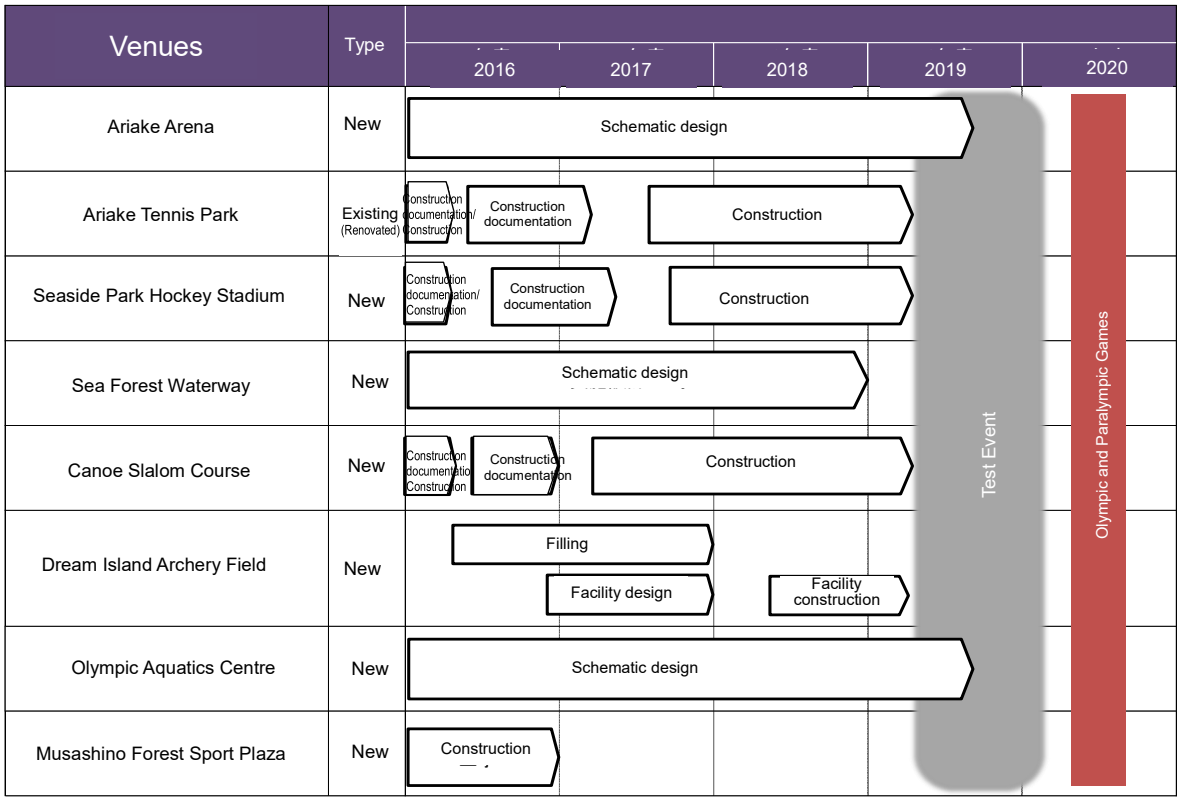
<<Location>>

1, Tobitakyu, Chofu city

Area of premises: approximately 33,500 m^2

Image (as of April 2017)
Source: Tokyo Metropolitan Gov.

f. Construction process



(7) Specific activities in the past

a. Climate change

<Emission control by revision of Venue Plan>

- Revision of Venue Plan will reduce CO2 emissions from new permanent venues constructed by the Tokyo Metropolitan Government by 174,000 tonnes of CO2 compared to the previous plan (BAU).

<Adoption of passive design>

- Ariake Arena and Musashino Forest Sport Plaza adopt natural ventilation systems that automatically control opening and closing of openings
- Ariake Arena and Ariake Tennis Park adopt roof light windows, etc. to reduce operating hours of lighting equipment

<Energy-efficient buildings>

- The venues to which the Tokyo Metropolitan Guidelines for Green Buildings are applicable will consider adoption of technologies based on the Tokyo Specifications of Energy Saving and Recycled Energy to rationalize energy use as far as possible. Specifically, Musashino Forest Sport Plaza gained level 3, the best evaluation, with an energy reduction rate (ERR) of more than 30% for energy use of facility systems and a heat loads reduction rates of the buildings (PAL* reduction rates) of more than 20%.
- Ariake Arena and Olympic Aquatics Centre are expected to gain a rating of S, the best evaluation based on CASBEE (Large Comprehensive Assessment System for Built Environment Efficiency), the Japanese green building rating system.

- Basically, we will select LED devices as lighting equipment considering energy efficiency and a long life of such products.
- BEMS utilising information technology will be introduced at Ariake Arena, Ariake Tennis Park, Olympic Aquatics Centre and Musashino Forest Sport Plaza.
- Based on the Guidelines for Structural Design that are applied to buildings owned by the Tokyo Metropolitan Government, applicable facilities such as large-size gymnasiums and halls must have 1.25 times as large held horizontal yield strength (the horizontal strength that a building should have) than regular buildings to maintain the structure that will not require extensive repair after severe earthquakes so that they can secure people's lives and maintain functionality. Moreover, Ariake Arena and Olympic Aquatics Centre aim to prolong buildings' lives by securing strong earthquake resistance, such as adopting earth-resistant structured roofs

<Adoption of recyclable energies>

- Based on the Energy Basic Plan and the Tokyo Specifications of Energy Saving and Recycled Energy, active adoption of recyclable energies is being discussed, and indoor Competition venues are planning to adopt photovoltaic facilities and facilities to utilise solar heat and geothermal energy as described in the below table.

Venue	Photovoltaic facility (Generation capacity in kW)	Solar-heat facility (Usable capacity in kW)	Geothermal energy facility (Geothermal capacity in kW)
Ariake Arena	200 kW	100 kW	55 0 kW
Ariake Tennis Park Club house/indoor courts	50 kW	65 kW	—
Seaside Park Hockey Stadium	5 kW (First pitch) 3 kW (Second pitch)	—	—
Sea Forest Waterway	30 kW	—	—
Olympic Aquatics Centre	100 kW	100 kW	600 kW
Musashino Forest Sport Plaza	102.58 kW	197.0 kW	Cooling power: 406.8 kW Heating power: 461.7 kW

Note: Capacities shown in the table for Musashino Forest Sport Plaza are actuals. Values for the other venues are estimated capacities in the planning phase and subject to changes.

- We will adopt equipment to indicate amount of energy use, CO2 emissions and the status of CO2 reduced by photovoltaic facilities to promote visualisation.

b. Resource management

<Reuse/Recycle>

- For construction, we will purchase eco-friendly materials and suppress the use of item with environment impact based on the Policy for Procurement of Eco-Friendly Goods and Services

of the Tokyo Metropolitan Government (Public Works) and the Resource Circulation and Disposal Plan of the Tokyo Metropolitan Government. Specifically, eco-friendly items in the below table are planned to be used.

Material	Venue・Used amount
Recycled crushed stones (recycled crusher run/recycled mechanically stabilized crushed stone)	Ariake Arena Approximately 7,600t Sea Forest Waterway Approximately 25,600 t Canoe Slalom Course Approximately 9,000t Archery Field (Dream Island) (embankment)Approximately 4,800t Olympic Aquatics Centre: approximately 117,500t Musashino Forest Sport Plaza Approximately 3,400t
Concrete using recycled aggregates	Ariake Arena Approximately 800m^3 Sea Forest Waterway Approximately 2,900m^3 Olympic Aquatics Centre: approximately 1,300m^3 Musashino Forest Sport Plaza Approximately 150m^3 *Recycled aggregates class L are used
Recycled steel such as electric furnace steel	Ariake Arena (Deformed steel) Approximately 4,800t （Mold steel）Approximately 500t Olympic Aquatics Centre: (Deformed steel) approximately 4,500t; (Mold steel) approximately 4,000t Musashino Forest Sport Plaza: (Deformed steel) approximately 9,600t; (Mold steel) approximately 240t
Ceramic tiles using recycled materials	Musashino Forest Sport Plaza Approximately 82,000 m^2
Vinyl flooring materials using recycled materials	Musashino Forest Sport Plaza Approximately 7,500 m^2
Secondary concrete products using eco-cement	Musashino Forest Sport Plaza: 10,792

Note: Requirements of items are based on the Policy for Promotion of Procurement of Eco-Friendly Goods and Services (Feb 2017) and the Policy for Procurement of Eco-Friendly Goods and Services of the Tokyo Metropolitan Government (Public Works). The amounts for Musashino Forest Sport Plaza, the archery venue (embarkment construction) are actuals. Others are estimated amounts in the planning phase and are subject to change.

c. Natural environment and biodiversity

<Measures against heat>

- We will reduce heat load of buildings such as heat insulation in the exterior walls, adopt efficient air conditioning methods, increase greenery on building rooftops and build part of spectators' seats. For the outdoors, we will also adopt heat barrier paving for areas used by spectators and secure shades by conserving existing trees as much as possible.

<Chemicals>

- Based on the Policy for Procurement of Eco-Friendly Goods and Services of the Tokyo Metropolitan Government (Public Works), we will promote reduction of use of materials

containing chlorofluorocarbons, pigments containing lead and hexavalent chrome and paints containing volatile organic compounds (VOC).

<Consideration of air, soil, etc.>

- We will actively adopt low-emission and low-noise construction machines for the venue construction considering impact on surrounding environment.
- We understand the impact of the Games operation on the soil properly based on the laws and regulations when developing the venues.

