

Environmental Report 2024

Digest
Version



Bureau of Waterworks
Tokyo Metropolitan Government

Bureau of Waterworks, Tokyo Metropolitan Government

Environmental Basic Principle

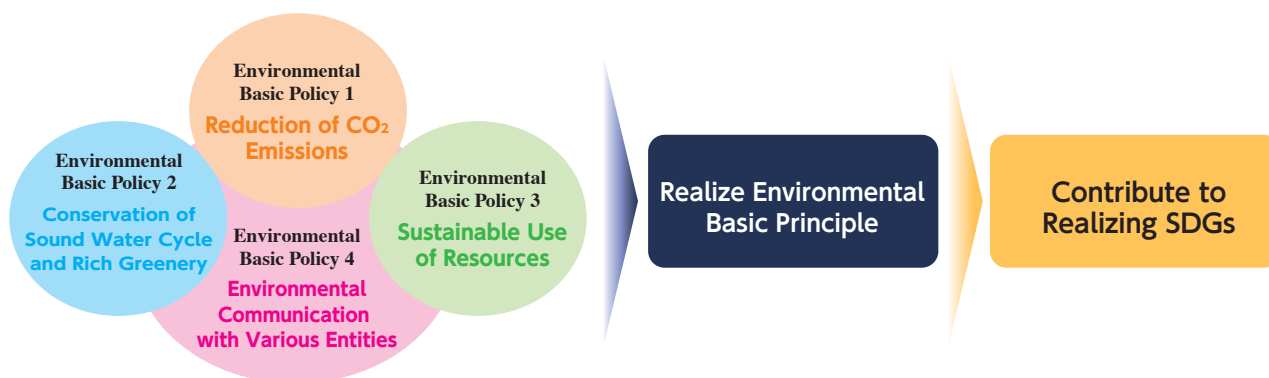
Water is essential for our lives. Protecting the global environment which nurtures water is a common issue to all humankind.

Through business activities that supply safe and high quality tap water stably, Bureau of Waterworks, Tokyo Metropolitan Government, will strive to pass on our rich global environment to the next generation.

Bureau of Waterworks, Tokyo Metropolitan Government

Environmental Five-Year Plan 2020-2024

Bureau of Waterworks, Tokyo Metropolitan Government, formulated a “Five-Year Environmental Plan 2020-2024” in March 2020. In the plan, we established the following 4 basic environmental policies, to reduce negative impacts on the environment. Based on these policies, we have stated 37 specific initiatives and targets. To achieve this, we will realize the Environmental Basic Principle and contribute to the realization of the SDGs.



Policies	Initiatives
Reduction of CO ₂ Emissions	<p>Bureau of Waterworks consumes a large amount of energy. To reduce CO₂ emissions, we are reducing our energy consumption and introducing renewable energy.</p> <ul style="list-style-type: none"> ■ Promote of Energy Saving ■ Expand Introduction of Renewable Energy ■ Promote development of a Carbon Free Society
Conservation of Sound Water Cycle and Rich Greenery	<p>Tap water is made from precious and limited water. We are making approaches to conserve water and greenery by effectively using water resources, and protecting and nurturing the water conservation forests.</p> <ul style="list-style-type: none"> ■ Preserve and improve Water Conservation Forests ■ Contribute to forming of urban* water and greenery networks ■ Effective use of water resources <p><small>*Refers to the Tokyo Metropolitan area excluding water conservation forest area</small></p>
Sustainable Use of Resources	<p>We are carrying out approaches toward sustainable use of resources by controlling waste that is discharged due to water supply projects and promoting recycling.</p> <ul style="list-style-type: none"> ■ Reduce waste and promote recycling ■ Go paperless ■ Promote conversion to plastic-free
Environmental Communication with Various Entities	<p>We are carrying out approaches to improve effectiveness of environmental measures through environmental education at elementary schools, raising awareness among relevant persons, communicating environmental information, etc., and by communicating with various parties such as customers and corporations.</p> <ul style="list-style-type: none"> ■ Collaborate with customers ■ Collaborate with various entities including corporations

Reduction of CO₂ Emissions

Bureau of Waterworks consumes approximately 800 GWh of electricity per year to purify and provide water. We are making innovations to send water using less power by replacing equipment with energy saving models because most of power use results from operation of purification plants and water supply stations.