<Consideration of water environment>

- Based on the Outline of Promotion of Water Utilisation of the Tokyo Metropolitan Government, Ariake Arena, Ariake Tennis Park and Olympic Aquatics Centre uses water efficiently; rainwater, reuse and recycled water is planned to cover all of service water. Furthermore, Canoe Slalom Course only uses clean water but utilises precious water resource by adopting a water filtration system to cyclically use stored water for competition courses.

Venue	Amount of service water use
Ariake Arena	Approximately 95m^3/day
Ariake Tennis Park Clubhouse/indoor courts Show court 1	Approximately 33 m^3/day
Seaside Park Hockey Stadium	Approximately 5 m^3/day
Sea Forest Waterway	Approximately 4.7 m^3/day
Olympic Aquatics Centre	Approximately 38 m^3/day
Musashino Forest Sport Plaza	Approximately 108 m^3/day

Note: The amount of Musashino Forest Sport Plaza is estimated based on the planned service water use. Others are planned amounts in the planning phase and are subject to change.

<Greening and ensuring biodiversity considering landscape>

- We will minimise the impact of venue construction on trees and green by conserve as many existing trees as possible in the original place or transport them within the venue sites.
- In addition to conserving existing trees, we will increase green spaces beyond the level that local regulation of the venue sites require.

Venue	Greening area
Ariake Arena	6,506.37 m^2
Ariake Tennis Park	44,659.87 m^2
Seaside Park Hockey Stadium	62,231.65 m^2
Sea Forest Waterway	426.86 m^2
Canoe Slalom Course	9,965 m^2
Olympic Aquatics Centre	84.174 m^2
Musashino Forest Sport Plaza	12,217.71 m^2

Note: The above areas for Seaside Park Hockey Stadium and Musashino Forest Sport Plaza are the total areas defined in the

Tokyo Metropolitan Government's Green Building Programs. Others are planned areas in the design phase and are subject to change.

- To develop greenery areas and select trees, we will select kinds of trees that match the venue sites, considering harmony and connection with existing parks and referring to the Guidelines for Selecting Native Plant Species for Greening of the Tokyo Metropolitan Government to create a new habitat for soil animals and a platform to nurture plants. For Olympic Aquatics Centre near Tatsumi Seaside Park and Ariake Arena to be constructed near Ariake Marine Water Park, types of trees are selected considering affinity and continuity between venues and parks.
- Exterior of Sea Forest Waterway is planned match surrounding nature and have transparency matching water. Additionally, create an integrated landscape matching the sea by drawing a green line on Central Breakwater Area: build green belts alongside the road around the venue and green roofs.
-

d. Consideration of human rights, labour, fair business practices, etc.

<Consideration of accessibility>

- To construct the venues, we will apply the recommended standard, the most desirable standard of the Tokyo 2020 Accessibility Guidelines as far as possible.
- In addition to complying with guidelines properly, detailed ideas are gathered at accessibility workshops consisting of associations of people with disability and academic experts to make the venues more useful from the perspective of people with disabilities.

<Consideration of labour, fair business practices, etc.>

- Based on the Basic Policy for Safety and Health of Construction of Tokyo 2020 Olympics and Paralympics Competition venues, we will create a work environment where women and the young can work without difficulties and implement construction giving the top priority to safety. Safety and health measures will be implemented in a uniformed manner regardless of prime or sub-contractors in cooperative relations between labour and management.
- For safety and health, we will conduct comprehensive risk assessment, take drastic measures for risk reduction, including selection of construction methods, and educate construction workers about safety and health. To motivate the workers to keep safety and health, we will manage their health conditions, set up lady's toilets and dressing rooms, take action to prevent second hand smoking and reduce long working hours.

(8) Major activities in the future

a. Climate change

<Energy management of Games operation>

- Ariake Arena, Ariake Tennis Park, Olympic Aquatics Centre, and Musashino Forest Sport Plaza adopt BEMS utilising information technology and manage energies efficiently using energy consumption data gained via BEMS.

b. Resource management

<Reduction of construction waste>

- We will make efforts to reduce construction waste based on the Construction Recycling Promotion Plan of the Tokyo Metropolitan Government. Specifically, we aim to achieve a waste recycle and reduction rates of more than 99% by thoroughly separating the waste, store, discharge, reuse depending on types of waste, and reduce unnecessary materials. Excavated soil produced by construction is used in the site and used for construction periods and is also shipped to the lands to accept construction soil after confirming the soil meets their acceptance standards, aiming to achieve a utilisation rate of more than 99%.
- Trees cut down for the construction are shipped to intermediate processing facilities can be processed into chips as a recycled material, or into wood biomass such as pellet fuel, as thermal recycling.

c. Natural environment and biodiversity

<Consideration of environment such as air and soil>

- For future venue construction, we will actively adopt low-emission and low-noise construction machines considering impact on surrounding environment and make efforts to reduce gas emissions and noise such as preventing unnecessary idling.
- If pollution is found during construction, we will immediately implement countermeasures.

d. Consideration of human rights, labour, fair business practices, etc.

<Consideration of labour, fair business practices, etc.>

- We will continue monitoring implementation status of safety and health measures at the Safety and Health Council. Moreover, we will communicate high safety and reliability of Japanese construction to the world by sharing these efforts for the venue construction in an easy manner. To make this a model for comfortable and safety construction for the future, we will promote information sharing and exchange among construction engineers.

3.2.6 Temporary Venues and Overlay

(1) Background

a. Basic concept of temporary venues and overlay

For the Tokyo 2020 Games, where many materials and goods are purchased in a short period time, it is necessary to save energies and recycle resources in every aspect of the Games. Recycling of resources particularly used for temporary venues and Overlay, which are to be dismantled after the Games, plays a crucial role in order to ensure sustainability of the Games.

Therefore, we decided to consider following points in development of temporary venues, etc. and Overlay.

- We will narrow scope of the construction by utilising facility of the existing venues as much as possible.
- We will procure goods through rental and leasing services as much as possible. We will purchase items only when renting/leasing is difficult.
- In case of purchasing, we will consider post-Games use and recycle as prerequisites for procurement, such as deciding on post-Games use purposes and users prior to the procurement as much as possible.
- For goods to be purchased, we will select eco-friendly goods as much as possible.

Basically, we will build energy and technology infrastructure for Overlay and temporary venues which are only used by the Tokyo 2020 Organising Committee during the Games.

b. Definition of temporary venues.

The definition of temporary venues in this plan is that there are no existing venues (including newly built venues) in a venue area and competition fields and temporary facilities (spectator seats, etc.) and Overlay are built on a vacant land and prepared to meet the necessary standard as Venues. Basically, they are only used during the Games and dismantled after the Games.

c. Definition of Overlay

The definition of Overlay in this plan is buildings and facilities added to Venues only temporary for the operation of the Games. Basically, they are only used during the Games and removed after the Games.

(2) Overview of facilities

a. List of temporary venues

(As of January 2018)

Venues	Sport		Construction Details
	Olympic	Paralympic	
Olympic Gymnastic Centre	Gymnastics	Boccia	Construction of Competition Venue
Olympic BMX Course	Cycling（BMX） Skateboarding		Competition area, Spectator seats, etc.

Venues	Sport		Construction Details
	Olympic	Paralympic	
Odaiba Marine Park	Aquatics（Marathon Swimming）Triathlon	Triathlon	Competition area, Spectator seats, etc.
Shiokaze Park	volleyball（Beach Volleyball）		Competition area, Spectator seats, etc.
Aomi Urban Sports Venue	Sport Climbing Basketball (3x3)	Football 5-a-side	Competition area, Spectator seats, etc.
Sea Forest Cross-Country Course	Equestrian (Eventing (Cross Country))		Competition area, Spectator seats, etc.
Asaka Shooting Range	Shooting	Shooting	Competition area, Spectator seats, etc.
Tsurigasaki Beach Surfing Venue	Surfing		Spectator seats, etc.

*Overlay will be set up all Competition venues, Olympic/Paralympic Village and Non-Competition venues including IBC/MPC.

b. Overview of major temporary venues

Olympic Gymnastic Centre

≪Sport≫

・Olympic：Gymnastics

・Paralympic：Boccia

<<Post-Games use>>

The Organising Committee will build main and warm-up buildings before the Games, and the warm-up building will be demolished and the main building is planned to be used by the Tokyo Metropolitan Government as an exhibition centre for about ten years after the Games.

<<Location>>

1-8, Ariake, Koto-ku

Area to be used for the Games: approximately 96,433.5 m^2

Post-Games area: approximately 36,500 m^2

Image (as of November 2017)

Sea Forest Cross-Country Course

≪Sport≫

・Olympic：Equestrian（Eventing：Cross-Country）

<<Post-Games use>>

Renovated as Sea Forest Park (provisional name)

<<Location>>

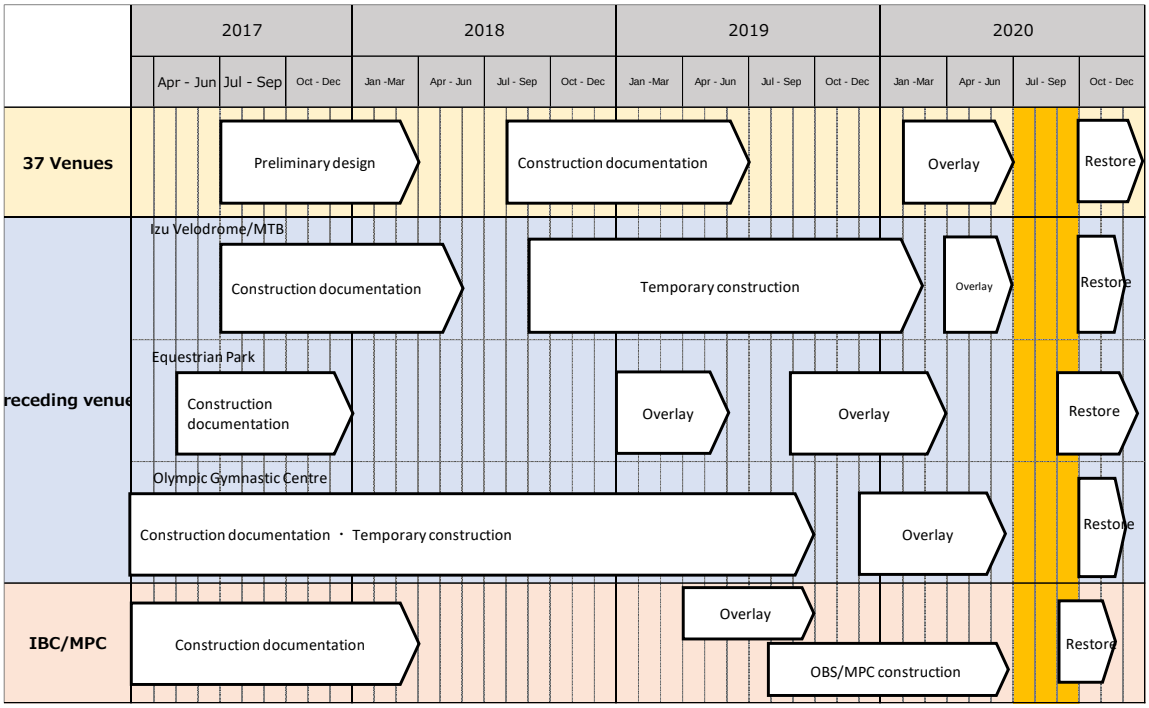
Central Breakwater Area

Area of planned site: approximately58.7ha

Source: Tokyo 2020 Guidebook

(3) Construction process

*Construction process of Olympic/Paralympic Village is described in '3.2.7 Olympic /Paralympic Village'



(4) Specific actions

a. Consideration of resource recycling in procurement and removal

For design of temporary venues and Overlay, procurement of tents, prefabrication parts and security barriers via rental/leasing service is implemented. In August 2017, a survey on interest levels of vendors of Japan and the world was conducted to review the amount and specifications of goods and procurement methods for the future. Procurement will be implemented via rental and leasing as much as possible, gaining support from vendors.

<Major rental and leasing items>

Product Name	
Modular toilets (including multi-purpose toilets)	Tent with aluminum frames
Packaged air conditioners	Containers
Spot coolers	Steel fences (more than 2 meters high)
Power generators	Modular/prefabrication houses
Fuel tanks	Temporary spectator seats

When purchasing goods and facilities that cannot be rented or leased, eco-friendly goods should basically be procured and post-Games use and users should be found as much as possible.

As it is difficult to continue using facilities and interior material, such as water heaters of about 3,900 rooms, at Olympic/Paralympic Village after the Games, the Tokyo Metropolitan Government is considering reuse of them at other public facilities. Additionally, as the Tokyo Metropolitan Government plans to further promoting 3Rs, it is discussing how to reuse facilities, such as water heaters, air conditioners and modular bathrooms, and interior material or utilise them to create memorabilia, using the ideas gathered from the public.

Timbers used for Village Plaza at the Olympic/Paralympic Village are rented for free by municipal governments around Japan and after the Plaza was demolished they will be returned to each government to be reused, as a public garage for example; procurement presupposing post-Games use is being implemented.

b. Efforts to optimize resource procurement via value engineering

Value engineering is conducted to reduce the total spending while meeting requirements and functions of each venues by analysis of material and facilities used for temporary venues, etc. and Overlay. Examination of procured materials via the value engineering will reduce resources procured and production of waste.

More specifically, security methods which do not require fences, alternative piping methods to burring such as curing, cancelling of water infrastructure construction for temporary toilets and simplification of the amount of steel frames are being discussed and possible ideas will be reflected on the designs

In addition to cost reduction, procurement considering post use is discussed, for example, integrating product standards and implementing bulk lease/rent or purchase.

c. Climate change

For Olympic Gymnastic Centre, a large temporary venue, energy-efficient use is planned through measures such as adoption of LED lighting devices and automated control systems for air conditioning facilities, building large eaves to block sun light, designing building shapes and allocation of buildings to take in prevailing winds, and it will gain a rating of S, the best evaluation for short period use based on CASBEE, the Japanese green building rating system.

d. Natural environment and biodiversity

<Chemicals>

- Based on the Policy for Procurement of Eco-Friendly Goods and Services of the Tokyo Metropolitan Government (Public Works), we will promote reduction of use of materials containing chlorofluorocarbons, pigments containing lead and hexavalent chrome and paints containing volatile organic compounds (VOC).

<Consideration of environment such as air and soil>

- We will actively adopt low-emission and low-noise construction machines considering impact on surrounding environment and make efforts to reduce gas emissions and noise such as preventing unnecessary idling.

<Consideration of water environment>

- Based on the Outline of Promotion of Water Utilisation of the Tokyo Metropolitan Government, recycled water is planned to be used (the amount service water use of 18.5 m^2 per day* after the Games) and adoption of water saving equipment such as water saving toilets are planned at Olympic Gymnastic Centre.

*Estimation based on planned service water amount by the Tokyo Metropolitan Government's Green Building Program

<Ensuring bio-diversity>

- In selection of venue sites, we will select lands that can minimise the impact of venue construction on surrounding environment, such as utilisation of vacant lands.
- If it is necessary to cut or trim trees in venue sites, we will try to minimise those changes and transplant trees or create new green areas within the planned sites considering existing greenery.
- We will ensure green areas in the sites meeting greening standards of local regulations of the sites for the post-Games use.

e. Consideration of Human Rights, Labour, Fair Business Practices, etc.

<Consideration of accessibility>

- To construct the temporary venues and Overlay, we will apply the recommended standard, the most desirable standard of the Tokyo 2020 Accessibility Guidelines as far as possible.

<Consideration of labour, fair business practices, etc.>

- Based on the Basic Policy for Safety and Health of Construction of Tokyo 2020 Olympics and Paralympics Competition venues, we will create a work environment where women and the young can work without difficulties and implement construction giving the top priority to safety. Safety and health measures will be implemented in a uniformed manner regardless of prime or sub-contractors in cooperative relations between labour and management.
- For safety and health, we will conduct comprehensive risk assessment, we will take drastic measures for risk reduction, including selection of construction methods, and educate construction workers about safety and health. To motivate the workers to keep safety and health, we will manage their health conditions, set up lady's toilets and dressing rooms, take action to prevent second hand smoking and reduce long working hours.

3.2.7 Olympic/Paralympic Village

(1) Background

Olympic/Paralympic Village are located in Harumi-futo that connects the city centre such as Tokyo Station and Ginza and Water Front City, Toyosu and Ariake. This area also locates at a centre of concept of the Tokyo 2020 Games and a waterfront zone being developed after Tokyo was selected to be a host city. The Olympic/Paralympic Village are planned to provide quality services in terms of security and comfort during the Games, consider accessibility and sustainability and offer opportunity to experience Japanese traditional culture.

(2) Overview of facilities

(Overview)

- The village can be divided into three zones: Residential Zone consisting of the accommodations, Village Plaza where Olympic and Paralympic families, media and people related to residents visit and Operation Zone providing necessary functions to operate Olympic/Paralympic Village efficiently.
- Take advantage of its location, accommodations for athletes will offer the great view of Tokyo Bay and nearby green environment, considers traveling and accessibility of athletes and are equipped with relaxing spaces such as plazas.
- Temporary facilities are planned to be built at the village assuming various users during the Games. Its Main Dining locates at the centre of the village and be a centre of interactions for athletes to gather, communicate each other and share pleasures. At the same time, this place will be a centre of cultural exchanges where they can enjoy Japanese food culture. Additionally, Village Plaza employs Japanese traditional construction styles and uses wood.

(Location)

Olympic and Paralympic Village locates at 4 and 5 of Harumi, Chuo-ku and has an area of approximately 440,000 m^2. Accommodations are planned to use residential buildings (plate like structure) constructed by the re-development project for type 1 city block in the west area of 5, Harumi and area in the scope of this program is approximately180,000 m^2.

(Overview of the area)

In the venue area, there are facilities including Harumi Passenger Ship Terminal and the second urban beltway planned by the TMG is planned cross the area.

(3) Roles of each party

- The residential buildings, commercial facilities and squares in this city block to be built as an integrated part of the area by the re-development project are constructed by private businesses at their own expense following project plans set by the TMG, the project owner. Part of these buildings are to be used accommodations for athletes of the Tokyo 2020 Games.
- The Organising Committee will design the overlay of Olympic/Paralympic Village, design and construct temporary facilities such as Village Plaza and Main Dining Room and make necessary changes to the accommodation interiors for the Games. The Organising Committee will rent permanent residential parts from the private businesses through the TMG during the Games.

- After the Games, the Organising Committee will dismantle and remove temporary facilities and return permanent residential parts to the private businesses. The private businesses will convert those parts and sell or lease them according to the post-Games use plans.
- As for energy service for Olympic/Paralympic Village area after the Games, a private business openly selected will provide hydrogen, and other activities will be implemented based on consultation of stakeholders. A multi-mobility station, a terminal for BRT, and a common port for carsharing/bicycle sharing are planned to be built by the TMG and private businesses.

(4) Overview of city design

Olympic/Paralympic Village will be developed based on following three concepts of community designing, taking post-Games use into account.

a. A community where diverse people interact and live in comfort

Utilising the location close to the city centres, the community encourages interaction between various generations, areas and cultures and creates an urban space where people can enjoy living, pleasures, businesses, education, nurturing and well-being in cooperation with neighbour areas.

b. Community where people live close to water and green and feel relaxed and comfort

The exiting area, where a city goes together with nature, sitting in front of the sea and embraced by greenery, brings people a sophisticated urban life, peace and comfort.

c. A sustainable community utilising new technologies

The community incorporates cutting-edge hydrogen energy and energy efficient technologies and energy management technologies into infrastructures and daily lives in order to establish a self-controlled and distributed smart energy city built disaster resilience.