Using energy saving pump equipment

Pump equipment that sends water from purification plants and water supply stations consume a lot of electricity. We have introduced low energy loss inverters when updating pump equipment to reduce electricity consumption. During FY 2023, 16 energy-saving pumps were installed.



Energy saving pump equipment
(Kamikitazawa Water Supply Station)

Updating to high-efficiency equipment

We can anticipate power saving effects by replacing air conditioning equipment and lighting, etc. in our offices with high-efficient equipment. Also, we aim to use energy more efficiently by replacing equipment with high-efficiency equipment at the time of their replacement. During FY 2023, we replaced 5 lights, 7 air conditioners, and 7 transformers with high-efficient equipments.



High-efficient transformer
(Yakumo Water Supply Station)

Solar Power Generation

Bureau of Waterworks effectively uses spaces such as the top of distribution reservoir at purification plants and the roofs of buildings for solar power generation systems. During FY 2023, we have constructed solar generation systems at the Kiyoseumezono Water Supply Station and Jindaiji Water Supply Station and we generated a total of 7.01 GWh across our 25 solar generation systems.

Small Hydraulic Power Generation

Bureau of Waterworks is performing power generation in a system uniquely applying to waterworks, such as a system of utilization of elevation difference between a reservoir and a purification plant or of utilization of water pressure at the gate of distribution reservoirs of water supply stations. During FY 2023, total amount of power generation was 2.74GWh.



Solar Panels



Small Hydraulic
Power Generators

Introduction of zero-emissions vehicles* (ZEV)

As of the end of FY 2023, Bureau of Waterworks owns about 590 four-wheeled vehicles and about 120 motorbikes. By actively utilizing ZEVs and electric motorbikes that do not discharge CO₂ or air pollutants, we are contributing to reducing CO₂ emissions of the whole society. In FY 2023, we procured 5 ZEVs, 6 electric motorbikes, and a boat with zero emissions.



Electric vehicle (PHV)



Electric motorbike

* Refers to electric vehicles (EV), plug-in hybrid vehicles (PHV), and fuel cell vehicles (FCV).

Protecting and Maintaining Water Conservation Forests

Water that falls on forests flows through reservoirs, rivers, and water purification plants before arriving at taps as drinking water. Water conservation forests in the upper reaches of the Tama River store and clean water. Bureau of Waterworks has conducted management of water conservation forests for about 120 years to preserve rich forests that nurture water.

Water conservation forests have an area of 25,444 ha, or about 41% of the Ward Area of Tokyo.

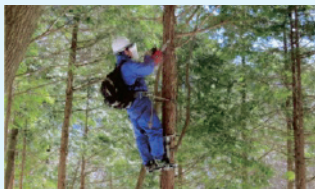


Approaches to protect water conservation forests

Forests have several functions—to purify the water by storing it in the soil, to prevent sediment run-off and landslides through branches, leaves and tree roots, and to absorb CO₂ through photosynthesis. Bureau of Waterworks raises sound forests, in order to fully demonstrate the functionality of these forests.

Forest preservation operations

In order to make full use of the various functions of forests, we cultivate them to be composed of trees of various ages, heights, and species, by repeatedly thinning and pruning vegetation to let light in. We did 612 hectares of thinning and pruning in FY 2023.



Forest preservation operation

Purchasing privately owned forests

To manage the devastated privately-owned forests in the upriver reaches of the Tama River, we are promoting a purchasing project. We will be actively purchasing areas where there is concern that soil will erode into the Ogouchi Reservoir, for about 10 years starting in 2017. We have bought approximately 3,814ha of private forests by FY 2023.