In the Village area after the Games, hydrogen stations will be built and hydrogen will be provided to vehicles such as fuel cell buses and, as the first practical use case in Japan, to the city blocks, residences, becoming a model area of hydrogen society. Additionally, it aims to be a model of advanced eco-friendly city by adopting fuel cells and storage batteries, recyclable energies and energy management.

To meet permanent demand, the demand for development caused by Olympic and Paralympic Games, such as post-Games use of the Olympic/Paralympic Village, the details of development of BRT that connects city centre and Water Front City, are being discussed. After the Games, BRT will add a line to directly connect the city centre and Village are After the Games in addition to the main line connecting the city centre city centre and Water Front City to improve the accessibility of the area. Moreover, the area will aim to increase its convenience of transit through building a common port for carsharing/bicycle sharing, reducing the environmental burden.

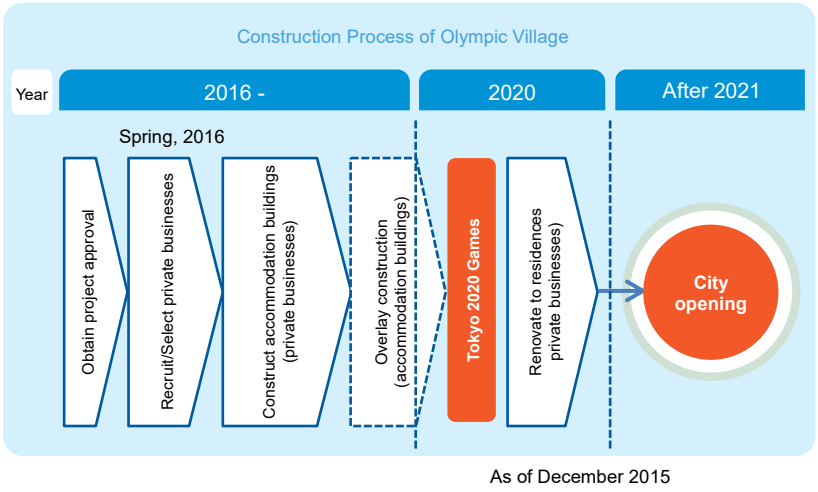
The area will provide various residences for foreigners and the elderly as well as condominiums and rental apartments and add facilities that can make the area vibrant and comfortable, commercial facilities and nursery centres for example. Lastly, the area will develop streets making use of view of water and greenery and costal levees to ensure security.

Furthermore, unified sign designs are used and barrier-free environment is prepared to create an area in which anyone, including the elderly and the foreigner can easily travel.

Figure: Olympic /Paralympic Village after the Tokyo 2020 Games (illustrative)

Source: Olympic/Paralympic Village after the Tokyo 2020 Games (illustrative) from the website of Bureau of Urban Development of Tokyo Metropolitan Government (http: //www.toshiseibi.metro.tokyo.jp/bosai/sensyumura/index.html) as of October 2, 2017

(5) Construction Process



Source: Measures of the Tokyo Metropolitan Government for 2020; towards post-Games legacies by Bureau of Tokyo 2020 Olympic and Paralympic Games Preparation

(6) Measures have been taken for the Games

a. “Operation BATON - Building Athletes’ village with Timber Of the Nation -”

In July 2017, the Tokyo 2020 Organising Committee has launched “Operation BATON - Building Athletes’ village with Timber Of the Nation -”, a project to build Village Plaza using domestic timbers and utilise them around Japan as a legacy of the Games.

Village Plaza is one of the major facilities of Olympic/Paralympic Village, which would be seen by many people through media. It is also a facility to support athletes’ lives during the Games, holds the team welcome ceremony, has shops, such as a flower shop and a variety store, cafes and the Media Centre, and is visited by certified Olympics and Paralympics families, press and people related to the residents. The Tokyo 2020 Games chose to use wood for this temporary building considering reuse of materials after the Games.

In this project, timbers used for Village Plaza are borrowed from municipal governments around Japan and after the Plaza was demolished, the timbers will be returned to each government to be reused, as a community facility for example. This program enables many regions in Japan to participate in the Games to work as one through making a facility using timbers from all around Japan, and it embodies diversity and harmony to use timbers from different regions to various parts of the building. Moreover, these barrowed timbers are domestic, certified by third parties and meet standards set by the Sourcing Code. Environmental burden is reduced and sustainability is ensured by reusing them after the Games in consideration of resource circulation.

Figure: image of inside of Village Plaza

b. Promotion of 3Rs for Village accommodation facilities

Accommodations for Olympic/Paralympic Village are temporary prepared using residential buildings that are being built by the private businesses. Once the residential buildings' structure skeletons are completed, overlay and Furniture, Fixtures and Equipment(FF&E) for the Games are added and temporary used during the Games; then the buildings will be returned to the skeletons again and completed as new apartments to be sold.

To make it possible for a number of athletes to stay in a single building, several private rooms and small bathrooms are arranged in the each unit of the village. Therefore, in order to sell and rent as a new housing after the Games, re-renovation is necessary. The TMG is considering re-use of the overlay and FF&E, such as water heaters, and interiors added for the Games to public facilities because the units will be required different specification as residences, and using these overlay and FF&E is difficult as they could get degraded during two to three years after the Games until the residences are completed. To further promote 3Rs, the TMG is discussing how to reuse the facilities, such as water heaters, air conditioners and modular bathrooms, and interior material or create memorabilia using them based on ideas widely gathered from the public.

c. Consideration of Human Rights, Labour, Fair business Practices, etc. during the Games operation

Detailed consideration will be given to the design of Olympic/Paralympic Village based on the Tokyo 2020 Accessibility Guidelines to make Olympic/Paralympic Village accessible to all athletes and stakeholders of the Tokyo 2020 Games.

- We will build accessible toilets for both male and female at facilities shared by many people
- Consider accessibility for a boarding zone of a transit mall so people in wheelchairs can get on and off smoothly
- We will secure proper labour management for construction of temporary facilities of Olympic/Paralympic Village
- We will use accessible busses so that people in wheelchairs can get on and off easily
- As consideration of athletes and stakeholders from abroad, we will adopt pictogram icons for guiding signs and descriptions in multiple languages.
- We will prepare places to pray for athletes (for Christians, Jews, Moslems, Buddhists and Hindus)

(7) Consideration of sustainability of residential buildings of Olympic/Paralympic Village

Olympic/Paralympic Village are temporary prepared in barrowed residential buildings that are being built by the private businesses in the city block re-development project implemented by the TMG and those residences will be sold or rented as new apartments after the Games.

Post-Games Olympic/Paralympic Village aims to be a place everyone wishes to live, where various people interact each other and live in comfort, live close to water and nature and feel peace and relaxed, having a concept of a sustainable city considering environment utilising new technologies. In addition to 21 plate like buildings in city block 5-3, 5-4, 5-5 and 5-6 and a commercial building in zone 5-7, two skyscraper towers are planned to be built in zone 5-5 and 5-6 after the Games.

For construction of Olympic/Paralympic Village, apply not only CASBEE for Urban Development, a tool to assess the holistic development project including group of buildings but also specific factors of the LEED-ND (Neighbourhood Development) standards to the full to its environmental measures based on the energy-saving standard.

Moreover, integrated construction by city blocks is planned for this broad area, utilising its characteristics of standing in front of the sea and embraced by greenery, and it will create spacious openings. The plan also takes neighbouring environment, including Harumi-futo park and green spaces, into consideration. Through this plan, unity of streets, residences and waterside area is ensured, and a great landscape by the water will be formed.

Following measures considering sustainability are planned for the residential buildings.

a. Climate change

(Consideration at planning, designing phase)

- We will reduce heat load to the buildings by using heat insulation to outer walls and roofs and blocking sunlight into windows by setting balconies (City block 5-4, 5-5 and 5-6).

(Energy saving buildings)

- Obtain heat insulation function class of around 4 based on the evaluation standards defined in the laws related to promotion of ensuring residential quality (City block 5-4, 5-5 and 5-6).

(Energy management)

- We will adopt energy management systems for the entire area and each city block.

(Adoption of energy-efficient facilities and devices)

- We will achieve ERR of more than 5%, the reduction rate of energy use of entire facility systems (City block 5-4, 5-5 and 5-6). Also obtain certificate of low-carbon building based on the Low Carbon City Act.
- Equip each residences with home fuel cells, Ene-farm (City block 5-4, 5-5 and 5-6).
- We will set pure hydrogen batteries and use electricity and heat at residential communal areas of each city blocks.

(Adoption of recyclable energies)

- Build photovoltaic panels of approximately 2,300 m^2 in total.
- Utilisation of exhaust heat from an incineration plant, a local energy source, is being discussed (City block 5-3)。

b. Resource management

(Saving resource and control of waste)

- Construction waste produced from construction of planned buildings are separated and collected, and waste is recycled as much as possible.
- Partial excavated soil produced from drilling operations is used as backfilling soil within the construction sites.

(Reuse/Recycle)

- Request cooperation in actively using eco-friendly goods based on the Guidelines for Construction Recycling (for private sector) for construction done by private businesses.