Developed forest

Forest development activities in collaboration with Tokyo residents

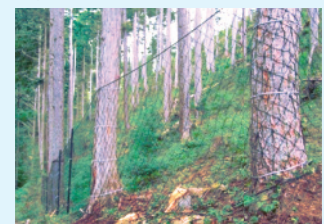
The Tama River Water Conservation Forests Team was established, to preserve privately-owned forests that have become devastated due to lack of maintenance, in cooperation with Tokyo residents. In FY 2023, we worked with 1,538 volunteers to carry out preservation activities. To make people understand the importance of protecting water conservation forests, we are distributing e-mail newsletters and holding water conservation forests tours (video tours in FY 2023).



Volunteer activity

Consideration towards biodiversity

Management of water conservation forests also helps protect the organisms that live in the forest. In recent years, there has been damage to trees due to Sika deer eating bark, etc., and there is the risk of a large impact on biodiversity. As such, we have installed fences to prevent invasion by the Sika deer, and are carrying out management and capture of deer to an appropriate population, in coordination with the local government and relevant organizations such as hunters associations.



Fence to prevent invasion by Sika deer

Recycling Resources

Water purification and construction works produces a lot of surplus soil and garbage. In addition, in maintaining and managing the water conservation forest, much wood is generated from cutting down trees. Rather than simply disposing of this wood, it is used effectively without any waste.

Recycling granular activated carbon

Since granular activated carbon required for advanced water treatment may reduce its function to absorb such elements as source of smell, periodical replacement of it is required. In FY 2023, about 9,000 tons of granular activated carbon was generated annually. Currently, such carbons are utilized perfectly as horticultural soil and fuel adjuvant auxiliary agent.



Granular activated carbon used for advanced water treatment



Utilizing granular activated carbon for gardening soil

Recycling of wood generated from the water conservation forest

To ensure that the forest is made up of a variety of types and generations of trees, in forest management operations, we create space to plant new trees, carry out final cutting while leaving certain trees that have grown sufficiently, and carry out thinning so that light enters the forest.

Wood that is generated from final cutting is used for civil engineering/construction materials, biomass power generation, etc. Wood that is generated from thinning is used for earth retaining in forests, footpath landings and wooden fences for forest management. Therefore, 100% of this wood is used effectively.



Wood collecting

Reducing usage of resources

Waste is generated such as through using large amounts of paper and plastic at work. Incineration and landfilling of waste puts large burdens on the environment, such as discharge of harmful substances and soil pollution. When plastic is used, marine pollution and CO₂ emissions increase. By reducing usage of such items, environmental burdens can be reduced.

Promoting “paperless

Bureau of Waterworks is actively working to promote paperless system. By introducing portable tablets and conference monitors, paperless meetings are being promoted.

In addition, initiatives are also being taken towards paperless meter reading slips and invoices for water bills. We are encouraging people to switch from paper to paperless accounts through Tokyo Water App.



Icon and screen of Tokyo Water App

Reducing Use of Plastics

In meetings hosted by Bureau of Waterworks, we are thoroughly ensuring that we don't use any plastics. We stopped selling “Tokyo water”, which used to be sold in plastic bottles, and have installed environment-friendly Tokyowater Drinking Stations (please see next page for details) and are recommending people to bring their own bottles.

Bureau of Waterworks employees are also encouraged to bring and use their own water bottles and reusable shopping bags. We are making approaches to raise awareness towards reducing plastics through e-mail newsletters and trainings.



Switching from plastic shopping bags to your own bags

Environmental Communication with Customers

To advance our environmental approaches, it is necessary to gain understanding and cooperation from our customers and many other people. By actively communicating with customers, we are conducting approaches to deepen their understanding of our environmental projects.

Waterworks Caravan

To promote deep understanding of waterworks of local customers and elementary school students who represent the next generation, we are implementing 'Waterworks Caravan' (visiting lecture) at elementary schools, children's centers, seminars for the general public, etc. Waterworks Caravan consists of skits, movies, experiments, etc. to enable kids to understand easily how to produce and supply tap water.

In FY 2023, we visited 1,213 elementary schools and held 143 lectures at children's centers etc., adopting measures against COVID-19.

In these lectures, the role of water conservation forest and water saving will also be explained to receive feedbacks from students that such as they have learned to use water with care.



Waterworks Caravan at children's center

Tokyowater Drinking Station Promotion

We are promoting Tokyowater Drinking Station ("DS") at public spaces and event sites. We will assist customers to take eco-action through promoting DS.



Outdoor location type DS



Water bottle

Environmental Communication with Various Entities including Corporations

We are promoting environmental approaches through communicating with various entities, such as corporations, universities and overseas entities. We are also taking the initiative to raise awareness of environmental issues among our employees.

Tokyo Waterworks - Corporation Forests- (Naming Rights)

We have established naming rights for parts of our water conservation forest. Companies can name the part of forest using their company name, and the companies and Tokyo Waterworks are working together to take care of the forests.

We promote understanding of water conservation forest by providing companies participating in the Tokyo Waterworks -Corporation Forests- (naming rights) program with opportunities to visit water source forests and experience forest conservation work in the agreed areas. In FY 2023, 11 corporations experienced the activities.



Forest conservation experience (Forest thinning)

Collaboration with business operators

We award business operators, such as construction contractors who have implemented approaches which helps to enhance the image of water supply works by the active environmental measures with taking the local region into consideration.

In addition, to carry out environment-friendly construction works, we strive to reduce environmental burdens in construction by collaborating with business operators. For example, we



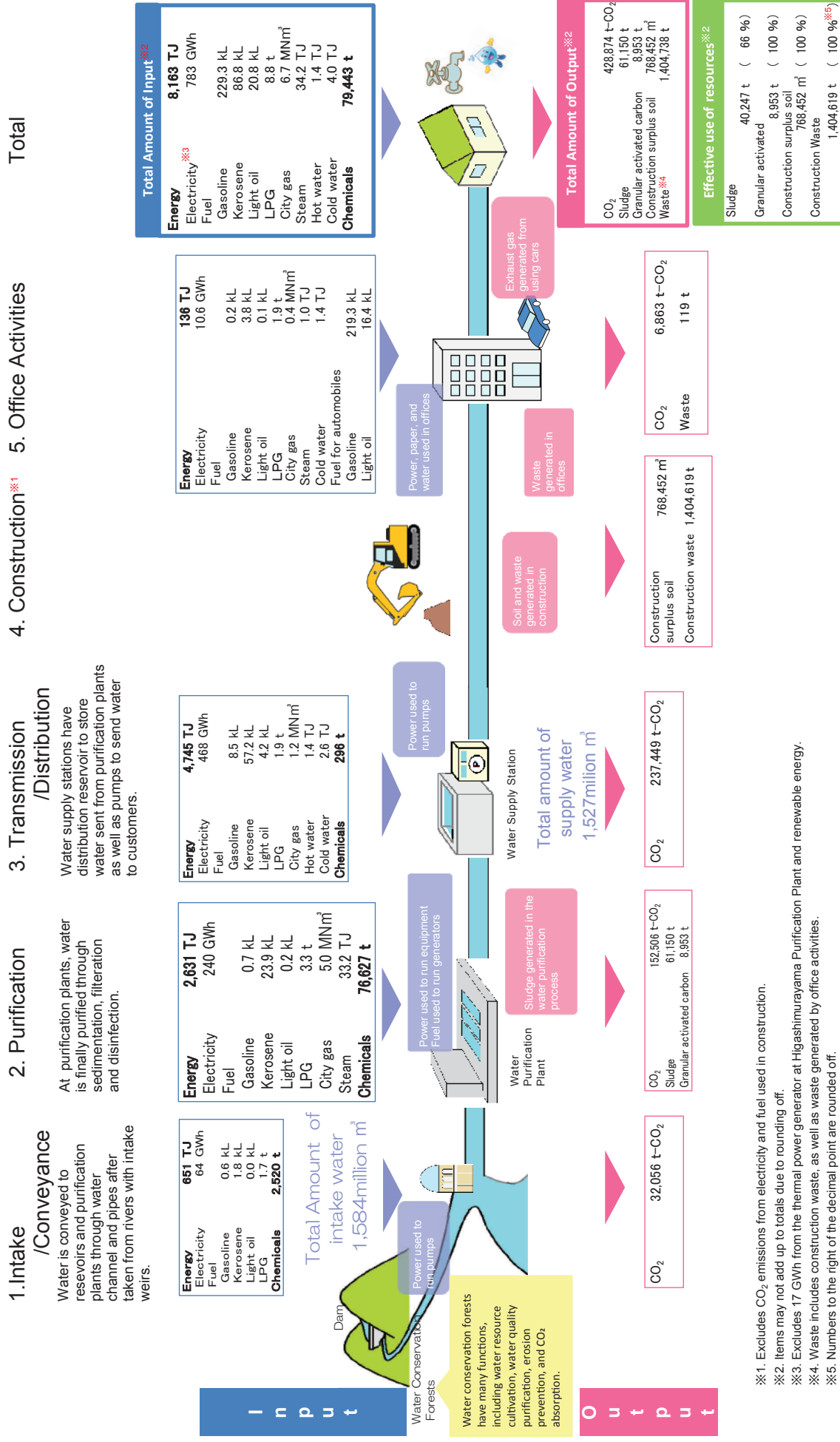
Noise control measures by battery-powered generator (Example of commendation)