(Utilisation of water resource)

- As a disaster facility, build a rain water reservoir (150 m^3 for each city block).

c. Natural environment and biodiversity

(Soil)

- For areas which have a risk of soil pollution based on the usage records, soil pollution examinations are conducted and they are confirmed to be safe. If pollution is found during construction, we will immediately implement proper countermeasures based on laws and regulations

(Greenery)

- Each zone ensures greenery of more than 40%
- In addition to greenery spaces of approximately 36,400 m^2 in city blocks including the commercial building, we will create roof greenery of approximately 450 m^2 and build playground and fitness equipment to generate green-rich open spaces where everyone can enjoy leisure. These green spaces are allocated considering harmony and continuity between existing parks and seas surrounding three sides of the area, creating open greenery space taking advantage of its location by the sea.

(Recovery of natural environment/ensuring bio-diversity)

- We will plant high and low trees and groundcover in the open spaces to create a new nurturing and habitat environment for animals and plants.

(Landscape)

- We will create a new landmark and integrated city at the Water Front area by devising allocation and designs of buildings, considering the whole landscape of the Water Front area.

d. Consideration of Human Rights, Labour, Fair Business Practices

(Consideration of accessibility)

- We will design buildings beyond the standard level required by Tokyo 2020 Accessibility Guidelines set by the Tokyo 2020 Organising Committee.

(Consideration of labour, fair business practices)

- For construction of residential buildings of Olympic/Paralympic Village developed by private vendors, we will create a work environment where women and the young can work without difficulties and implement construction giving the top priority to safety based on the Basic Policy for Safety and Health of Construction of Tokyo 2020 Olympics and Paralympics Competition venues. Safety and health measures will be implemented in a uniformed manner regardless of prime or sub-contractors in cooperative relations between labour and management.
- For safety and health, we will conduct comprehensive risk assessment, take drastic measures for risk reduction, including selection of construction methods, and educate construction workers about safety and health. To motivate the workers to keep safety and health, we will manage their health conditions, set up lady's toilets and dressing rooms, take action to prevent second hand smoking and reduce long working hours.

(8) Energy development plan for Village area

For the energies for Village area after the Games, the TMG developed Energy Provision Plan for Village Area in March 2017 that discusses the future of energies in Village area specific development planned now and expected progress of actions.

The Plan defines as 'future that should be achieved' following three pints: 1) ensure independence, 2) balance between comfort and eco life and 3) a model of advanced environmental city. It stated following direction of measures that should be taken to realise these three.

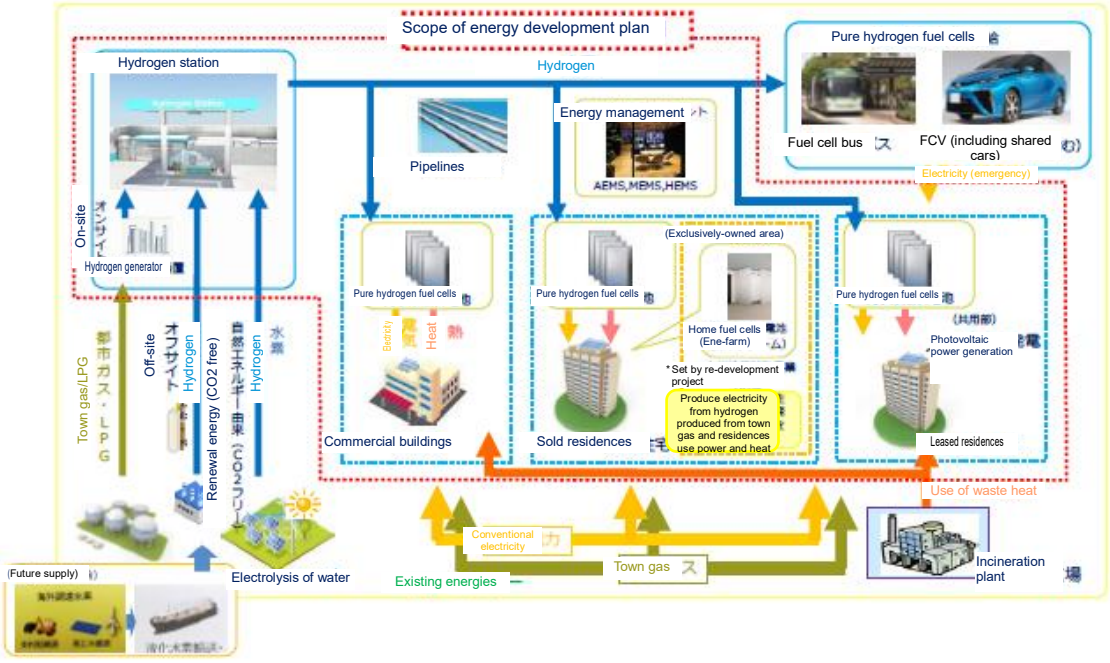


Figure: The entire picture of energy development (Source: Olympic/Paralympic Village Area Energy Development Plan)

Following measures are described in the Plan.

(Provision of hydrogen (integrated operation of energy provision for vehicles and city blocks)

Hydrogen stations are built to provide hydrogen to fuel cell vehicles and hydrogen pipelines are laid to transfer hydrogen from the stations to city blocks. Then the pure hydrogen fuel cells allocated to each block provides electricity and heat to the buildings. These efforts will produce legacies such as leading progress towards hydrogen society, strengthening of resilience of a city and a new project model using hydrogen in general urban zones.

(Provision of heat)

We will consider provision of exhaust heat from the incineration plant to commercial facilities and residences for the elderly.

(Utilisation of solar electricity)

We will build solar panels on buildings in all city blocks and utilise this CO2-free energy for shared spaces of the residential buildings to reduce dependency on conventional electricity.

(Energy management)

In addition to setting pure hydrogen fuel cells and solar power generators, we will optimise energy use of the area as a whole by adopting an energy management system to adjust electricity output of various devices depending on the supply and demand balance on electricity. Moreover, we will build up a movement towards energy saving among residents by visualising status of energy use.

(Presentation business)

Regarding the Tokyo 2020 Games as an opportunity to garner attention from the world, we will accelerate the implementation of partial hydrogen provision during the Games to promote the effectiveness of hydrogen technologies and its advanced nature. The TMG, Tokyo Environmental Public Service Corporation, Fukushima Prefectural Government and the National Institute of Advanced Industrial Science and Technology are jointly taking actions, aiming at utilisation of CO_2-free hydrogens produced in Fukushima. Use of CO_2-free hydrogen from Fukushima during the Games will be discussed in cooperation with stakeholders.

4. Management and Tools for Realisation of the Plan

To put in place specific efforts and to achieve the goals set out in the Plan, establishment of a management system working for implementation of the Plan is vital.

The Tokyo Organising Committee will implement a management system in line with ISO 20121:2012, an international standard for the Event Sustainability Management System (ESMS) developed to help events be sustainable, and monitor progress, continuing with exchanges of opinions with a wide range of people including experts in various fields as we have done so far to develop the Plan. In accordance with progress and changing situations about promotion of each programme, we will also conduct review and continual improvement of the efforts of the Plan.

4.1 Sustainability Management System in line with ISO 20121

The ISO 20121 was issued in 2012 coinciding with the establishment of a management system for the sustainability of the London 2012 Olympic and Paralympic Games. It provides a framework that contributes to considering sustainability of an event by managing not only environmental but also economic and social impact related to event operations.

Prior to developing the Plan, the Tokyo Organising Committee has set the “Sustainability Policy,” required by the ISO 20121, in which we deliver our underlying concept to realise sustainable Games operations and declare that we will establish a management system in line with the ISO 20121. (See Appendix 1 for the text of the Sustainability Policy.)

The Plan and the goals thereof fall on “Set targets and plans to achieve them,” one of the requirements of the ISO 20121. We ensure the delivery of the Plan by continual improvement by following the PDCA cycle composed of operational management, monitoring and evaluation of results, and correction of any non-conformity.

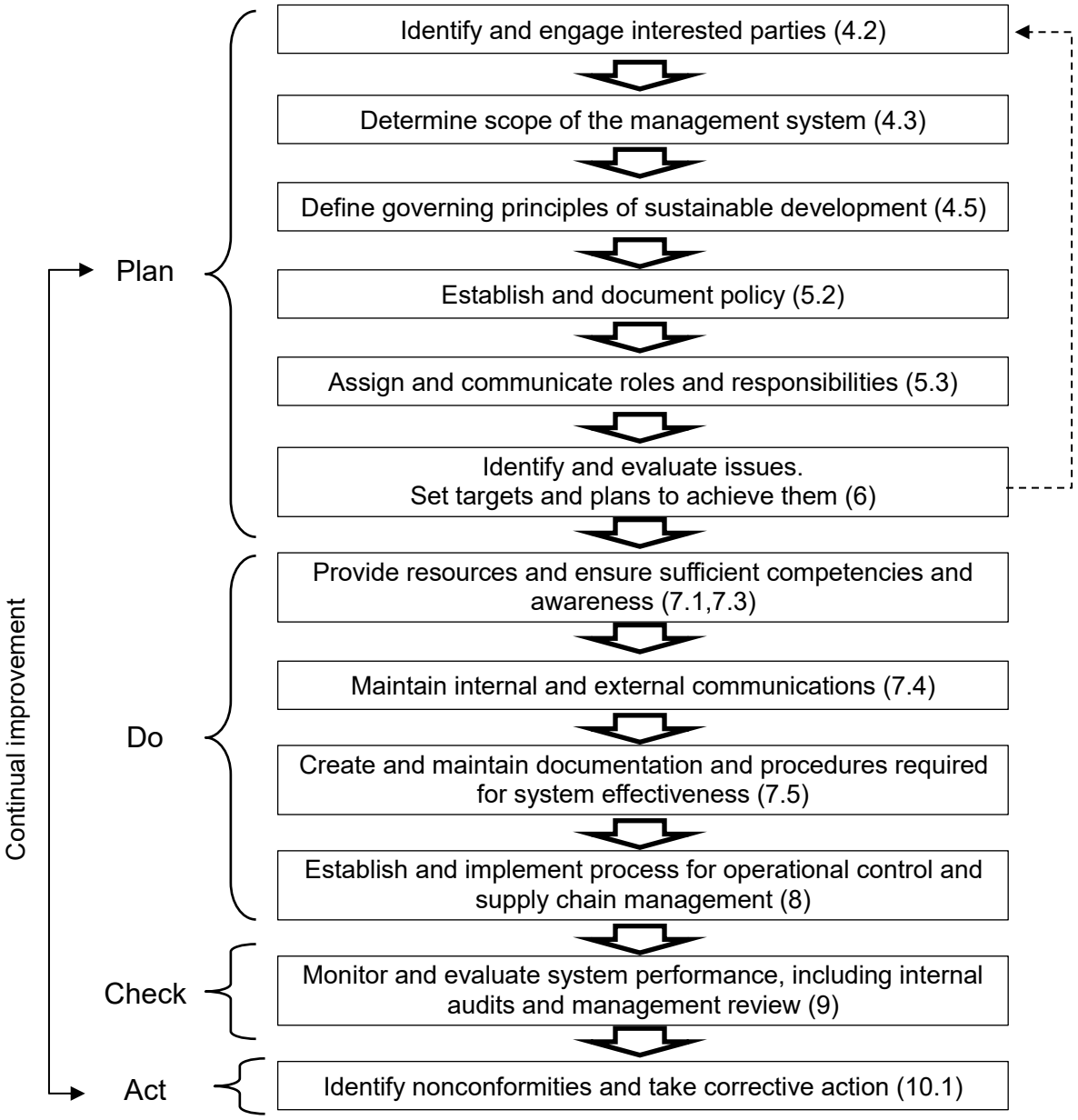


Figure Event sustainability management system model for this International Standard

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

4.2 Monitoring

4.2.1 Establishment of a monitoring system

Olympic and Paralympic Games are the world's largest sports events, and sustainability efforts against environmental issues should be promoted in a large scale that we have never experienced before in this country.

It is essential that not only striving to implement the Plan, we should properly monitor such activities including in preparation phases so that our achievements can build a legacy.

The ISO 20121 requires the practice of "monitoring, measurement, analysis and evaluation" to manage targets and plans to achieve them. To enable proper self-administration of the efforts of the Plan based on the requirement, we are working to establish a monitoring system in which targets to be measured and monitored are set and methods and schedules are determined. We will thereby implement proper evaluation of achievements of the efforts and the availability of the management system.

The Plan has set out the efforts that are going to be promoted by each FA including the measurement to reduce CO_2 emissions, and we will be monitoring the progress on a regular basis.

Progress report will be reviewed by the top management of the Tokyo Organising Committee, and the entire process of the Tokyo Organising Committee and good practices of FAs are shared in the "Sustainability Strategic Meeting," attended by Executive Directors to have discussions on sustainability. In this manner, we will promote the efforts, raising our level across the committee.

Regarding reuse and recycling of products procured by delivery partners as well as the Tokyo Organising Committee, we will keep track of each process by establishing a management system that collects comprehensive information from procurement to disposal phases.

4.2.2 Sustainability Report

The Tokyo Organising Committee will prepare and publish three Sustainability Reports on developments of the efforts of the Plan. We will compile a progress report in spring of 2019, the year before the delivery of the Games, and pre-Games and post-Games reports in spring and winter of 2020 before and after the Games respectively.

Additions and changes made in the Plan after the Plan Version 2 is completed will be incorporated in the reports, and the two reports planned to be developed prior to the Games will provide an update on sustainable Games operations.

The reports will appropriately present discussion and implementation results at each stage, and also experiences, insights and challenges gained and faced during the process to serve as a learning legacy after the Tokyo 2020 Games.

The reports will be prepared by obtaining opinions from the Commission consisting of experts to effectively report impacts of the delivery of the Games on sustainable development, referring to requirements for regular activity reports by the United Nations Global Compact and disclosures in universal and topic-specific standards in the GRI Standards.

The IOC has introduced a new framework (Legacy Reporting Framework *1) to collect legacy of the Games along with the conventional sustainability reports, replacing the Olympic Games Impact Study (OGI)*2. The Tokyo Organising Committee has decided to follow this IOC's policy.

After moving to the new framework, the Sustainability Reports will continue providing analysis and reports on both pluses and minuses of the Games on sustainability.

*1 Legacy Reporting Framework: The framework applied to identify, describe, analyse and measure legacy of the Games.

*2 The Olympic Games Impact Study: The study to report impacts of the Games on the environment, social culture and economy of the host city and region in tangible and intangible forms.

4.3 Other Studies and Progress Management

4.3.1 Study framework by the Commission members and other experts

In considering sustainability of the Games, it is required to promote efforts in more appropriate and efficient manner in response to global and domestic trends. The Tokyo Organising Committee has therefore established the Urban Planning and Sustainability Commission (hereinafter referred to as the “Commission”), consisting of academics and experts from NGOs to have required discussions.

In the Commission, the following two groups have been established to address specific issues depending on themes: 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.

At these meeting boards, officials from the Tokyo Metropolitan Government and the Government of Japan participate in discussions as members or observers to examine feasibility of direction and measures for each theme.

These meetings boards have been carrying out specific studies in public during the development of the Plan, and will continue reporting the status and monitoring the progress of the efforts based on the Plan.

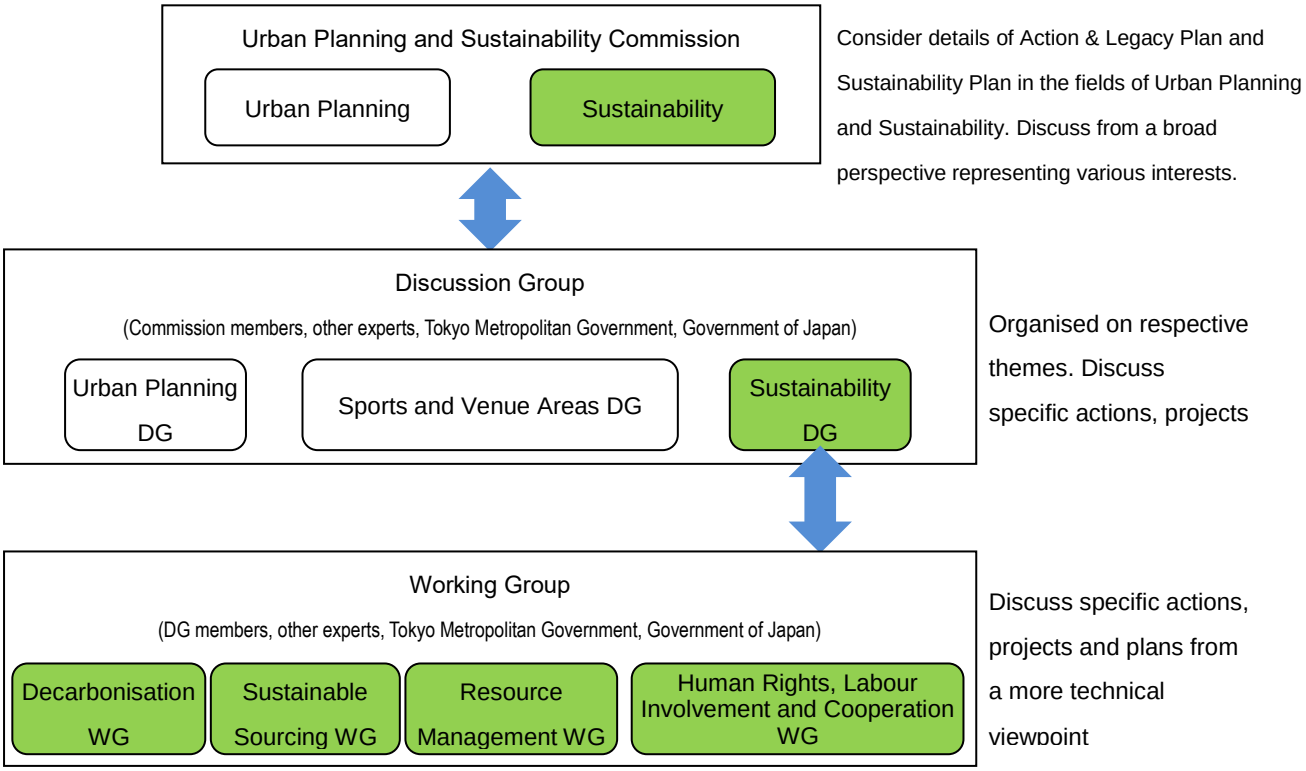


Fig : Study Framework

4.3.2 Participation among entities through public comments

The Tokyo Organising Committee has been developing the Plan by discussing with various agents and incorporating a wide range of opinions. From an early stage of the development, we have solicited comments online and held individual hearing sessions to collect proposals and advice from the public as well as NGOs/NPOs with expertise in various sustainability-related fields. Although the Plan is now completed, we will continue seeking advice from outside entities to ensure to implement the efforts.

We have also established the “Sponsor Sustainability Network,” which shall serve as a liaison and collaboration body with sponsors, in order to obtain their perspectives by exchanging opinions toward realisation and continual improvement of the efforts. Collaboration with them will contribute to enhancing consideration to sustainability.

4.4 Devising and Using the Sustainable Sourcing Code

Tokyo 2020 will procure many products and services to prepare for and operate the Games. Since it has impact on direct suppliers and licensees and also their supply chains, the management is important to realise sustainable Games operations.