are requiring the use of low-emission construction machinery, and we are adopting a construction method that reduces excavation (non-open cut tunneling method) to curtail road construction.

Impact on the environment from the waterworks business

The waterworks business makes and delivers tap water in a state that is safe to drink, so it is deeply connected to the global environment. However, a great burden is placed on the environment in order to make tap water and deliver it to customers, such as using a large amount of electricity and other energy, and emitting CO₂.

The diagram below shows the positive impacts and negative impacts on the environment, as well as the matter used (input) and matter emitted (output) by Bureau of Waterworks in each step from intaking water to delivering it to the customers.



*1. Excludes CO₂ emissions from electricity and fuel used in construction.

※2. Items may not add up to totals due to rounding off.

※3. Excludes 17 GWh from the thermal power generator at Higashimurayama Purification Plant and renewable energy.

※4. Waste includes construction waste, as well as waste generated by office activities.

※5. Numbers to the right of the decimal point are rounded off.



Notification and
Charges

Water Quality and
Water Resources

Water Supply in
Everyday Life

Businesses of
Bureau of
Waterworks

Public Relation

For Water
Professionals



About Tokyo
Waterworks



International Cooperation of
Tokyo Waterworks

International Cooperation of
Tokyo Waterworks



Knowledge and
Techniques



Private Companies
Support Program



Efforts on Energy Efficiency
and Environmental
Measures in the World



The Asian Waterworks
Utilities Network of
Human Resource Development



☆☆ We look forward to your visit to our website ☆☆

<https://www.waterworks.metro.tokyo.lg.jp/eng/waterprofessionals/>



Editor/Publisher

November 2024 (No.158,Class 1,FY2024)

Planning and Coordination Section,

General Affairs Division,

Bureau of Waterworks,

Tokyo Metropolitan Government

Nishishinjuku 2-8-1. Shinjuku, Tokyo 163-8001, Japan

Tel: 03-5320-6333