Tokyo 2020 has devised the Sustainable Sourcing Code to require suppliers, licensees and their supply chains to give due consideration to sustainability for production and distribution of products and services Tokyo 2020 procures.

From the perspective of not only compliance with relevant laws and regulations, but also reduction of environmental impacts, respect for human rights, ensuring of appropriate working conditions, and promotion of fair business practices, the Sourcing Code established standards for sustainability, and procedures for ensuring compliance. Furthermore, the Code defines individual codes for timber, agricultural products, livestock products, fishery products, paper and palm oil to ensure consideration for sustainability at the production stage.

Tokyo 2020 also has established the Grievance Mechanism for accepting and properly dealing with reports of non-compliance with the Sourcing Code. This mechanism is based on the concept of the “Remedy” stated in the United Nations Guiding Principles on Business and Human rights and intended to resolve cases based on mutual agreement by facilitating constructive discussion among parties concerned.

Tokyo 2020 will revise the Sourcing Code whenever necessary based on the PDCA cycle via appropriate process.

Pursuing initiatives concerning sustainability in its procurement, Tokyo 2020 has requested TMG and national governmental bodies to respect the Sourcing Code concerning products and services procured by them for the Games, to encourage expansion of similar initiatives.

Meanwhile, concerned entities of the Tokyo Metropolitan Government and the Government of Japan that are subject to related laws and regulations including the Agreement on Government Procurement shall observe them.

The following codes and regulations, which are being issued separately from this Plan, provide further details on sustainable sourcing and supply chain management.

- Tokyo 2020 Olympic and Paralympic Games Fundamental Principles for the Sustainable Sourcing Code (January 2016)
- Tokyo 2020 Olympic and Paralympic Games Sustainable Sourcing Code (1st edition: March 2017, 2nd edition: June 2018)
- Sustainable Sourcing Code for Timber (March 2017)
- Sustainable Sourcing Code for Agricultural Products (March 2017)
- Sustainable Sourcing Code for Livestock Products (March 2017)
- Sustainable Sourcing Code for Fishery Products (March 2017)
- Sustainable Sourcing Code for Paper (June 2018)
- Sustainable Sourcing Code for Palm oil (June 2018)
- Grievance Mechanism for the Sustainable Sourcing Code　Operational Standards (April 2018)

4.5 Conducting Environmental Assessment Surveys

The Tokyo Metropolitan Government has conducted environmental assessments, as the dominant part to respond to the IOC's request, 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 early-phase environmental assessment surveys at the inviting phase and is conducting operational-phase environmental assessment surveys and follow-up surveys based on the Tokyo 2020 Olympic and Paralympic Games Guidelines for Environmental Assessment, (devised by the Bureau of the Environment, Tokyo Metropolitan Government, in June 2016), the guidelines in compliance with the Tokyo Metropolitan Environmental Impact Assessment Ordinance.

The surveys are intended for event venues, outdoor events, and plans for the Games, and their impact at each point before, during and after the Games shall be predicted and assessed (The items of the environmental assessment survey are listed in the following table). The follow-up surveys are conducted to review and examine results of provided predictions and assessments and to take additional measures as needed.

The environmental assessment surveys conducted so far have helped construction and improvement works of venues to be carried out in consideration of environment conservation through predictions and assessments to avoid and minimise environmental impact.

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 transport; 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

The tables below list up: the publications of the environmental assessment surveys on construction and improvement works for the venues; and the dates for the Tokyo 2020 Olympic and Paralympic Games Environmental Assessment Committee, attended by external experts. (Administered by Bureau of the Environment, Tokyo Metropolitan Government).

Table: Publications of the environmental assessment surveys

Venue name	Published date					
	Environmental assessment surveys in the operational phase				Follow-up surveys	
	Survey plan	Assessment Draft	Comments and responses	Assessment survey	Plan	Report
Olympic Stadium	March 2014	June 2016	August 2016	October 2016	October 2016	
Nippon Budokan	March 2014	December 2017	February 2018	March 2018	March 2018	
Ariake Arena	March 2014	February 2016	April 2016	January 2017	January 2017	December 2017
Olympic Gymnastic Centre	March 2014	February 2017	May 2017	August 2017	August 2017	
Ariake Tennis Park	March 2014	April 2017	June 2017	October 2017	October 2017	
Seaside Park Hockey Stadium	March 2014	April 2017	June 2017	January 2018	January 2018	
Sea Forest Cross-Country Course	March 2014	December 2016	February 2017	March 2017	March 2017	
Sea Forest Waterway	March 2014	February 2016	April 2016	July 2016	July 2016	
Canoe Slalom Course	March 2014	March 2017	May 2017	June 2017	June 2017	
Dream Island Archery Field	March 2014	January 2016	March 2016	July 2016	July 2016	
Olympics Aquatics Centre	March 2014	February 2016	April 2016	October 2016	October 2016	December 2017

Equestrian Park	June 2016	September 2016	November 2016	December 2016	December 2016	March 2018
Equestrian Park（Part2）		May 2017		August 2017	August 2017	
Musashino Forest Sport Plaza	March 2014	March 2015	June 2015	August 2015	October 2015	August 2017
Olympic Village	March 2014	March 2015	July 2015	December 2015	April 2016	March 2018

Table: The dates for the Tokyo 2020 Olympic and Paralympic Games Environmental Assessment Committee

Fiscal year	Date		
2017	✓ 20, February 2018	✓ 16, February 2018	✓ 22, December 2017
	✓ 29, September 2017	✓ 26, July 2017	✓ 21, July 2017
	✓ 14, July 2017	✓ 26, May 2017	✓ 22, May 2017
2016	✓ 29, March 2017	✓ 24, February 2017	✓ 25, January 2017
	✓ 25, November 2016	✓ 17, November 2016	✓ 30, September 2016
	✓ 1, September 2016	✓ 30, August 2016	✓ 8, July 2016
	✓ 23, June 2016	✓ 17, June 2016	✓ 16, May 2016
	✓ 13, May 2016	✓ 27, April 2016	
2015	✓ 23, March 2016	✓ 29, February 2016	✓ 20, January 2016
	✓ 26, October 2015	✓ 5, October 2015	✓ 22, June 2015
	✓ 12, June 2015		
2014	✓ 25, March 2015	✓ 28, May 2014	✓ 16, May 2014

The Tokyo 2020 Olympic and Paralympic Games Environmental Assessments have been carried out, aiming at contributing to improvement of Tokyo's sustainability taking the opportunity of the Games. The Tokyo Metropolitan Government will continue environmental assessments and conduct follow-up surveys to track outcomes against predictions and assessments, regarding the surveys as a tool for promoting the Plan.

Appendix 1

This policy indicates our intention towards the sustainable Games and declares a management system according to ISO 20121.

Tokyo 2020 Olympic and Paralympic Games
Sustainability Policy

Tokyo 2020 Olympic and Paralympic Games, as the most innovative in history, have a vision of bringing positive reform to the world by building on three core concepts: “Achieving Personal Best,” “Unity in Diversity,” and “Connecting to Tomorrow.”

The Tokyo Organising Committee of the Olympic and Paralympic Games (hereinafter referred to as “Tokyo 2020”) has established the Urban Planning and Sustainability Commission as a comprehensive organisation to make this vision come true in every aspect of the Games covering a wide range of fields across time and regions. By building the cross-sectional framework, we will strengthen sustainable efforts of the organisation as a whole and contribute to success of the Games.

In implementing sustainable efforts, Tokyo 2020 advocates the four sustainable development principles, Stewardship, Inclusivity, Integrity and Transparency, which are harmonized with the Games vison, while embracing the sustainability concept of the Games; “Be better, together – For the planet and the people”.

We hence aim to achieve sustainable operations of the Games in line with “Include sustainability in all aspects of the Olympic Games” proposed in the Olympic Agenda 2020 adopted by the International Olympic Committee (IOC) as well as the IOC Sustainability Strategy.

Main themes and Goals on Sustainability

Tokyo 2020 will work on various efforts that shall form sustainability, satisfying need and expectations of stakeholders in compliance with relative laws and requirements at the same time. We will also focus on the following five main themes to maximise benefits of the efforts and thus contribute to achieving the Sustainable Development Goals (SDGs) provided by the 2030 Agenda for Sustainable Development.

Climate Change: Towards Zero Carbon

In 2020 when the Paris Agreement starts, this goal represents the intention of Tokyo 2020 and delivery partners to manage the Games focusing on maximum energy savings and use of renewable energy, and thereby to build the foundation of decarbonisation with the effort of everyone, ahead of the world.

Resource Management: Zero Wasting

The Tokyo 2020 Games conducts resource management by all, aiming to suppress deforestation and land devastation caused by resource exploitation as well as to bring environmental load by waste into zero, on the basis of utilizing resources without any wasting throughout the supply chain.

Natural Environment and Biodiversity: City within Nature/Nature within the City

Looking forward to the legacy, we will restore and form a rich ecological network through the Games and contribute to the creation of a new urban system that will improve comfort and resilience.

Consideration of Human Rights, Labour and Fair Business Practices:
Celebrating Diversity—Inspiring Inclusive Games for Everyone—

The Tokyo 2020 Games aim to firmly incorporate diversity and inclusion (D&I) into every areas of Games operation to respect human rights of all people involving with the Games.

Tokyo 2020 will also operate the Games in accordance with the UN's Guiding Principles on Business and Human Rights. It seeks to prevent or mitigate adverse human rights impacts that are caused through the Games-related activities, even if they are outside of management control area of Tokyo 2020 (i.e. other organisations or individuals). The Tokyo 2020 Games aim to avoid causing or contributing to any discrimination such as race, colour, sex, sexual orientation, language, religion, political or impairment/disability, never encourage any issues of child labour, forced labour and excessive labour through the entire Games-related activities, even indirectly.

Furthermore, Tokyo 2020 ensures fair business practices without corruptions or anti-competitive deals.

Involvement, Cooperation, and Communications (Engagement):
United in Partnership & Equality—Inspiring Inclusive Games for Everyone—

We will be preparing for and operating the Games that should be open to everyone who deserves to play a leading part, through participation and cooperation by many people, so that we promote interactions and trainings with diverse entities beyond boundaries and generations and establish a society where Diversity & Inclusion and engagement are achieved and diverse entities are taking part in.

Measures to consider sustainability

Tokyo 2020 will realise the themes by implementing the following measures.

- Fostering close cooperation among the Government of Japan, Tokyo Metropolitan Government, and other local governments, IOC, International Paralympic Committee (IPC), Japanese Olympic Committee (JOC) and other delivery partners
- Increasing transparency and respecting input from experts of "Urban Planning and Sustainability Commission" and the public
- Integrating sustainability in the management of Tokyo 2020
- Implementing sustainable sourcing and promoting sustainability among suppliers, licensees and their supply chains that undertake manufacturing and distribution of products and services required for the Games

Tokyo 2020 will formulate plans on which each responsible entity works to achieve the goals, and implement a cycle of continuous monitoring, evaluation and improvement of results as well as submit regular reporting. We will also carry out continual improvement of a sustainability management system as well, investing adequate resources and delivering enough educational opportunity to ensure the achievement of the themes.

Legacy development

We have set “Japanese-style sustainable society” as a theme of a sustainability legacy and will strive for the following items through sustainable operations of the Games.

- Realising a sustainable low carbon/ carbon-free urban environment
- Realising sustainable use of resources
- Realising a comfortable urban environment considering water, green living and biodiversity
- Realising a society where human rights and labour practices are considered
- Encouraging participation and cooperation toward a sustainable society

Yours sincerely,

Toshiro Muto
CEO, The Tokyo Organising Committee of the Olympic and Paralympic Games
31st May 2018

Olympic and Paralympic Games Venue Master Plan

Olympic Games Venue Master Plan as of April 2018
Paralympic Games Venue Master Plan as of March 2018

□ ··· Olympic Games △ ··· Paralympic Games

HERITAGE ZONE

1 Olympic Stadium
□△ Opening and Closing Ceremonies, Athletics
□ Football

2 Tokyo Metropolitan Gymnasium
□△ Table Tennis

3 Yoyogi National Stadium
□ Handball
△ Badminton, Wheelchair Rugby

4 Nippon Budokan
□△ Judo
□ Karate

5 Imperial Palace Garden
□ Athletics (Race Walk)

6 Tokyo International Forum
□ Weightlifting
△ Powerlifting

7 Kokugikan Arena
□ Boxing

8 Equestrian Park
□ Equestrian (Dressage, Eventing, Jumping)
△ Equestrian

9 Musashino Forest Sport Plaza
□ Badminton,
Modern Pentathlon (Fencing)
△ Wheelchair Basketball

10 Tokyo Stadium
□ Football,
Rugby,
Modern Pentathlon
(Swimming, Fencing, Riding, Laser-Run)

11 Musashinonomori Park
□ Cycling (Road (Road Race: Start))

TOKYO BAY ZONE

12 Ariake Arena
□ Volleyball (Volleyball)
△ Wheelchair Basketball

13 Olympic Gymnastic Centre
□ Gymnastics
△ Boccia

14 Olympic BMX Course
□ Cycling (BMX Freestyle, BMX Racing), Skateboarding

15 Ariake Tennis Park
□ Tennis
△ Wheelchair Tennis

16 Odaiba Marine Park
□△ Triathlon
□ Aquatics (Marathon Swimming)

17 Shiokaze Park
□ Volleyball (Beach Volleyball)

18 Aomi Urban Sports Venue
□ Basketball (3x3), Sport Climbing
△ Football 5-a-side

19 Seaside Park Hockey Stadium
□ Hockey

20 Sea Forest Cross-Country Course
□ Equestrian (Eventing (Cross Country))

21 Sea Forest Waterway
□△ Rowing
□ Canoe (Sprint)
△ Canoe

22 Canoe Slalom Course
□ Canoe (Slalom)

23 Dream Island Archery Field
□△ Archery

24 Olympic Aquatics Centre
□ Aquatics
(Swimming, Diving, Artistic Swimming)
△ Swimming

25 Tatsumi International Swimming Centre
□ Aquatics (Water Polo)

26 Makuhari Messe Hall A
□ Taekwondo, Wrestling
△ Sitting Volleyball

27 Makuhari Messe Hall B
□ Fencing
△ Taekwondo, Wheelchair Fencing

28 Makuhari Messe Hall C
△ Goalball

OTHER VENUES

29 Tsurigasaki Beach Surfing Venue
□ Surfing

30 Saitama Super Arena
□ Basketball (Basketball)

31 Asaka Shooting Range
□△ Shooting

32 Kasumigaseki Country Club
□ Golf

33 Enoshima Yacht Harbour
□ Sailing

34 Izu Velodrome
□△ Cycling (Track)

35 Izu Mountain Bike Course
□ Cycling (Mountain Bike)

36 Fuji International Speedway
□△ Cycling (Road)

37 Fukushima Azuma Baseball Stadium
□ Baseball/Softball

38 Yokohama Stadium
□ Baseball/Softball

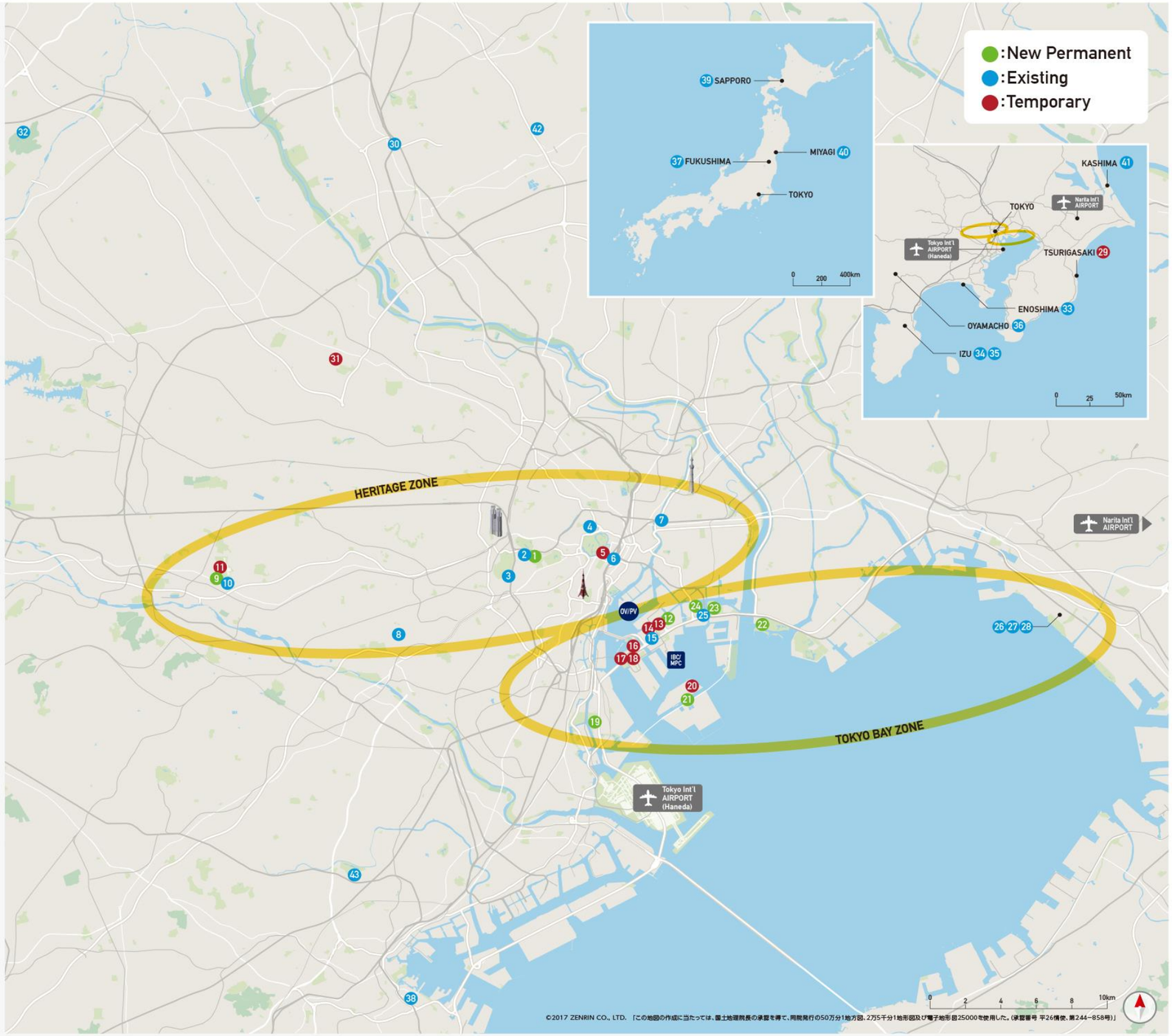
39 Sapporo Dome
□ Football

40 Miyagi Stadium
□ Football

41 Ibaraki Kashima Stadium
□ Football

42 Saitama Stadium
□ Football

43 International Stadium Yokohama
□ Football



OV/PV Olympic/Paralympic Village
IBC/MPC IBC/MPC Tokyo International Exhibition Centre (Tokyo Big Sight)
00 Competition Venue

Road Network
Motorway
Major urban arterial network

Rail Lines
Japan railway
Private railway

The Tokyo Organising Committee of the Olympic and Paralympic Games